

**SOAS
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IN
LINGUISTICS**

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SOAS

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**Department of Linguistics
Faculty of Languages and Cultures
School of Oriental and African Studies
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DEPARTMENT OF LINGUISTICS
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Editorial Note

We are delighted to present this year's volume of *SOAS Working Papers in Linguistics*, which represents the ongoing research of the staff, research students and research associates of the Department of Linguistics at SOAS.

The quality and variety of papers in this volume reflects not only the work of the department, especially in the field of theoretical linguistics, but also the diversity of linguistic research currently being carried out at SOAS within the Faculty of Languages and Cultures as a whole.

The papers have been divided into five sections: Phonology and Phonetics, Syntax and Morphology, Semantics and Pragmatics, Endangered Languages, and General Linguistics. We note, however, that some of the papers somewhat bridge these divisions.

With the publication of this volume of *SOAS Working Papers in Linguistics*, we would also like to take this opportunity to welcome to the Linguistics Department the Hans Rausing Endangered Languages Project, which was officially launched in February 2003.

Last, but not least, we would like to thank everyone who gave help, encouragement or advice, in particular Monik Charette, who provided advice, support and practical assistance, as always. Thanks also go to the staff in the Faculty Office, especially Debbie Nelson. Additionally, we would like to acknowledge the help and advice of the other members of the Editorial Committee, Andrew Simpson and Lutz Marten, as well as that of various reviewers, including Justin Watkins. We are also grateful to the staff of SOAS Print Room.

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The Editors

Contributions to the Strict CV phonology analysis of connected speech phenomena

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0 Overview

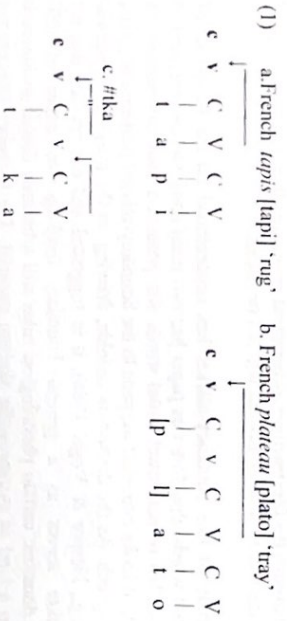
The fact that the left edge of (phonological) words is a strong position counts as a phonological commonplace. This basically means that the beginning of the word favours fortition processes and disfavours lenition both synchronically and diachronically. Theories have usually attempted to account for this with reference to the word boundary (#) or to foot-initial position. As an alternative, most practitioners of Strict CV Phonology (launched by Lowenstamm 1996), which, being a subbranch of Government Phonology, describes fortition and lenition phenomena as the result of the interaction of government and licensing relations (cf. Ségéral & Scheer 1999), assume that each word of a major category starts with a melodically empty CV unit on the skeletal tier, marking the word boundary (after Lowenstamm 1999). One of the functions of the boundary-marker in a cvCV... word (that is, a word starting with a single consonant followed by a vowel, where lower-case letters denote empty skeletal positions) is to absorb the (destructive) government emanating from the first vowel of the word, thus the word-initial consonant will not be negatively affected.

So far, the study of this boundary-marker has concentrated on the behaviour of consonant-initial words, therefore this paper has two main aims. On the one hand, it investigates whether or not vowel-initial words also possess a boundary-marker; on the other hand, it looks into what happens to the boundary-marker post-lexically, i.e., in connected speech. As the discussion unfolds, drawing on the insights of Prosodic Phonology (e.g., Nespors & Vogel 1986), it is suggested and exemplified that the boundary-marker serves as a general boundary marking the edges of (all) phonological domains: certain phonological rules will arbitrarily decide to ignore it and treat it as a kind of extraprosodic skeletal material. The boundary-markers not ignored by a given rule will delimit its domain by blocking its application. Also, a typology of the effects of the extraprosodic (i.e., ignored) boundary-marker is provided, which highlights the special status of the situation when a consonant-final word meets a vowel-initial one. Several examples are given, mostly from English, and further questions are asked.

0.1 Introduction

Strict CV Phonology or CVCV Phonology (henceforth CV Phonology) is a radical sub-branch of Government Phonology (GP – KLV 1985, KLV 1990, etc.). It accepts certain basic tenets of GP, including the essentially non-derivational nature of grammar, the theory of analytic vs. synthetic domains, and the claim that phonotactic and procedural facts are (largely) due to asymmetrical relationships like government and licensing contracted by phonological units. However, CV phonology (Lowenstamm 1996 and subsequent work) represents pioneering work representation-wise; it hypothesises that prosodic structure is universally composed of strictly alternating CV units, and clusters of adjacent consonants or vowels arise when a language licenses domain-internal empty skeletal positions via (proper) government (familiar from GP). Domain-finally, the empty nucleus is parametrically licensed in languages which allow for consonant-final words.

A further innovation introduced by Lowenstamm (1999) and under close scrutiny in the present paper is the empty CV unit posited to the left edge of each major category, marking the beginning of the word and serving as the phonological embodiment of traditional # (henceforth the boundary-marker). As argued in Lowenstamm 1999 and Segetal and Scher 1999 (in the theory of the Coda Mirror), this boundary-marker can be used to explain certain phonotactic and lenition facts characteristic of the left edge. This is illustrated in (1): Proper Government (PG) emanating from non-empty V positions (indicated by capital Vs) licenses/silences the empty vocalic position (lower-case v) of the boundary-marker of words starting with a single consonant (1a) or a cluster which forms a closed domain (cf. Scher 1996) (1b), as opposed to words starting with consonants unable to enter into this special relationship (dubbed Infrasegmental Government by Scher) (1c) where the empty v straddled by the consonants consumes the PG coming from the first pronounced V, and thus the boundary-marker is left unlicensed. (Such consonant clusters are sometimes called bogus clusters.) As a consequence, its v cannot remain empty, and therefore no word starting with such a cluster will surface in languages like French. (In the following discussion, lower-case c's and v's symbolise empty positions while capital letters indicate non-empty positions.)



If government is generally considered as a destructive force silencing vowels and causing the lenition of consonants (as suggested in the Coda Mirror and further elaborated on in Diens and Szigetvári 1999, Szigetvári 1999), the configurations in (1) also account for the fact that the beginning of the word systematically resists lenition: the v position of the boundary-marker distracts this destructive force and the word-initial C escapes weakening.

According to the workings of the boundary-marker, two basic language types are predicted. On the one hand, Moroccan Arabic, Berber, Greek and others have been shown to allow for any combination of consonants as well as lenition word-initially. Such languages will henceforth be referred to as 'permissive'. Other languages like French or English, however, display a strong preference for rising sonority clusters word-initially (#TR), as illustrated in (1), and no lenition is expected at that location. We can call these languages 'strict'.

The proper way to distinguish these two language types is one of the main concerns of the present paper. So far, two options have been provided. Lowenstamm (1999) represents the original stance claiming that the boundary-marker is always licensed (i.e. always requires PG) in 'strict' languages (that is why bogus clusters are

prohibited word-initially) whereas it is not always licensed in 'permissive' languages (depending on the cluster in question). In contrast, according to Scher (2001), the distinction lies in the presence vs. absence of the boundary-marker: in 'strict' languages it is present and needs licensing while in 'permissive' languages it is absent, and thus it never needs PG.

Later, the issue of the typology created by the boundary-marker will be taken up again; but first, let us examine some other aspects of cross-word phenomena, with examples from 'strict' languages.

1 Prosodic domains

It has been well-known for decades that all phonological rules apply within certain sub-strings of the phonological utterance (including the utterance itself) called the domain of the rule. As the theory of domains, Prosodic Phonology (PP) claims, there exists a hierarchy of prosodic constituents which serves as the inventory from which the rules choose their domains of application. Although authors slightly differ as to what these constituents are, the common core of all models includes the syllable, the foot, the phonological word, the phonological phrase, the intonational phrase and the utterance. The most convincing piece of evidence for the inevitability of PP comes from cases when the application of a given phonological rule depends on non-phonological (mainly syntactic) information: under the same segmental conditions, for example, French liaison applies in phrases of a certain type but fails to do so in phrases of a different type, cf. (2a) and (b).

- (2) a. un [savant]_A [anglès]_N 'a learned Englishman': liaison
 b. un [savant]_N [anglais]_A 'an English scientist': final consonant deletion

It is also evident that rules select their domains of application arbitrarily. Rules with similar structural descriptions and changes may apply within different domains, as is the case of final consonant liaison in French (within the phonological phrase) opposed to r-liaison in English (within the utterance). Even the same phonological rule may choose different domains in the dialects of the same language: in English, l-darkening applies within the utterance in RP whereas it applies within the word in several American dialects.

In CV phonology, the left word boundary is marked by the empty CV unit. If it is the boundary-marker that makes the beginning of the word a strong phonological position, it means it blocks the application of lenition rules (where 'rule' of course means something like the interplay of forces like government and licensing). It follows, then, that this empty skeletal unit can be conceived of as a general boundary-marker which circumscribes a given rule's domain of application, at least in the case of segmental alternations, and rules taking constituents larger than the foot as their domain.

2 How does the boundary-marker work?

Connected speech has not been given much attention in CV phonology. Tobias Scher (2001 and p.c.) has suggested that the boundary-marker is not present in the lexicon but is inserted by the morpho-syntax. The insertion is governed by a simple parameter: in certain languages it applies on the edge of the utterance only, and at all word boundaries in others. Recall the findings of PP and notice that the picture is not

as simple: constituents between the word and the utterance may also be designated as domains. In addition, in the same utterance boundaries of the same type may block the application of one rule but let go another. Thus we are forced to hypothesise, against Scherer, that the boundary-marker is part of the representation throughout its career, its fate being determined post-syntactically only: certain phonological rules will arbitrarily decide to ignore it and treat it as a kind of extraprosodic skeletal material. The boundary-markers not ignored by a given rule will delimit its domain by blocking its application. Besides accounting for a wider set of empirical observations (including phonotactic facts, which are difficult to explain if the boundary-marker is only inserted late by the morpho-syntax), this no-insertion analysis represents a mechanism with less brute force. The chart in (3) compares the insertion (3a) and the extraprosodicity (3b) analyses of two connected speech phenomena in an American English dialect (described in, e.g., Nespor and Vogel 1986). In this dialect, all word-final /r's are dark irrespective of the following segment. Word-final /r's, on the other hand, although glottalised in isolation, change to a flap when followed by a vowel-initial word.

(3) American English /r-darkening	and /r-flapping
<i>call</i> = <i>call Anita</i>	<i>hit</i> vs. <i>hit Anita</i>
blocking effect of boundary-marker	no (or different) – see Section 3.2) blocking effect
(a) insertion => inserted	=> not inserted
in identical syntactic positions, the boundary-marker may be present or absent depending on the quality of the final segment of the preceding word	
(b) 'extra-prosodicity' effect, since /r-darkening cannot ignore it	=> present but flapping ignores it

To illustrate the extraprosodicity and the blocking effect of the boundary-marker, let me present you with a possible analysis of French liaison, whereby the floating melody of certain word-final consonants attaches to the onset of the following vowel-initial word. Apparently, this consonant can only land in a C position where it is governed (and licensed), otherwise it remains floating and therefore unpronounced.¹ The partial representation of *un [savant]_λ [anglais]* in (4a) shows how the floating melody of the final consonant of the adjective, symbolised by /λ/, docks onto the first C position of the following word when the boundary-marker is extraprosodic, i.e., invisible for the rule of liaison. However, when the boundary-marker serves as the boundary of the domain of application for liaison, as in (4b), it prevents the floating melody from finding a suitable landing site by absorbing the government emanating from the word-initial vowel. Thus the /λ/ will remain phonetically uninterpreted, that is, 'final consonant elision' takes place. (For the suggestion that V-to-C government operates on the melodic tier, see Balogné 2001.)

¹ As noted in Szegedvari (1999, 62, fn. 68), it is being governed, rather than being licensed, which triggers the interpretation of the lexically floating melody, although this analysis is slightly different since he works with a VC skeleton, and ignores the variation due to prosodic structure.

(4) a. liaison: <i>un [savant]_λ [anglais]</i>	b. no liaison: <i>un [savant]</i>
<i>[anglais]_λ</i>	
... C V <e v> c ⇨ V ...	... C V e v c ⇨ V ...
g g w g ...	g g g ...
... v a t ...	... v a t ...

In (5) the situation when the following word begins with a consonant is exemplified. Notice that in that case the presence or absence of the boundary-marker makes no difference: no governed empty c position is accessible for the floating melody in either way.

(5) no liaison: <i>un [savant]_λ [francais]</i>
... C V e v C v C V ...
g g | | |
... v a t | f a ...
... C V e v C v C V ...
g g | | |
... v a t | f a ...

It is worth mentioning at this point that the boundary-marker, and in fact empty c and v positions in general, will not block superficial, phonetic resyllabification. As an illustrative example, consider the case of s-aspiration in Spanish, whereby /s/ lends to /h/ in syllable codas' (i.e., when dominated by an unlicensed C position). Although in connected speech word-final consonants resyllabify into the following vowel-initial word phonetically, they do not usually do so phonologically (but see more on this issue in Section 3.2), i.e., lentil consonants do not strengthen back across words: *tiens espacia* 'do you have room?' is pronounced *tiens [h] e[ʔh] pacio*². The point here is that even though word boundaries may become faded away phonetically, there is some evidence for the existence of empty skeletal material.

3 A typology of the effects of the extraprosodic boundary-marker

In this section we take all the combinatorial possibilities of consonant/vowel-final and consonant/vowel-initial words in connected speech, and make a comparison of cross-word and word-internal configurations.

3.1 Consonant-initial words

In the table in (6), the four possible combinations of words followed by a consonant-initial word are sketched out, showing the patterning of empty and nonempty positions on the CV-tier in each case, assuming that the segment occupying the underlined position is affected by some phonological rule ignoring the boundary-marker. At the bottom, for ease of comparison, the corresponding word-internal structures are provided. The fact that CV phonology predicts all these situations to be identical is borne out by the data.

² Cf. Kenstowicz (1994: 281)

(6) Consonant-initial words:

- a. V#C
 ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ...
 b. V#C
 ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ...
 c. C#C
 ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ...
 d. C#C
 ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ...

For example, (6b), an intervocalic consonant affected by the phonology in the same way in both cross-word word-initial and word-internal positions is illustrated by Italian intervocalic spirantisation (Nespor and Vogel 1986: 209), whereby all the underlined /f/'s (spelt <v>) in the following example sentence turn into /f/, irrespective of whether at the beginning or in the middle of a word: *Il mio criteo cerca il suo cibo negli angoli della gabbia* 'My hamster looks for its food in the corners of the cage'.³

Hungarian regressive voicing assimilation exemplifies the configuration in (6c): it exists as a static phonotactic constraint (*ʔk morpheme-internally), and it applies across morpheme (*izkor* 'at ten' with /sk/) as well as word boundaries (*iz kor* 'ten circles' with /sk/).

In sum, in all the situations in (6), it is correctly predicted that the cross-linguistic tendency is for the extraprosodicity of the boundary-marker to create the same picture as there is word-internally.⁴

In addition, however, a parameter reveals itself. In certain languages, e.g. English, the word-initial consonant (of lexical words) will always be in a strong phonological position (i.e. licensed but ungoverned), as opposed to other languages, e.g. Italian (cf. the rule of intervocalic spirantisation, described above), with word-initial consonants changing shape post-lexically, which suggests that in languages of the English type the boundary-marker resists extraprosodicity in the case of consonant-initial words – an observation whose true nature is still unclear, but obviously this distinction is independent of the strict/permissive dichotomy mentioned above, both English and Italian belonging to the strict type.

3.2 Vowel-initial words

Consider the table in (7), the vowel-initial equivalent of (6). (7a) and (b) show the two subtypes of cross-word hiatus: it is clear that again, CV Phonology predicts total identity, which is supported by plenty of data, at least for (7a); in cases of hiatus resolution via vowel deletion, for example, it has been shown that there is a general tendency for deleting the first vowel in all morphosyntactic environments (Casali 1997).

(7) Vowel-initial words:

- a. V#V
 ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ...
 b. V#V
 ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ...
 c. C#V
 ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ... CV <cv> CV ...
 d. C#V
 ... CV ... CV ... CV ... CV ...

³ The voiced affricate /dʒ/ undergoes spirantisation alike (<ʒ/).

⁴ A related issue posing problems for the theory is examples of processes (other than lengthening rules) which apply across word boundaries but not within words, e.g. word-final voicing in Sanskrit (which is problematic for most phonological theories since it is triggered by vowels and sonorant consonants, too – cf. Nespor and Vogel 1986: 230), or cross-word voicing in Slovak (Blaho 2003).

In (7c) and (d), however, even if the boundary-marker is extraprosodic, there remain some empty skeletal material between the full positions, and as a result, the cross-word configuration is not identical to the simple word-medial CV string. Unfortunately, I have only come across few examples of vowels undergoing a process as in (7d), one of them being vowel centralisation in Nawuri and related languages (Casali 1997: 502). Here high vowels become central in interconsonantal position, in both 'closed' and 'open' syllables (in Strict CV Phonology: CV#CV and CV#CV, respectively, which suggests that the trigger is the two nonempty consonants sandwiching the vowel). What is of interest here is what happens to vowels at word edges. As Casali reports (unfortunately, without any examples), word-final vowels in the CV#C environment may be affected by the change in the same way as word-medial vowels (as predicted in (6a)) as opposed to word-initial vowels, i.e., CV#C, which never get centralised. This difference between (6a) and (7d) is quite unexpected in any framework except CV (and Classical Government) Phonology. In fact, Casali uses the Nawuri example to argue for an asymmetry existing between word-initial and noninitial positions – an observation which naturally follows from strict CV representations.

If we turn our attention to (7c), we discover a number of cases illustrating it, a close inspection of which leads to a three-way classification. First, the underlined C in (7c) may resyllabify completely into a licensed position and behave as any other 'onset', Recall that this is the situation which is straight against CV Phonology's predictions, which turns out to be a strength rather than a weakness of the theory since, as argued in Kenstowicz (1994: 281), there are very few examples of this kind: in fact, phonological resyllabification counts rather as an exception. One example described by Kenstowicz comes from Spanish: a 'coda' /r/ is trilled in emphatic speech in both word-internal and word-final position (in CV Phonological terms, when followed by an empty v, which cannot license it), may be trilled when followed by a consonant-initial word, but cannot be trilled before a vowel-initial one (cf. (8)). What is particularly intriguing here is that all those many other phonological rules of Spanish particularly affecting 'coda' consonants (e.g., s-aspiration, already referred to above, or n-velarisation) apply differently, so this pattern seems to be the odd one out even within the system of Spanish.

- (8)
- | | |
|---|--|
| <i>martes</i> 'Tuesday', <i>mar</i> 'sea' | trilled |
| <i>mar verde</i> 'green sea' | free variation |
| <i>mar azul</i> 'blue sea' | no alternation possible: never trilled |

Another example is l-darkening in certain dialects of English, e.g. RP, whereby 'coda' /s/ become velarised, as in (9a-b), with the exclusion of word-final /s/ followed by a vowel-initial word (or suffix), which are pronounced as 'clear' as their word-internal onset peers (9c).

- (9) Clear and dark /s/ in RP
- | |
|---|
| a. Clear /s/: <i>leap, sleep, fellow, mylord</i> |
| b. Dark /s/: <i>spell, spell, shelter</i> |
| c. Clear /s/: <i>spell it, call Ann, spelling</i> |

It will be argued below that no convincing evidence has been found that these consonants do in fact resyllabify completely rather than taking an intermediate position (traditionally referred to as ambisyllabicity).

The *second* strategy that a word-final C may follow is remain a phonological coda, e.g., in the case of Spanish s-aspiration already referred to above, or l-darkening in certain American English dialects exemplified in (3). In these cases we claim that the word-boundary represented by the boundary-marker functions as a blockage for these rules (the prosodic) word being the domain of rule application – an arbitrary feature of the rules themselves.

Thirdly, the C may behave as neither an onset nor a coda but take a third form: it is 'ambisyllabic'. English readily illustrates this pattern, containing at least two rules where the cross-word realisation of a consonant differs from both the coda and the word-medial onset. One is the distribution of Standard American t-allophones, whose well-documented characteristics are the following (cf. Balogne 2001). Within words, an onset /t/ is flapped if followed by an unstressed vowel, but aspirated if followed by a stressed one ((10a), also in (3)). Word-final t's are (pre-)glottalised pre-pausally and pre-consonantly (10b), but flapped if the next word starts with a vowel, irrespective of whether or not that vowel is stressed (10c). The point is that the cross-word allophone in C#V is different from the word-medial one (in being stress-insensitive), correctly predicted by CV Phonology (for an analysis, see Balogne 2001).

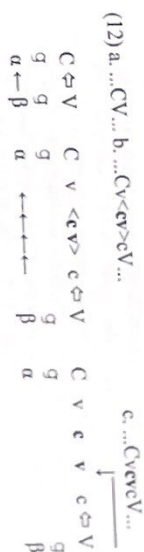
- (10) General American t-allophones
 a. $\text{a}[\text{t}^h]\text{fom atom}$, $\text{a}[\text{t}^h]\text{fomic atomic}$
 b. $\text{hi}[\text{t}] \text{me hit me}$
 c. $\text{hi}[\text{t}] \text{Am hi Am}$, $\text{hi}[\text{t}] \text{Anita hi Anita}$

Exactly the same happens in (conservative) RP r-allophony. /r/ undergoes tapping/flapping, with an output identical to that of t-flapping, intervocally, whenever followed by an unstressed vowel word-internally (compare (11a) and (b)), or any vowel across words (11c).

- (11) RP r-allophony
 a. $[\text{r}]: \text{cour} \text{age}$, *very, sorry, baron, laurel*
 b. $[\text{r}]: \text{cour} \text{ageous}$, *reduce, red, bright, Henry, walrus*
 c. $[\text{r}]: \text{for example, for instance, the other end}$

These examples illustrate the fact that the situation C#V is special and calls for a theoretical equivalent of cross-word ambisyllabicity. For a possible analysis in Strict CV Phonology, see Balogne (2001), further elaborated on in Balogne (2002). The basic idea behind it is the difference in adjacency between the prosody and the melody in a theory operating with a host of empty skeletal positions. A word-medial consonant (12a) is adjacent to the following vowel both melodically (indicated by the simple arrow) and on the CV-tier (where the V licenses the C, indicated by the white arrow). Across words (12b-c), the two will only be adjacent on the melodic tier, where I claim, is government, which is not consumed by the boundary-marker when it is extraprosodic. The same word-final consonant, however, will remain uninfluenced by

the following word when the boundary-marker is not extraprosodic, and the government emanating from the full vowel is needed to license and silence its vocalic position (12c).



Thus, three possible combinations of skeletal and melodic adjacency are possible, and the English cases (t-flapping (10), r-tapping (11)) are distinguished from the other examples by the rules applying in three different ways accordingly. The question is whether the 'resyllabifying' rules described above (RP l-darkening (9), Spanish trilled /r/ (8)) are essentially any different. It may simply be the case that, quite unexpectedly and exceptionally, there is no phonetic difference between the realisations of these consonants in situations (12a) and (12b), and that is why the superficial impressions of that they have become onsets. The exact definition of the structural descriptions of phonological rules may be of key importance; sometimes it is not the interaction of government and licensing which produces a given allophone, but reference to only one of the two antagonistic forces may prove to be enough for a change. A governed /r/ will be flapped in General American, a governed /r/ will be tapped and a governed /r/ will be clear in RP, a governed /r/ will be plain (rather than trilled) in Spanish, irrespective of the rest of the structure. Recall the discussion of French liaison above: it has been shown that the appearance of the word-final floating consonantal material is sensitive to government and ignorant of licensing relations.

4 Further issues

In sum, the boundary-marker is assumed to be present to the left of each (lexical) category, at least in so-called 'strict' languages, and the phonological rules spelling out the realisation of sound segments contain information about which prosodic constituents serve as their domains of application. Boundary-markers delimiting those constituents will block the rules, others will be skipped being 'extraprosodic' in some sense. Formulating the syntax-phonology mapping algorithm, i.e., the formation of the constituents of the prosodic hierarchy, is beyond the scope of the present paper, so we simply accept the PP view (e.g., that of Nespor and Vogel 1986).

Neither is the issue of so-called 'permissive' languages addressed in this paper. These are the languages which freely tolerate all types of consonant clusters word-initially and which allow for word-initial lenition (Greek and many Slavic languages such as Moroccan Arabic Polish, as well as modern occidental Afro-Asiatic languages such as Moroccan Arabic or Berber have been claimed to belong to this type). In these languages, or Lowenstamm's theory poses the boundary-marker at the beginning of words in the same way as in 'strict' languages, the only difference being that the permissive boundary-marker need not be always licensed (Lowenstamm 1999). In contrast, Scherer's modification claims that the boundary-marker is not present at all in such languages (Scherer 2001, and Seigneur-Froli 2004 for Greek). Considering cross-word phenomena, it must be remarked that even in 'permissive' languages there are rules bounded by the prosodic constituents, e.g., Nespor and Vogel (1986: 213) analyses Greek s-voicing as applying within the intonational phrase. If the suggestions made in

this paper are accepted, and it is the boundary-marker that blocks rule application, certain occurrences of the boundary-marker are justified in permissive languages, too.

A related issue is the additional factor influencing the conditions on lenition: stress. English and Germanic languages in general are well-known for being stress-sensitive systems, i.e., making a distinction between the onsets of stressed and unstressed vowels in their propensity to lenite, the stressed position being as strong as the word-initial one. Other languages, like Romance (e.g. French), are stress-insensitive. It is clear that the stress-sensitive vs. insensitive distinction divides 'strict' languages into two well-defined classes, but its relation to the strict vs. permissive dichotomy is a subject for further study.

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On laryngeal contrasts and the definition of 'emphatic' (or: When is a *t* not a *t*?)*

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0 Introduction and aims**

The core of this paper concerns the notion and nature of 'emphatic'. What is often called 'emphatic' is not always uniform, in that emphatic *t* in one language is not the same as 'emphatic' *t* in another.

Anyone asked to comment briefly on the phonology of Arabic is highly likely to mention 'emphatics', a set of sounds which have been the subject of much discussion. In the same breath, it may also be mentioned that the emphatics pattern with the pharyngeals. Emphatics, however, are not some strange quirk of Arabic. The Semitic languages in general have 'emphatics', although in many Semitic languages they are actually realised with glottalisation as ejectives. The reason given for this is historical in nature, as it is widely believed that the Arabic emphatics developed from glottalics. However, interesting as this may be, it is not the whole story. Some (varieties of) languages that have emphatics similar to those of Arabic are reported also to glottalise these segments. Confusingly, it is not always clear what exactly we are dealing with, since descriptive grammars often adopt slightly vague or ambiguous terms, and since it is conventional to transcribe both emphatics and ejectives with a subscript dot (e.g. *t*); thus descriptive grammars, so often a rich source of data, often do not yield a harvestable crop.

This paper seeks not only to ask the question 'why?', but also to go some way towards answering it. In a nutshell, our concern is thus with what exactly 'emphatic' and 'ejective' are, in both physical and psychological terms, and with the nature of the correlation between the two (in Semitic). This involves investigating their shared history. Ultimately, we aim to identify the internal structure of these segments, with the expectation that each will have a similar status within the different phonological system in which it occurs.

This paper constitutes a small part of an ongoing investigation into the phonological status of 'pharyngeal', with Arabic emphatics as a central focus. Broadly, the investigation seeks to identify and account for the phonological, phonetic, historical and typological relatives of emphatics, or to reinvent a phrase from the grammarian Sibawayh, the 'sisters' of the emphatics.

1 Background

In this section we intend to contextualise the phenomena under investigation. Thus, we will look at what exactly we mean by 'ejective' and 'emphatic', since there is some overlap between the latter term and the realisations of the two phenomena. This overlap is what we are seeking to investigate and account for, and will be contextualised and detailed further in Section 2.

* Answer: When it's a *t*' or a *t*'.

** Thanks are due to Kirsty Rowan, Monik Charette and John Harris for devoting time to helpful discussion and suggestions. The traditional disclaimer about errors being mine must also come here.

In Section 1, then, we first discuss ejectives, giving an overview of physical descriptions (in order to define the term 'ejective') and then of acoustic cues. We will then move on to an overview of the articulation of the Arabic emphatics (so that the reader knows exactly what we are referring to and may compare and contrast with the ejectives) before then summarising the main acoustic characteristics. This will help us to identify the phonological representations of 'emphatics'.

1.1 Ejectives

An ejective is a segment made with glottalic egressive airstream mechanism. European languages in general are normally said not to have ejectives, and certainly it seems like an 'exotic' sound for a European monoglot; however, there are instances of glottalic egressive stops in English. For instance, in many varieties of British English it would not be considered pathological¹ for the word 'mistake' to be produced utterance-finally with a final glottalic egressive *kʰ*² and Newcastle / Geordie English is unmistakably characterised by oral stops which co-occur with glottal stops (although the oral stop appears to be unreleased, so really they are glottal stops with a secondary supralaryngeal gesture that has a comparatively small acoustic role).³ Nevertheless, while in (certain varieties of) English they are a phonetic possibility, they are not phonologically contrastive.

Although to a European an ejective may seem exotic (or even, as Elliott's (1897) Nabeche dictionary says, "totally indescribable and impossible for a European to acquire"⁴), they are estimated by Henton et al (1992) to be the fourth most common type of stop cross-linguistically (the first three are voiceless unaspirated, voiced and voiceless aspirated, respectively), occurring in up to one fifth of the world's languages (Maddieson (1984) has "about 18%", Catford (1992) has "about 20%").

It is also notable that the Glottalic Hypothesis of Proto-Indo-European proposes that it had a series of 'glottalic' sounds commonly thought to have been ejectives, although most Indo-European languages have lost the glottalic series.⁵ The relevance of this will be seen presently in our discussion of the ejective Proto-Afrasian 'emphatic' and its reflex in Ethiopic languages (ejective) compared with the cognate in other Semitic languages (emphatic as in Arabic or non-aspirated as in some varieties of Neo-Aramaic).

1.1.1 Realisation of ejectives

The most common type of ejective is a stop, although there are ejective fricatives. We shall discuss first the production of the former, before moving on to a discussion of fricatives.

¹ As Ladefoged (1983: 351) puts it: "What is a pathological voice quality in one language may be phonologically contrastive in another...one person's voice disorder is another person's phoneme." The segment is clearly ejective, although only the velar constriction is released, not the glottal. Thus, it only occurs in utterance-final position.

² This would explain why, for instance, it is not easy to audibly differentiate Geordie 'Betty' from 'Becky' when heard on the radio or telephone (or indeed, the *Big Brother* voiceover!).

³ Cited in Doks (1923: 707-7), quoted here from Fallon (2002: 4).

⁴ Cf. Fallon (2002: 12-14), and references therein.

1.1.1.1 Stops

As previously noted, an ejective is characterised by two (normally) co-occurring constrictions, the first at the larynx (more specifically, the glottis) and the second at some point of the supralaryngeal tract. The glottal closure ensures that only the air trapped in the chamber between the larynx and the supralaryngeal mechanism (as to generate the sound, hence the designation 'glottalic airstream mechanism' is opposed to the pulmonic airstream mechanism which generates a 'plain' stop, so called because the airstream is generated by the lungs with no impediment to the flow caused by constriction beneath the main supralaryngeal gesture). The glottalic airstream is initiated by the abrupt upward movement of the entire larynx,⁶ compressing the air trapped between the glottis and the supralaryngeal constriction locus, and giving the effect of a 'piston'. This causes the characteristic 'popping' sound, since the release of the supralaryngeal constriction causes the air to rush outwards (i.e. egressively) rather quickly, in order to rebalance the air pressure behind the oral constriction with the ambient pressure (like the way in which a weather front between areas of differing pressure, shown as isobars, causes windy weather).⁸

Here, some comments would be in order concerning phonation and VOT. Firstly, the definition of ejective VOT, according to Catford (1983: 345), is the time-lag between the oral release and the onset of glottal vibrations. There is some cross-linguistic variation in glottal and oral release timing, since, as Kingston (1985a: 16-17) puts it: "the glottal closure may be released together with or soon after the oral one or it may be significantly delayed...Corresponding to this difference...is an impression that ejectives with simultaneous release of glottal and oral closures are less forceful than those where the glottal release is delayed." Fallon (2002: 271) details possible VOT lag lengths, the shortest reported VOT of any ejective apparently being 10 ms, in Abkhaz (Catford 1983), and the longest, in Bzdukah, 114 ms (Catford 1992).

Regarding the 'less forceful' ejective release mentioned above, it is to be questioned whether these are really ejectives at all. For instance, (in some positions) in some languages (e.g. Hausa and Zulu), where an ejective is realised with simultaneous oral release and onset of voicing (a VOT of 0 ms), in terms of the voicing parameter the (weak) ejective has the acoustic characteristics of a 'plain' voiceless stop and, in Fallon's (2002: 271) words, may have "such weak ejection that merger with the voiced"

⁶ Ladefoged (1982: 120, 1993: 130) notes a rapid upward displacement of the larynx by 'about one cm' in his observations of Hausa ejectives.

⁷ The compression of air causes a rise in air pressure between the two constrictions of about two times that caused by the pulmonic mechanism (Ladefoged & Maddieson, 1996: 78).

⁸ This can be contrasted with implosives, which employ glottalic *ingressive* airstream, i.e. the larynx (with vibrating vocal folds) moves downwards, enlarging the pharyngeal chamber and thus reducing oral pressure.

⁹ Fallon (2002: 271) notes 0 ms VOT as one acoustic characteristic of a voiced stop. Therefore, what Fallon calls 'voiced' must be interpreted informally and is, strictly speaking, 'plain' voiceless (as opposed to aspirated voiceless and fully voiced stops), since we assume that the interaction of voicing and aspiration yields a possible four-way laryngeal opposition in plosives cross-linguistically, i.e. voiceless aspirated, 'plain' voiceless, fully voiced, voiced aspirated ('breathy'). This is in contrast to the traditional voiceless-voiceless opposition, which implies the possibility of only a two-way laryngeal opposition in plosives cross-linguistically. In terms of VOT, we define 'voiceless aspirated' as having a significant VOT lag, 'plain voiceless' as having approximately simultaneous closure release and voicing onset (i.e. VOT value 0), 'voiced' as having significant pre-release onset of voicing, or VOT lead (i.e. a negative VOT value), and voiced aspirated as having both significant pre-release voicing onset and a period of post-release (voiced) aspiration (i.e. 'murmured' aspiration).

stops becomes a distinct phonetic possibility". Therefore, ejectives, when robust, have significant VOT lag, whereas they may in some cases be 'weak', having no VOT lag, and thus almost merging with 'plain' voiceless stops, which I treat as a case of lenition. Fallon (2002: 275) suggests that "the acoustic similarity between ejectives and voiced stops suggests a perceptual basis for the change of ejective to voiced", although bearing in mind that Fallon calls 'voiced' here is actually 'plain' voiceless. I suggest that this 'change' is due to the lenition process where an ejective simply loses its glottalic characteristic, thus 'reducing' to a mere 'plain' voiceless plosive (deglottalisation). This will be relevant in later discussions in two respects: firstly, it will be proposed that ejectives are primarily glottals, with the oral stricture being in some way secondary; secondly, the 'reduction' of ejectives to either 'plain' voiceless obstruents or glottal stops will be likened to the 'reduction' of (Arabic-style) emphatics to either non-emphatic obstruents or pharyngeals.

As regards the issue of phonation, it is often said that ejectives are voiceless and that voiced ejectives are not physically possible; however, examples have of course then been cited of voiced ejectives. From the above description of the mechanisms involved in the production of ejectives, it will have been noted that the closure of the glottis is a prerequisite. In order to produce a voiced sound, the glottis must vibrate, the pulmonic initiation of air flowing through the glottis, creating regular (periodic) fluctuations in pressure. The air pressure is thus higher before the glottis. However, ejective release (the popping sound) is caused by air compression above the glottis, caused by the upward movement of the larynx while the glottis is closed so that trapped air cannot escape downwards. Therefore, an ejective cannot be truly voiced. It is, however, possible to pre-voice the stop, although the voicing must cease during the closure phase; alternatively, the 'ejective' could be a sequence of voiced stop closely followed by (necessarily voiceless) *ʔ*, and thus not strictly an ejective. In the discussion of fricatives below this point will be elaborated on.

1.1.1.2 Fricatives

Bennett (1998: 9) notes that a fricative ejective is "often heard as an affricate". This is presumably due to two factors, namely, the glottal stricture and the oral stricture.

Firstly, glottal closure prevents the continuous flow of air necessary for friction, since a fricative is produced by partial oral obstruction causing a build-up of pressure behind the constriction, due to the continuing flow of pulmonic air. The characteristic friction is caused by the flowing air being forced through the narrow gap (the wider the gap the slower the flow and the 'weaker' the perception of friction). Glottal closure, however, cuts off the airflow. This would therefore be perceived auditorily as a stop (acoustically, an abrupt sustained decrease in overall amplitude, seen as a spectral 'edge'). Since the segment would then reproduce the acoustic characteristics of both a fricative and a stop, this would be equated with perhaps the only other *L1*¹⁰ segment to have such characteristics, i.e. an affricate.¹¹ In other words, the mapping is skewed, but not arbitrarily.

¹⁰ Bennett is presumably referring to *L2* speakers perceiving ejective fricatives as affricates

¹¹ The sequence of events within the one segment, however, is reversed, i.e. in the affricate, the stop portion precedes the friction, and vice versa in the ejective fricative.

Secondly, the lack of complete stricture characteristic of fricatives allows the air to escape constantly through the oral obstruction, thus preventing the build-up of enough pressure to give the popping effect characteristic of ejectives. There are therefore four options available: (1) to allow only brief glottal closure towards the end of the fricative, which would effectively end the fricative by cutting off the requisite airflow (i.e. a fricative ended by a glottal); (2) to close the glottis first and then to release this glottal closure into a fricative (i.e. *ʔ* (or *ø*) followed by a fricative); (3) to form an oral closure simultaneously with the glottal closure (thus maximising the perception of the stop), with the oral closure being released into a fricative (thus also maintaining the fricated characteristic), therefore an ejective affricate; (4) to raise the larynx during fricative and then close the glottis (as option 1), which also acoustically re-creates both oral pressure and ejective characteristics, but with the added bonus of the higher oral pressure ensuring a slightly more 'forced'-sounding friction (i.e. an ejective fricative).

Option (1) would not allow the build-up of sufficient pressure to create the strong release, or popping sound, often associated with ejectives, thus this option would appear to be the first stage of weakening, where the fricative quality is maintained at the expense of the typical ejective quality. Presumably it would then be easy for the segment to lenite (by de-glottalising) to a 'plain' fricative.

With option (2), the glottal closure is then hard to perceive, since it sounds simply like a 'gap' before the onset of the fricative. It is also not strictly an ejective, since in order to create the characteristic ejective release the most salient target, oral pressure, must be raised so that the obstruct is released with greater force (i.e. the rush of air outwards caused by pressure within the oral chamber greater than the ambient pressure; the greater the difference between the two, the faster the outward flow of air). In the case of a fricative, since there is no complete oral stricture, there can be no *significant*¹² pressure increase, as detailed above.

Option (3), on the other hand, maintains the ejective (glottal) quality, but compromises a little on the fricative quality. Although in terms of perception it may appear to be a form of fortition, I would argue that phonologically it is not fortition as such, but the complexification (since the affricate is a contour segment), which maximises the salience of the 'ejective' quality while also maintaining some degree of friction. As a contour segment, this affricated ejective would perhaps be less prone to lenition, although we would predict that any lenition would take the form of de-buccalisation (loss of oral place, i.e. reduction to a glottal stop), due to coalescence (merging of the two parts of the contour – as will be demonstrated in Section 3).

With option (4), the ejective fricative has not such a distinctive release as an ejective stop, since the build-up of oral pressure cannot be maintained as effectively due to the incomplete oral closure. The 'ejective' salience of the ejective fricative in comparison with the 'plain' fricative is thus more marginal. In order to maximise the salience of the ejective-'plain' contrast, option (3) may be more viable.

To sum up and move on, we will propose in Section 3 that option (1), the fricative-closing glottal, is not a true ejective but a contour segment, that option (2), the fricativised glottal, is also a contour segment, that option (3), the glottalised affricate, as

¹² 'Significant' is to be understood as relative to the degree of raised pressure characteristic of ejectives.

discussed, is a contour segment and also a true ejective, and that option (4), the glottalised fricative, is phonologically the closest thing to a true ejective, although it is a contour segment, since the stop characteristic is shared by both constituents of the contour.

As a closing note, to give an example of fricative-ejective resolution in accord with one of the options outlined above, we note from Bennett (1998: 10) that in Jibbali there is a "glottalized s ($s^?$)" corresponding to the Amharic ejective. He defines 'glottalized' as a consonant followed by a glottal stop, i.e. the glottis is not closed or raised during the articulation of the oral portion of the segment, and notes that it is thus possible to have a truly voiced 'glottalized' obstruent. This segment is clearly the result of the adoption of the first of the four options outlined above, and is not a true ejective in either phonetic terms (lacking the characteristic popping caused by build-up of air pressure), or, as proposed later, in phonological terms.

Now that we have given a description of the physical production of ejectives, we will look at auditory and acoustic cues, since that is what will be relevant in relation to our overall aim of comparing and contrasting the varying realisations of Semitic emphatics in order to arrive at the phonological definition(s) of the notion of an 'emphatic' segment.

1.1.2 Auditory and acoustic characteristics

There are several possible acoustic cues for ejectives. However, as may have been inferred from the above discussions, this is not homogenous across languages, or even within languages. For instance, Monaka (2001: 74) cites Lindau's (1984) investigation of Hausa and Navaho ejectives: "Hausa ejectives showed regular voicing at vowel onset whereas Navaho ejectives showed creaky voice after the release of the stop which continued into at least the first portion of the vowel." Monaka rightly concludes (2001: 74) that "These observations make the determination of cues for ejective stops in the languages of the world rather difficult, the different experimental techniques used by the researchers also being a contributing factor." In Section 3 of this paper, we will also attempt to account for these apparent inconsistencies.

Therefore, here we shall attempt a brief overview of the most salient cues, as this will have a bearing on our discussion later of the phonological representation of ejectives.

Firstly, we noted above that a 'weak' ejective may have little or no VOT lag. There also appears to be a direct correlation between VOT length and oral pressure. As noted earlier, and summarised neatly in Fallon (2002: 273), "laryngeal raising plays a major role in influencing changes in oral pressure (P_o) and therefore, the intensity of the release burst which creates the distinct popping characteristic of ejectives." For instance, Tigrinya ejectives, as shown by Fre Woldu's (1985, 1988) oral pressure measurements, have roughly twice the pressure of voiceless aspirated stops, and 3-4 times that of voiced stops. Fallon (2002: 274-5) further elaborates to clarify the interaction between larynx-raising and VOT: "Some of the most salient acoustic characteristics of ejectives are due to the increase of oral pressure, which largely derives from the raising of the larynx. When the compression is less, the burst is less intense, and the VOT is generally shorter." In other words, raised larynx, hence oral pressure, is associated with longer VOT, whereas with less oral pressure and shorter VOT, ejectives become perceptually closer to 'plain' voiceless obstruents.

In some languages (such as Navaho),¹³ creaky voice appears also to be a factor involved in the production of ejectives. Creaky voice (laryngealisation) is caused by the arytenoid cartilages being held tightly together so that the vocal folds can vibrate only at the other end.¹⁴ Since they thus vibrate more slowly, F0 will be shown to be comparatively low. Laryngeal activity can be measured by laryngography or in (electro)glottography, as performed by Monaka (2001).¹⁵ In this way, a cue for ejectives may be manifest in low measurements of fundamental frequency or in irregular vibration or alternating high and low amplitude of Lx traces at the onset of the following vowel.¹⁶ However, Monaka (2001: 134) notes that other researchers have observed that "irregular phonation at vowel onset may not be a reliable cue for ejectives", as we noted earlier with Hausa having regular vowel-onset voicing, but Navaho having creaky voice. It is therefore a factor in some language systems but not others.

A final cue to be mentioned here is the high burst amplitude (of the release) typical of ejectives in languages like Tigrinya (Fre Woldu 1985) and Xhosa (Jessen 2002). This can be evaluated by measuring the rate of airflow at the lips. Since high burst amplitude is a direct result of significantly increased oral pressure, it will therefore be treated as integral to the cue.

Thus, the cues to be taken as typical for ejectives are: increased oral pressure along with a significant VOT lag. We will see that this is relevant in comparison with Arabic emphatics.

1.2 Emphatics

Arabic has often been described as a 'harsh' or 'guttural' language, well known for having sounds considered difficult for non-native speakers to articulate. In particular, it has a set of consonants known as 'emphatic' which are usually said to involve secondary pharyngealisation and/or uvularisation. It is interesting to note that ejectives are also perceived in auditory terms as 'harsh', any more than are pharyngeals; that emphatic segments are not particular to Arabic, any more than are pharyngeals; and although Semitic languages in general are well known for having both these types of segments, they are not even particular only to the Semitic language family). Bessell (1992: 23) looks at the typology of "pharyngealized" (i.e. emphatic) consonants, summarising that they "occur in 7/693 (1%) languages in Ruhlen (1975). Four of these are Arabic, two are Caucasian and one is a Berber language." This may not be a truly representative sample, since it is not always clear exactly what is meant by the term 'pharyngealisation', either articulatorily or acoustically. In this way, what may be

¹³ Cf. Monaka (2001: 74).

¹⁴ Ladefoged (1993: 141).

¹⁵ Hayward (2000: 230-31) notes that this method monitors changing patterns of vocal fold contact, by placing "electrodes...on the neck at either side of the subject's thyroid cartilage. A weak current is then passed between them...If the vocal folds are vibrating, current flow will alternately increase and decrease as the extent of contact between the folds increases and decreases...the output waveform [Lx] shows a series of upward and downward movements, with each cycle corresponding to a cycle of vocal fold vibration." Contrast this with the Gx signal, of which Lx is a high pass filtered version, which records conductance change as the larynx is displaced, rather than the conductance change across the vocal folds recorded by the Lx signal.

¹⁶ Monaka (2001: 74).

exactly the same phenomenon may be termed something else and thus not included. Moreover, 'pharyngealisation' may interact with other phenomena (such as e.g. retroflexion) and thus be included elsewhere in Ruhnken's categorisation. Nevertheless, this would indicate at least that the emphatic phenomenon is typologically less common than the ejective phenomenon. Why this should be so is elaborated on in Section 3.

1.2.1 Realisation of emphatics

Classical Arabic emphatics are usually cited as *s t d z* or *s t d d'*,¹⁷ although the dialects have widely differing inventories. However, most dialects include at least three of these four,¹⁸ along with, most commonly, *l r m p*. The coronal emphatics are traditionally seen as 'primary', or 'phonemic', whereas any other emphatic segments are often described as 'secondary' or 'non-phonemic'.¹⁹

Coronal emphatics are produced with a coronal restriction, along with a secondary pharyngeal approximation. Impressionistically, they sound rather heavy and dull in comparison with 'plain' coronals.

The pharyngeal approximation in the articulation of emphatics involves moving the tongue dorsum back towards the upper pharynx simultaneously with the primary articulation (e.g. a coronal gesture). Ali & Danišoff (1972) observe that the upper pharyngeal wall is not actively involved in the articulation of emphatics, and al-Ani & el-Dalce (1984) also do not show movement of the pharyngeal wall in their x-ray tracings, only of the tongue. Ghazeli's (1977) films show that emphatics have greatest pharyngeal constriction at the upper pharynx, across from the second vertebrae. As already noted, in Arabic it is not only the coronals which may be emphatic, although the coronal emphatics are considered to be 'primary' emphatics, which may cause the spreading of the emphatic quality to other segments, whereas the 'secondary' emphatics (e.g. labials) are usually seen to have become emphatic under the influence of a primary (trigering) emphatic. It is notable that the uvulars appear to be velar emphatics, and this is how at least Kurmanji Kurdish treats them,²⁰ as well as on the evidence of Semitic languages with ejectives rather than emphatics, in which the reflex of *q* appears to be *k*, i.e. the (plain-ejective) opposition *k-k'* is equivalent to the (plain-emphatic) opposition *k-q*.

1.2.2 Acoustic characteristics

Ladefoged (1993) describes one type of secondary articulation as the superimposition of a narrowing of the pharynx, arguing that as cardinal vowel 5 – [a] – is the most back possible vowel without producing pharyngeal friction, it is the imposition of this vowel quality as a secondary articulation which causes what he calls pharyngealisation.²¹ This

¹⁷ There has been a certain amount of debate over whether Classical Arabic *ṣ* was really *ṣ* or *ṣ'*, or even some kind of lateral. Cf. Bakalla (1981), Magee (1950) and references therein.

¹⁸ *q* and *ṣ* have merged in many dialects.

¹⁹ Some researchers have argued that *r* is a primary emphatic, and there have also been debates on the status of *l*. Cf. Younes (1994), McCarthy (1994), Ferguson (1956 [1997]), Card (1983), among others.

²⁰ Kurmanji Kurdish has a process of 'pharyngeal dissimilation' whereby a phonological word may have only one emphatic /uvular/ pharyngeal segment. In Arabic loanwords containing more than one of this group of segments, one of the segments will be dissimilated, such that e.g. *q* becomes *k*, as in Iraqi Arabic *ḥabāq* → Kurmanji *ḥabek* ('level, floor'). Cf. Kahn (1978a & b), Hoberman (1989).

²¹ Note that as a purely articulatory label, which is not in my opinion directly relevant to the mental representation of phonological primitives (in the sense that representations are mapped onto articulatory

is the view to be taken here, that is, 'pharyngeal' = a (or A in element terms, as we will see presently).²²

In acoustic terms, it has been well-documented that emphatics exhibit significantly lowered second formant and raised first formant transitions.²³ It is also noted that the pharyngeal segments *h* and *ʕ* have high F1 and low F2 transitions.²⁴ Notably, the mid-spectral convergence of the first and second formants is exactly the profile of the vowel [a]. This should be contrasted with the vowel that has the lowest F2, which is that approximating the back (non-low) [u], since this vowel also has a very low first formant.

Another strong acoustic cue to the presence of an emphatic may be the quality of the release burst. This is particularly evident in a study performed by Fre Woldu (1986) of the (production and) perception of ejectives and emphatics by native Tigrinya and native Sudanese Arabic speakers. The study concludes that there is a 'strong auditory similarity between Tigrinya ejective *t* and Arabic emphatic *t'*'.²⁵ The following extracts of the report are worth attention:

The biomechanical and aerodynamic processes involved in the production of ejective /t/...are totally different from those of emphatic t'. The main perceptual cues of emphatic stops are the release burst and the formant transitions. These two essential cues function reciprocally even when they are quite far removed from each other in time...[Native Tigrinya speakers] are perceptually lead [sic] in their perception of emphatics by the quality of the release, rather than the perceptually evident formant transitions. One possible definition as a first step in describing the auditory similarity between the two release bursts is the abruptness of the release bursts and its rapid decay...To my ear ejective releases are stronger in intensity and of much higher pitch...there is psychologically useful information in the release bursts that makes native and non-native listeners experience the two consonant types as perceptually the same...the main acoustic feature that differentiates /t/ and /t'/ is therefore the approximation of formants due to pharyngealization in /t/. It also follows that if pharyngealization could be added to ejective /t/ its perceptual similarity to /t'/ would be total...the change from ejective to emphatic or vice versa would not require adaptation to a sound completely different.²⁶

targets in an attempt to reproduce, or mimic, the acoustic characteristics of given primitives), *uvularisation* may be a more accurate term, since emphatics have the upper pharyngeal approximation characteristic of uvulars (supported by acoustic evidence), rather than the lower pharyngeal approximation and inward displacement of the pharyngeal wall (also supported by acoustic evidence) characteristic of true pharyngeals. Cf. Ali & Danišoff (1972), al-Ani & el-Dalce (1984), Ghazeli (1977).

²² Following on from the previous footnote, it should be reiterated here, however, that while the characteristics of [a] may be manifested fully as the primary phonological prime of a segment, in other words in a pharyngeal segment, when not primary (i.e. not head of the expression), so in phonetic terms a secondary articulation, [a] does not manifest its full characteristics. Therefore, it is not contradictory to claim that [a] has primarily pharyngeal characteristics which are also manifest in uvular(ised) segments.

²³ The phonological evidence supports this view (cf. Bellem 2001).

²⁴ Cf. al-Ani & el-Dalce (1984), Kuryngawa et al. (1988), Herzallah (1990), Zawaydeh (1998). Also Younes (1993) reports F2 drop in vowels affected by neighbouring emphatics, but does not mention the first formant. However, his spectrograms show higher F1 transitions in an emphatic environment, for example in comparing the minimal pair [laħlaħ] and [laħlaħ'] (pp. 143–144).

²⁵ McCarthy (1994), Ghazeli (1977), Butcher & Ahmad (1987).

²⁶ Fre Woldu (1986: 136); original transcription retained.

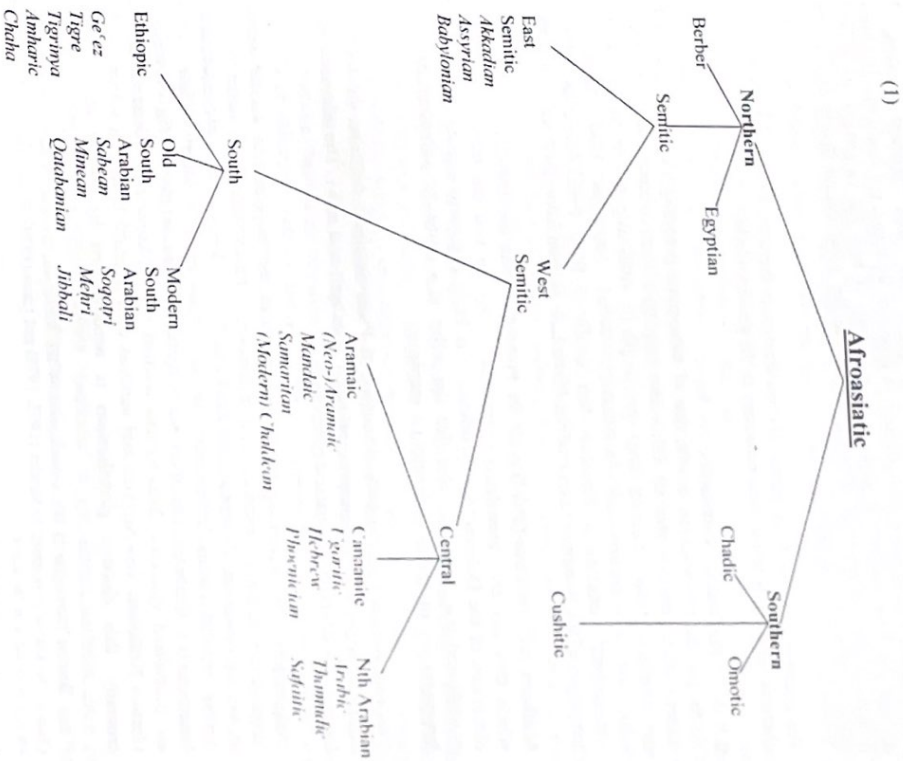
Thus, where a Tigrinya speaker does not have *a*-quality in consonants (which are not purely pharyngeal), she may have to look for other perceptual cues in order to a) interpret, and b) reproduce the Arabic emphatic, relevant to the Tigrinya phonological system, and therefore produced as an ejective, since the most salient cue here appears to be the quality of the release burst effected by the raised oral pressure, which causes rapidity of airflow in the burst release. This is therefore something that will be taken into account in our theoretical hypothesis.

In section 2, we will move on to a diachronic overview of the genesis of emphatics, looking firstly at the Semitic language family, and then at the Proto-Semitic consonantal inventory, before finally looking at the realisation of Proto-Semitic *emphatics in languages of the Semitic family.

2 Historical background: Proto-Semitic

The Semitic languages comprise one sub-branch of the Northern branch of the Afroasiatic (also known as Afrasian and, more traditionally, as Hamito-Semitic) language family. Most of the Afroasiatic languages show three series of stops corresponding to the Semitic voiced, voiceless and emphatic obstruents, and most of these languages have, or show evidence of having had, postvelars (i.e. uvulars and / or pharyngeals).²⁷

It has been widely proposed that the Afroasiatic language family is made up as per the following model (individual languages in *italics*):²⁸



This classification has not been universally accepted, however, since other classifications have been argued for; as an example, there are those who argue that West Semitic is divided between South and Northwest Semitic languages, the former comprising Arabic, Ethiopic, Old South Arabian and Modern South Arabian, with the latter comprising Aramaic and Canaanitic,²⁹ although this was perhaps a somewhat older classification. Nevertheless, the Semitic branch is the least disputed and most well documented. Bennett (1998: 22) also notes that the Omotic branch is particularly

²⁷ Bennett (1998), original source: Greenberg (1950).

²⁸ Bennett (1998).

²⁹ Cf. Bennett (1998) for further elaboration on the topic along with original sources.

disputed, and that some scholars still prefer the label 'Western Cushitic'.³⁰ Furthermore, a geographic classification is proposed by some, but again that has been disregarded here because it gives a false picture of how the languages are related morpho-phonologically, focusing instead on the geographical distribution of the speakers of those languages.

The question as to the finer details of classification is therefore left open, since we have given as much elaboration as is necessary to the present work.

2.1 Proto-Semitic 'emphatics'

To tie the Semitic situation in with that of Afroasiatic generally, i.e. to give a slightly wider context, we note that all Afroasiatic languages seem to have some variation on the 'emphatic' theme: Semitic languages, as per the following discussion, have a wide range of (realisations of) 'emphatics', Berber languages have Arabic-style ('uvularised') emphatics, Egyptian had uvular *q* from Proto-Afroasiatic *k*,³¹ the languages of the Southern branch of the Afroasiatic phylum have ejectives.

Miliarev and Stolbova (1987) posit for Proto-Afroasiatic the consonants *p t ʕ ʔ k q*, which they say are "glottalised ('emphatic')". As we will see from the following discussion of the Dolgopolsky hypothesis, it is likely that these segments were indeed glottalised (i.e. ejectives), and that the reflex in a particular subset of Afroasiatic languages (i.e. in subsets of Semitic) is emphatic.

The reconstructed consonantal inventory of Proto-Semitic³² contains the following segments relevant for our purposes: *θ l s ʕ ʔ q*, as well as *h* and *ʕ*. The relevance of the latter three will become apparent presently.

Dolgopolsky (1977) investigates the realisation of the emphatics in ancient Semitic languages in order to postulate their realisation in Proto-Semitic. He notes the three different realisations of emphatics in the living Semitic languages: Firstly, emphatics in Arabic are "uvularised". Secondly, in the Ethiopian and Modern South Arabian languages (i.e. the languages of the South branch of West Semitic, cf. fig. 1) emphatics are glottalised ejectives. This is true also of some Neo-Aramaic dialects (such as Urmian Nestorian/Neo-Assyrian and varieties of Kurdistan Jewish Neo-Aramaic) but, crucially, this ejective glottalisation is accompanied by tongue retraction and

³⁰ For detailed discussion of the classification of the Afroasiatic phylum, in particular the status of Omotic, the reader is referred to Bender (1975, 1976) and Ehret (1979), who, as far as I'm aware, stand on opposite sides of the fence.

³¹ Uvular *q* is, phonologically speaking, an 'emphatic' (i.e. retracted) *k*. The variation between *q* and *k* is common, for instance Arabic cognates in Ethiopic or Modern South Arabian languages, which show a systematic realisation of cognate uvularised emphatics as ejectives.

³² Bennett (1998).
³³ This is a "voiced lateral fricative" (Bennet, 1998). The previous discussion, however, noted the articulatory incompatibility of full voicing and truly contrastive glottalisation, and of the problems inherent in the realisation of ejective fricatives. I suggest therefore that this segment would have been realised either as a palatal / coronal ejective with a degree of creaky voice on release (for reasons which will become apparent in the next section), or, more likely, as a laterally affricated ejective coronal / palatal (for reasons which should be clear from the previous section). What may have induced the patterning of this segment with voiced obstruents (rather than voiceless, as with the other ejectives) is the (possibly retracted) lateral nature of the ejective release emphasising the onset of voicing, or rather, that laterals are sonorants, which by definition have spontaneous voicing, therefore the characteristics of the post-release lateral are maximally salient.

'recession' of either the adjacent vowels or of the whole word. Thirdly, Dolgopolsky suggests that in some other Neo-Aramaic dialects (e.g. Tur 'Abdin) the opposition of emphatic and non-emphatic is actualised as an opposition of non-aspirated versus aspirated, respectively. This paper seeks to account for this variation systematically, and what follows below constitutes the basis for the phonological analysis proposed in Section 3 of this paper.

Dolgopolsky hypothesises that Proto-Semitic consonants had a three-way distinction between voiced/voiceless/emphatic; in other words, emphatics did not have a voiced-voiceless contrast, which he notes is unlike the situation in modern-day Arabic and Berber.³⁴ He postulates that this would be due to the glottalisation of emphatics in Proto-Semitic, where the triadic opposition of consonants would be manifest articulatorily in an opposition of the three main positions of the glottis: open glottis/vibrating vocal cords (i.e. approximated glottis)/closed glottis. Thus, if the Proto-Semitic emphatics were actually glottalised, it would not have been possible to have a voiced-voiceless distinction. This hypothesis is the crux of the present study, and will be formalised in a later section. First, however, we will look at how Dolgopolsky arrived at this hypothesis, and we will argue against one of his points.

2.2 The genesis of 'emphatics'

In concluding that Proto-Semitic emphatics were ejectives, Dolgopolsky posits the transition of ancient glottalisation to Arabic uvularisation by investigating the Neo-Aramaic dialects, which he says represent most of the stages of the transition. Firstly, the glottal articulation causes the recession of the 'emphatic' consonant and not adjacent vowels.³⁵ The non-emphatic voiceless counterparts are aspirated and not uvularised (i.e. there is no recession).³⁶ In the second stage, glottalisation is weakened to semi-glottalisation, and the distinction between emphatic and non-emphatic is now perceived as primarily that of aspiration vs. recession.³⁷ The third stage sees the complete loss of glottalisation, and emphatics are now distinguished from non-emphatic voiceless consonants as non-aspirated from aspirated and as recessive, which also causes the recession of adjacent vowels, from non-recessive.³⁸ Finally, aspiration is then lost and the emphatics are distinguishable only by recession (i.e. uvularisation), which is, according to Dolgopolsky, what we see in Arabic.

Thus, we can see that what is called 'emphatic' is not always uniform since one language's *t* is not the same as another language's *t*, (one being 'uvularised' and one being 'glottalised').

³⁴ This is not the whole story, however, and we will see that this voicing distinction is still relevant, at least in modern-day Arabic, although not in quite the same way as in Proto-Semitic.

³⁵ There is no indication as to why this should happen.
³⁶ This is the situation we see in Urmian Nestorian Neo-Aramaic (Neo-Assyrian) (the Christians of Urmia, in north-west Iran, also known as Reziye, South Kurdistan) and in Kurdistan Jewish Neo-Aramaic (the doesn't specify, which part of Kurdistan, considering that the next stage is also exemplified by the Neo-Aramaic of Kurdish Jews).

³⁷ The stage found in the Neo-Aramaic of the Jews of Urmia, Salmas, Bakale and Gawar (Yüksekova) (all in Kurdistan, on either side of the Turkish-Iranian border, south of Armenia and north of Iraq).

³⁸ As in -Tur 'Abdin Neo-Aramaic (south east Anatolia).

However, in contrast to one point of Dolgopolsky's hypothesis is my suggestion (based on observation), which would actually back up his theory of the emphatic trajectory, that Arabic does indeed have a three-way voicing contrast in plosives. It seems that the non-emphatic plosives are, as in English, voiceless aspirated and 'plain' voiceless, whereas the emphatics are 'plain' voiceless and voiced.

It has been observed by other researchers that the Arabic emphatics may be cued perceptually by a drop in pitch (i.e. F_0 manipulation).³⁹ There is a strong correlation between pitch and phonation, in terms of articulation, acoustics and phonology, such that we see, for instance, depressor consonants in tone languages, where voiced consonants induce a following low tone, such as in Zulu, or the opposite, i.e. tonal contrasts effecting voice contrasts, such as in Jaben.⁴⁰ Moreover, we often see that the historical development of (vowel) tones (tonogenesis) relates to the loss of consonantal voicing contrasts, where the contrasting feature instead spreads into the vowels.⁴¹ Thus, if pitch drop cues the emphatic obstruents, we would expect this to be as a result of voicing. The situation is not quite so straightforward, however, since Arabic contrasts 'voiceless' emphatics with 'voiced' emphatics. The way in which this fits in with Dolgopolsky's hypothesis relates to the rather traditional designation 'voiced' and 'voiceless', which fails to take into account that many languages actually contrast stops for three or even four phonation types.⁴² Thus, in Nepali we see:⁴³

- (2)
- | | |
|--------------|--------------|
| p^h/d | 'throw away' |
| p/d | 'recur' |
| h/d | 'burn' |
| h^h/d^{h1} | 'forehead' |

In this way, especially bearing in mind the previous discussion of ejectives, where it became clear that languages contrast ejective with voiced and voiceless stops, as in Proto-Semitic, it would not be at all surprising to discover that a Semitic language like Arabic has a three-way voicing contrast. This may have been obscured by three factors: the traditional binary viewpoint of the 'voiced' / 'voiceless' opposition; the primary perception of Arabic emphatics as 'retracted', 'dull', 'flat', 'dark', etc (analyses thus focusing on this aspect to the exclusion of phonation); the fact that Arabic actually has a maximal *four*-way contrast in stops. The reason that Arabic seems to have a three-way voicing contrast, yet a four-way stop contrast is due to the interaction of both voicing and 'uvularisation', since in Arabic it seems that the emphatics are a series lower than the non-emphatic plosives, in terms of voicing. That is, the non-emphatic stop series is voiceless aspirated and 'plain' voiceless (e.g. /t^hl/, d^hl/) and the emphatic series is 'plain' voiceless and fully voiced (e.g. /tl/, d/d/). Therefore, it could be said that the perception of emphatics involves not just recession but a voicing contrast (cued

³⁹ Michael Ingleby (p.c.) referring to acoustic analyses that he performed on Arabic emphatics. He analysed emphatic harmony as the spreading of the element L .

⁴⁰ Cf. Yip (2002).

⁴¹ The correlation between the notions of pitch and voicing is formalised in the theoretical framework adopted in the next section, so that they are not two phenomena but one.

⁴² Phonation types such as creaky voice are sometimes employed in addition to the voicing and aspiration contrasts. For instance, Ladefoged (1983: 353) details vowel contrasts in the Thebet-Burman language Mpi, which has maximally 12 laryngeal variations, through the interaction of six tonal contrasts and a plain vs. laryngealised contrast.

⁴³ Ladefoged (1983).

⁴⁴ More strictly, b^h/d^h .

by aspiration in the 'voiceless' series / vs / and voicing in the 'voiced' series / vs /). To clarify the point, (3) shows an existing minimal triplet in Arabic, with an invented (but phonologically possible) fourth member of the set:

- (3)
- | | | | | | |
|----|---------------------|--------|------|----------------------|------------|
| a) | voiceless aspirate: | $ti:n$ | تِين | [t ^h i:n] | 'figs' |
| b) | 'plain' voiceless: | $ti:n$ | تين | [ti:n] | 'religion' |
| | | $ti:n$ | طين | [ti:n] | 'mud' |
| c) | fully voiced | $di:n$ | ضين | [di:n] | ∅ |

The table in (4) further clarifies this point, without the example data, but again using the coronal stops:

(4) **Inventory of coronal stops in Arabic**

Voicing status	Non-emphatic	Emphatic
Voiceless aspirated	t [t ^h]	
'plain' voiceless	d [t]	t [t]
Fully voiced		d [d]

Up to this point the discussions in this section have centred on plosives; however, the status of fricatives should also be made explicit here. The fricatives do not seem to involve the three-way opposition that characterises the stops, as is usually the case cross-linguistically.⁴⁴ Arabic fricatives may be one of four types: voiceless non-emphatic, voiced emphatic, voiceless emphatic, voiced emphatic. Thus, there is only a two-way voicing contrast in fricatives, with the emphatics being true counterparts (in terms of voicing) of the non-emphatics, unlike the stops, which could not be said to be true counterparts.

With regard to the latter point, it is noteworthy that in most analyses of Arabic emphatics, the emphatics are compared with their so-called 'plain' counterparts, but, as seen in (3) and (4) above, this means that what is actually being compared are pairs which not only contrast for emphatic status, but are also of a different voicing status i.e. 'plain' voiceless (emphatics) are compared with voiceless aspirated (non-emphatic) and fully voiced (emphatics) with 'plain' voiceless (non-emphatics). In real terms, and certainly in acoustic evaluations, it may be more revealing to compare pairs of a similar voicing status, or like with like, i.e. voiceless 'plain' non-emphatic /d/ with voiceless 'plain' emphatic /t/. This is what is made explicit in (4), that the true counterpart of

⁴⁴ One could argue that since 'aspiration' is spontaneous in fricatives, i.e. is an integral part of the notion 'fricative', it cannot therefore be contrastive. In order to produce the airflow necessary, the glottis must have some degree of aperture. Thus, they cannot contrast for aspiration, leaving only a two-way voicing contrast.

Arabic / is *d*, and that / and *d* have no strictly true counterpart since their voicing status is different.⁴⁶

The issue of formally testing the voicing status of Arabic stops will be addressed in future experiments relating to ongoing work.⁴⁷

3 The phonological status of 'emphatics'

This section of the paper sets out our proposals for a phonological analysis of the emphatic/ejective phenomenon, as a foundation for our ongoing investigation into the role of the pharynx in phonology. Here we will attempt to relate the notions of 'emphatic' and 'ejective' in the light of Dolgopolsky's hypothesis of the Proto-Semitic triadic stop opposition. We first summarise the theoretical background before moving on to the analyses themselves.

3.1 The elementary approach

Here, we present an overview of the theoretical framework which we will adopt to account for segmental representations that of elements. The reasons for the adoption of this framework are outlined in detail in Bellem (forthcoming), but take up too much space to be discussed in any detail here. In brief, however, we could note that feature-based analyses fail to account for the phenomena in hand on at least one of the following issues: firstly, the glottal-state options are ternary (not binary); secondly, weakening (lenition) phenomena involves loss of contrast, thus loss of salient information from the speech signal; thirdly, articulatory gestures are the target in the attempt to reproduce salient acoustic information, i.e. the acoustic signal is the neutral code between speaker and listener, thus, for instance, a ventriloquist may vary the normal targets, employing the speech apparatus in a non-standard way, but still reproduce enough of the salient information to be understood as communicating the same information; fourthly, consonantal laryngeal contrasts correlate with vocalic, and we must therefore assume that this is encoded in the phonology.

In this section of the paper, then, we outline the theory and move straight into a discussion of the elements themselves.

3.1.1 Background

In the theory advanced in Government Phonology, the melodic primes which make up phonological segments are formally called elements, defined by Harris (1994: 138) as "cognitive categories which serve the grammatical function of coding lexical contrasts", combinable into phonological 'expressions', which are realised as segments.

Elements are not abstract categories for which a segment is specified, but independent units in themselves which are either absent or present from a segment, in the same way

⁴⁶ One notable exception to this is Fre Woldu's (1986) study, discussed in Section 1.2.2, of the perception and production of Arabic emphatics and Tigrinya ejectives. The experiments focus on the coronal series and compare emphatic/non-emphatic 'pairs' of the same voicing status, i.e. Sudanese Colloquial Arabic (SCA) / is compared with Tigrinya ejective /, which is also a 'plain' voiceless coronal stop, and thus there is no voicing contrast between the two. As an aside, I suggest that it is this that goes some way towards conditioning the perception of Tigrinya / as SCA /, since both SCA and Tigrinya have *d* (IPA /, i.e. 'plain' voiceless non-emphatic/ejective), thus this would be perceived accurately. Perceptually, then, in relating one inventory to the other, / and / would be the closest stops.

⁴⁷ The reader is reminded that this is a working paper!

that the colour green is made up of blue and yellow. If we remove all traces of the primary colour blue from the compound colour green, we are left with the primary colour yellow. Elements can be seen as primary colours which exist in their own right (as a simplex segment), but which can mix with other primary colours to form compounds (a complex segment). Thus, the breaking-down of phonological segments into elements, rather than viewing them as unordered bundles of feature specifications, encodes the characteristic of privativity, as we see in real-world objects, rather than equipollent oppositions, which do not encode an atomic world-view but an abstract notion of defining things to some extent by what they are not.

Implicit here, moreover, is the prediction that the primitives have independent phonetic interpretability. Harris (1990, 1994) and Harris & Lindsey (1995) provide much cross-linguistic evidence for each of the elements in processes of lenition, where historical 'weakening', such as vocalisation, debuccalisation and spirantisation is accounted for as the loss of salient acoustic information, thus an element, each element loss representing a stage of the lenition trajectory. The last stage of lenition, before deletion, therefore represents the expression of the last remaining element of the original compound. In this way, it is possible to pin down two things: the elements present in various compound expressions; the independent phonetic interpretation of the various elements. This will be demonstrated briefly in the next section.

Feature theories tend to view primitives as abstract articulatory categories which are then mapped onto phonetic categories at a 'surface level'. Elements, however, having independent phonetic interpretation at every stage of the derivation, are grounded in the acoustic signal and in this way are not entirely abstract codes, but rather, as already noted, 'cognitive categories which serve the grammatical function of coding lexical contrasts'.⁴⁸ Since the code which is neutral to both speaker and hearer is the acoustic signal, articulation is merely the attempt to reproduce that signal using the available tools. Thus, the elements directly encode particular speech signal patterns, which are then mapped onto articulatory categories.

3.1.2 The elements and their salient characteristics

To begin this section we should firstly note how exactly elements combine to form compounds. In a phonological expression, one element takes the role of head, while other elements of the compound assume operator (dependent) status. Within any phonological domain, any non-head must be licensed by the head of that domain in order to have expression.

This is not an abstract notion or an entirely arbitrary stipulation, but is the theoretical encoding of two main notions. Firstly, compound expressions have complex acoustic signals. However, the acoustic signal of a particular sound may have a signal with one maximally (or more) salient characteristic relating to one specific element, i.e. the head. For instance, the segment ϵ , a compound of the elements A and I, is closer to A than is e , which is also a compound of these two elements. Thus, in ϵ , the head is A (the expression is represented notationally as $[\Delta A I]$), whereas in e the head is I (represented notationally as $[A \Delta I]$). An element is said to impart its salient characteristic fully to an

⁴⁸ Harris (1994: 138)

expression when head.⁴⁹ Secondly, the head of an expression may be deduced through its phonological behaviour.⁵⁰

Kaye, Lowenstamm and Vergnaud⁵¹ (1985, 1990) and Harris (1990) originally proposed an inventory of ten elements, including the ATR element *t*. One of the major developments in standard GP has been a reduction in the number of elements. It has been proposed⁵² that all elements should be present in vocalic and consonantal expressions alike, and for this, and other, reasons, the ATR element *t* was made redundant.⁵³ There have been attempts to limit the elements minimally to an inventory of five,⁵⁴ but commonly in current practice to six, although it is still a somewhat controversial area in element-based frameworks, and different researchers have proposed more (or different) elements or eliminated others. Here, however, we will be mostly following Harris (1994) and Harris & Lindsey (1995), with two essential differences.

Firstly, as will be discussed presently, the framework I adopt here does not consider that there is a phonological *h* element. Secondly, this framework omits the element *@*, neutrality with the element *l*). In vowels, this element represented the centralising effect of laxness, and in consonants it represented velarity. Acoustically, the element was said to have a ‘schwa-like auditory effect’.⁵⁵ It is seen as having no active resonance properties, and thus fails to ‘contribute anything to an expression in which it occurs as a dependent’.⁵⁶ Moreover, it is assumed that *@* is latently present ‘as a dependent in all vocalic expressions and has the potential to become audible only when other elements in a compound are suppressed for some reason’.⁵⁷ In other words, it can be thought of as an acoustic ‘base-line on which the well-defined sound patterns associated with A, I and U are superimposed’.⁵⁸ However, in much the same way as sonorants are said to have spontaneous rather than active, contrastable voicing, which is therefore not phonologically represented, it could be said that all sounds must have an ‘acoustic base-line’ on which the elements superimpose their own salient characteristics, and thus it is not phonologically represented since it is not contrastable, or an active property. We could therefore think of the salient neutral characteristic actually as the manifestation of nothing, so that what represents no acoustic resonance properties is no element. Somewhat rather counter-intuitively, in the ‘*@* as neutral’ view this ‘lack of’ is equated with the positive presence of an element (lack of maximally salient characteristic = the element *@*). In the schema represented in this thesis, for the reasons

⁴⁹ The reader is referred here to Harris & Lindsey (1995) for further exposition on these points.

⁵⁰ Again, we have not the space here to devote to this issue the detailed discussion it merits. It is discussed more fully in Bellem (forthcoming). The reader is referred to Harris (1994, 1998) and Harris & Lindsey (1995).

⁵¹ Henenforth K.L.V.

⁵² Kaye (1993) – postgraduate phonology seminar, as summarised in Charrette & Göksel (1998) and Walker (1995). This insight follows the ‘one-mouth’ principle, so-called in Anderson (1983), but an issue already raised by Jakobson.

⁵³ Cf. Charrette & Kaye (1993).

⁵⁴ Jensen (1994) terms this programme ‘non-segmentalism’.

⁵⁵ Harris (1994: 108-9).

⁵⁶ Harris (1994: 111).

⁵⁷ Harris (1994: 111).

⁵⁸ Harris (1994: 109).

discussed, the notion of headlessness is preferred. If an expression has no head, there is not an element ‘stronger’ than the others and no one element can impart its *full* characteristics. Thus, a lack of maximally salient characteristics now corresponds with nothing (‘lack of’ = no head).

Headlessness can be seen in both vocalic and consonantal positions. In vowels, headless expressions represent lax vowels or ATR contrasts. Moreover, schwa-type headless expressions involved in vowel-zero alternations are said to be the manifestation of vowels (so often involved in vowel-zero alternations) are said to be the manifestation of empty nuclear positions, a headless expression represents a velar, thus a velar consonantal position, a headless expression represents a velar, thus a velar consonantal position, a headless expression represents a velar, thus a velar consonantal position is the manifestation of an empty consonantal expression, as will be seen approximant is the manifestation of an empty consonantal expression, as will be seen the Turkish examples presently.

Moving on now to the eight elements which are used in our schema, figure (5) shows in table form the acoustic properties of these elements, and the articulatory targets, normally employed to represent those acoustic properties (i.e. the articulatory targets), which will then be discussed in further detail.

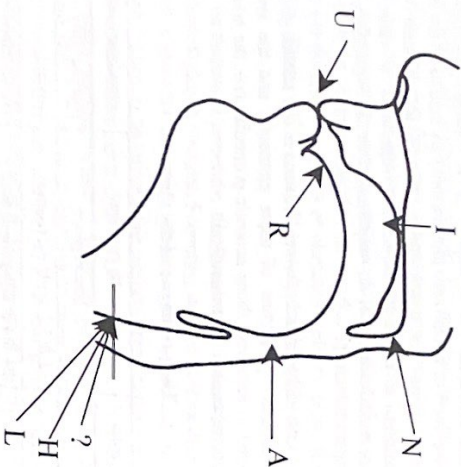
(5) **The properties of the elements**

element	acoustic property	articulatory target
A	F1 & F2: convergence	pharyngeality
I	F1 & F2: wide divergence	palatality
U	F1 & F2: downwards shift	(velar-)labiality
R	⁵⁹	coronality
N	low broad-band intensity	nasality
?	abrupt energy drop	stop
L	F0: fall	slack vocal cords
H	F0: rise	stiff vocal cords

⁵⁹ The status of R is not especially clear. Harris & Lindsey (1995) pointed out that it is hard to pin down a clear speech signal pattern for this element, or, indeed, for the class of coronal articulations. Some researchers have proposed that R should be merged with (new) A, since, according to these researchers R and A never co-occur. R is found only in consonants, and A only in vowels. However, evidence for this was drawn only from Western European languages and there is no acoustic evidence. Evidence from languages like Arabic, which has A in pharyngeals, uvulars and emphatics, shows that A indeed associates to consonantal positions. Moreover, proposals that R should simply be eliminated go against the phonological evidence of R as a strong natural class, particularly in consonant harmony systems, which always involve coronals. Thus, while acknowledging that its status is yet to be resolved, we adopt the R element here in the representation of coronals. The reader is referred to Paradis & Prunet (1991), Remison (2002), Williams (1998), Ploch (1993), Backley (1993), Ingley & Brockhaus (2002).

The articulatory targets onto which the acoustic properties of the elements are mapped are shown in diagram form in (6). It could be said to portray the components of the speech apparatus normally employed in the attempt to reproduce the salient speech signal pattern characteristic of each of the eight elements:

(6)



The four elements A, I, U and R are resonance elements. A is the aperture element, the high F1 and low F2 re-created through pharyngeal constriction and jaw opening, causing open oral tract in relation to the pharyngeal tract. I is the close element, its characteristic divergence of the first and second formants being re-created by narrowing towards the front of the oral tract (at the hard palate), and openness of the pharyngeal tract caused by tongue fronting. U is the round element, the drop of both formants being re-created by maximisation of the oral tract, through labial approximation (and protrusion) along with the raising of the tongue in the middle of the oro-pharyngeal tract (dorsal-velar approximation). R, as mentioned, is not so clear-cut, although Ingleby & Ali (2004) give it the acoustic characteristic of 'rise in spectral amplitude' (as opposed to the 'fall in spectral amplitude' of U). The articulatory target of R is a coronal gesture, performed by apical raising in the alveolar region.

The two manner elements are ?^{60} and N.⁶¹ The abrupt energy drop of ? is created by the gesture of closure preventing airflow, and is typical of stops. In isolation, since there is

⁶⁰ This paper actually proposes that ? has a dual role, since it is not only a manner element, but also has a function in laryngeal contrasts, placing it on a level with H and L. This will be discussed on the evidence of ejectives, presently.

⁶¹ It has also been proposed that L and N are actually the same element (L), since there is a close phonological correlation between voicing and nasality. There are said to be only a couple of cases of co-existence, i.e. languages that have nasalised vowels that contrast for (low) tone. Cf. in particular Ploch

no supralaryngeal gesture (resonance element), the characteristic acoustic energy drop is created by glottal closure. The low frequency broad-band murmur of the nasal element N is created by the lowering of the velum, and concomitant approximation of the vocal folds, through which the air is driven in pulses, which creates the periodic energy visible on the spectrograph (typical of vocal fold vibration, i.e. voicing). The low frequency energy is created by the periodicity of nasal tract resonance. Thus, voicing in nasals is spontaneous.

Finally, the two laryngeal elements L and H are typically represented acoustically as, respectively, a fall in pitch (fundamental frequency) or a rise in pitch. The articulatory target of the re-creation of F0 drop is vocal fold approximation, where the folds are relaxed, or slack, enough so that when the air expelled from the lungs is driven through, they vibrate, causing the effect of pulses of air, which in turn creates regular cycles of pressure, modified by the supralaryngeal gesture. The voicing is present throughout the segment, vocal fold vibration (onset of voicing) beginning before the release of the supralaryngeal gesture. However, where this is true of actively voiced segments (non-sonorants), L has a slightly different effect on spontaneously voiced segments (sonorants), where the characteristic F0 drop is created articulatorily by compressing the vocal folds so that the vibration is slower; thus the frequency of periodic waves is lower (i.e. fewer vibrations per timing unit). Conversely, the articulatory target of H, in the re-creation of raised fundamental frequency, is the stiffening of the vocal folds so that vibration is prevented, and thus the onset of voicing does not begin (through the slacking of the folds) until after the release of the supralaryngeal gesture (i.e. there is a VOT lag). How does this affect vowels, which are spontaneously voiced? The rise in the fundamental frequency characteristic of H is effected in vowels by raising the vocal folds articulatorily necessary to create this effect being the stretching of the vocal folds to narrow the approximation so that they vibrate more quickly, creating faster pulses of air, which in turn cause a higher number of pressure peaks per cycle.

It is to be noted here that H also functions as a manner element in this framework. Harris (1994) and Harris & Lindsey (1995) have the additional manner element h, which they note is characterised by aperiodic energy, as is typical of fricatives and the burst release of plosives, and which is created by the articulatory gesture of glottal opening which allows air to flow freely. However, there are phonological and phonetic reasons to doubt the existence of this element. Firstly, the acoustic characteristic of h is not phonologically contrastive but 'spontaneous' (like voicing in sonorants). No language phonologically contrasts e.g. released and unreleased stops (only in 'coda' or language final position). The only evidence I can see as plausible in arguing for the existence of h is that of spirantisation, where stops lenite to fricatives. I have no clear answer to that as yet, but the remaining evidence strongly suggests that H is the manner element responsible for voicing. For instance, where stops frequently have a three-way contrast for voicing, fricatives almost always have only a two-way contrast: voiced way contrast for voicing, fricatives almost always have only a two-way contrast: voiced way contrast for voicing. This is compatible with the inherent existence of H in fricatives, so that they may have either H alone (voiceless), or both L and H (voiced). Moreover, since the mechanisms of human speech⁶² necessarily involve the movement of air which has to pass through the glottis at some point, it is thus spontaneous, and modifiable firstly

(1999). However, Ploch (p.c.) has recently said that he no longer believes that the elements should be merged.

⁶² Here, of course, we refer to the majority of human languages, with the notable exception of sign languages, which, although worthy of research, are not directly relevant to the current work.

by laryngeal activity (free-flowing with H, obstructable partially with L and fully with ?) and secondly by supralaryngeal activity (the resonance elements superimposing characteristic resonance, modified by ? L and H).

To summarise then in this framework, ? functions as both a manner and a laryngeal element, and h is subsumed under H, which is thus both manner and laryngeal. This leaves us with L. There is no reason to suppose that it alone does not have a dual function, so what of the role it presumably has to play in manner contrasts? Possibly this is nasality, as already noted, although since this is not directly relevant here I have chosen to leave the matter open by adopting both L and N. However, I shall later propose that L is responsible for sounds which are (glottalic) ingressive, so that it does have a (perhaps marginal) 'manner' role. Further investigation is of course needed!

We shall now move on to look at some phonological support for the eight elements. However, for reasons of space, we obviously cannot present a full discussion of all the evidence offered by various researchers for each element. What we will do here is present some of the data given in discussions of lenition phenomena, which I believe provides a good summary.⁶³ There are various types of lenition, which phonologically encapsulate the loss of different (classes of) elements.

Firstly, vocalisation is the process that shows us evidence of the resonance (or place) elements which make up consonants. This is exemplified in (7) through (10):

- (7) $p/m/y \rightarrow w$
 Korean: *ki-p-t'a - ki-w-a* 'sew'
 Irish: *mo:r - wo:r* (fem.) 'big'
 Turkish: *avuc - [awuc]* 'palm'
 (8) $l \rightarrow r/\lambda$
 English: *al[ʃ]omic - al[ʃ]om*
lot of [ɒlʃ]a / [ɒlʃ]a
 Korean: *si:t'a - si:r-a* 'to load'
 (9) $\tilde{f}/\tilde{d}_3 \rightarrow y$
 Arhore: *gerraf - gerray-me* 'thief'
 Iraqi Arabic: *dajaj - dajay* 'chicken'
 (10) $k \rightarrow (y) \rightarrow \emptyset$
 Turkish: *inek \rightarrow (inay) \rightarrow ine[ʃ]* 'cow'

The relevance of each set of data is as follows. In (7) we see the presence of U in the segments *p/m/y*, i.e. labial (nasal) stops and fricatives. In (8) we see how the coronal stop *l* vocalises (reduces) to an alveolar tap or approximant, the independent manifestation of R. (9) gives evidence for the presence of I in palato-alveolar affricates, and (10) shows a velar stop reducing through a velar approximant *y*, as is still evident in some varieties of Turkish, to zero, as in Standard Turkish.

The second lenition type to be exemplified is the spirantisation \rightarrow debuccalisation trajectory, whereby a plosive spirantises to a fricative and then loses its place to H:

⁶³ The reader is referred here to Harris (1994), where some of this data is presented. Harris (1998) is also the source of some of this data, and the remaining data is my own.

- (11) a) Tiberian Hebrew: *maki* 'my king' - *malex* 'king'
 b) Liverpool English: *better* - *be/s'er*
lot - [ɒ/h]
 c) SE British English: *a head - an [e]d*
 Portuguese - Spanish: *furniga - horniga* [orniga] 'ant'

Evidence of H (as a manner element) is shown in (11), with (11c & d) showing how h is a simplex segment [H] which frequently deletes to Ø.

The last lenition type here is loss of release \rightarrow stop debuccalisation. This shows us evidence of the other manner element ?:

- (12) a) English: 'get no' \rightarrow *ge[t]no \rightarrow *ge[ʔ]no*
 b) Syrian Arabic: *qamr* \rightarrow *ʔamr*
 c) (Iraqi) Arabic \rightarrow Farsi: *ʃifʔ* \rightarrow *ʃifʔ - ʃeʔ*
*ʃifʔ**

I thus assume the eight elements A, U, I, R, L, H, N and ?.

3.2 Emphatic representation

In this section, we will propose representations for the segments discussed in Sections 1 and 2 above. The section proceeds as follows. We will work through the three-way and glottal-state opposition proposed by Dolgopolsky (1977) for Proto-Semitic and then through Dolgopolsky's hypothesis of the emphatic trajectory, as exemplified by Neo-Aramaic. We will then look at the representation of the Arabic emphatics, and lastly summarise the status of the notion of 'emphatic' in the Semitic languages.

3.2.1 Proto-Semitic

Proto-Semitic, according to most researchers (that I'm aware of), has glottalised (i.e. ejective) emphatics. According to Dolgopolsky (1977), this series represented the 'closed' glottal state, and, unlike with the Arabic emphatics today, the 'emphatics' were not backed. Therefore, I represent the Proto-Semitic emphatics as 'true' ejectives.

In this section, we will firstly reiterate points from the previous discussion of ejectives in seeking to determine acoustic cues in order to identify the elements that make up the representation. Secondly, we will briefly discuss some of the phonological evidence given in typological studies.

It was noted in Section 2 that, according to the literature surveyed, the major cues to glottalisation are raised larynx with concomitant glottal-oral closure, leading to significantly increased oral pressure, leading to distinctive release burst (increased amplitude in comparison with non-ejective release bursts). We should also reiterate here that the cue to the presence of the element ? is an abrupt and sustained drop in overall amplitude (during the closure phase).

What appears to be particularly significant in terms of perceptual cues to ejective release is the VOT lag. Noticeably, this is not the same as the VOT lag evident with voiceless aspirates, since the duration of the aspirate lag is characterised by white noise,

i.e. aperiodic energy, whereas the duration of the ejective lag is characterised by the sustained drop in energy (that characteristic of the ? element). It seems that in languages that contrast ejectives with voiceless aspirates since both are cued by VOT measurements (white noise vs edge). In order to differentiate the two types of VOT lags,⁶⁴ I shall term the former 'noise-lag' and the latter 'stop-lag'. Thus, a typical three-way plosive opposition is: noise-lag vs stop-lag vs no lag.

Noise-lag is typical of voiceless aspirates, segments characterised by the presence of the 'stiff' element H. Stop-lag is typical of ejectives, segments characterised by the presence of ?. However, since plosives are already necessarily represented by the expressions containing the ? element, we need to investigate a little further to deduce what differentiates 'plain' plosives from ejectives.

We should note here that it seems typical that languages that have ejectives contrast them with voiceless aspirates and 'plain' stops.⁶⁵ Languages that neutralise laryngeal contrasts in certain positions seem to neutralise the ejectives and the voiceless aspirates to 'plain', indicating that ejective release behaves phonologically as a laryngeal contrast. Thus, it seems that in addition to the laryngeal elements L and H, ? may also behave as a laryngeal element. This is to be expected, since in isolation it is realised as a glottal stop (the glottis being located in the larynx). There are also languages that additionally contrast implosives, on which more presently. Moreover, typological studies also often correlate ejectives with creaky voicing (as mentioned earlier). We will also take this into account presently.

Since the element ? independently has closed vocal cords and raised larynx, they must be stiff ('viz. pitch rise in ?). In this way, we can contrast 'stiff but open' (the element H) with 'stiff but closed' (the element ? manifesting its full characteristics). Thus, ? also displays pitch rise. This is very clear with, for instance, the glottal stop in glottalised 'butter', i.e. [bʌʔəl], in which the larynx is also raised, and there is a clear rise in pitch. It is said⁶⁶ that as the head of an expression, an element manifests its full characteristics. Thus, since ejectives seem to display the full acoustic characteristics of a glottal stop, we can surmise from the acoustic evidence that ejectives are represented by an expression headed by the element ?. In this way, the acoustic characteristic of ? being 'edge' is maximised in ejectives.

Evidence for ? also behaving as a laryngeal element is to be found not only in Semitic, but appears to be widespread in languages that have ejectives. Various typological

⁶⁴ The differing quality of the two bursts is very apparent in spectrographic comparison. With stop-lag, there is a clear double-release evident in two sharply-defined edges. The first of the two edges also shows strong formant transitions, indicating the resonance patterns of the oral stop, which quickly decay, with a significant energy gap before the next edge, which indicates the glottal release and vowel onset. Noise-lag is often shorter in duration, and the period of aspiration is not entirely aperiodic in that it does actually show some intensity at certain frequencies. In other words, formant patterns are detectable during the phase of aspiration. This seems to indicate the anticipatory nature of the aspiration (and even the stop itself), i.e. that the glottal friction is modified by the shape of the supralaryngeal tract in anticipation of the following vowel.

⁶⁵ Cf. Serrade (1997), Fallon (2002).

⁶⁶ Cf. Harris (1994), Harris & Lindsey (1995).

studies⁶⁷ show that it is cross-linguistically common for many languages that have a three-way opposition of 'plain', aspirated and ejective plosives to exhibit laryngeal neutralisation in certain contexts, whereby voiceless aspirates and ejectives lose their laryngeal contrast, and all stops in these contexts neutralise to 'plain'. This clearly shows that ejectiveness patterns as a laryngeal contrast, and that the element responsible for this (?) behaves in ejectives as a laryngeal element.

More evidence that it is indeed ? that behaves as the 'ejective element' is to be found in the phenomenon of creaky voice. It is sometimes supposed that the two phenomena don't co-occur in the same language;⁶⁸ however, I shall argue that ejectives and creaky voice are in fact the same phenomenon manifested in two different types of segment. Firstly, creaky voice necessarily requires some sort of voicing, whereas ejectives are never phonologically voiced. Some notes concerning creaky voice are in order here. Firstly, Hayward (2000: 223-4) distinguishes two types of what is often called creaky voice, noting that one type may be achieved by holding the vocal cords more closely together than for modal voice, resulting in "a rather more tense quality, which we shall refer to...as *pressed voice*, though the term *creaky voice* is more frequently used". She then notes the confusion over terminology (creaky voice vs laryngealisation vs glottalised phonation), suggesting that 'pressed' is a better designation since *creaky voice* and *laryngealisation* may also imply the presence of irregularity like that found in low-pitched *creak*...while *pressed* suggests only a greater degree of vocal fold adduction. It thus allows for a further distinction between presence or absence of irregularity. Thus, *pressed* refers to tense or more adducted vocal cords, whereas *creaky* refers to the more constricted type (closer to glottal stop). Notably, the more constricted type of creaky voice is achieved by the partial closure of the glottis, along with the slackness of the remaining part of the glottis allowing vibration. Creaky voice therefore seems to be most commonly found as a contrasting phonation type in vowels. Where it is found in oral stops, it seems to be the release which is creaky. Bearing in mind, however, that it is sometimes said to occur with ejectives in the onset of the following vowel, it would appear that the element ? is simply spreading into the vowel. Thus, creaky voice may be thought of as the sonorant counterpart to ejectives. In obstruents, the headedness of ? characterises ejective phonation,⁶⁹ whereas in sonorants, the headedness of ? characterises creaky phonation.⁷⁰ Moreover, sonorants

⁶⁷ Cf. in particular Fallon (2002), which is a detailed study of the phonetics and phonology of ejectives, and thus has a good typological survey and an extremely comprehensive bibliography; Serrade (1997), which focuses on laryngeal neutralisation and contains some interesting case studies.

⁶⁸ There is an interesting summary of responses to a question on ejectives and creaky voice to be found on Linguist list 11.8 (11 January, 2000) (Sum. Q:10.1720. Phonetics/Ejectives/Laryngealization) which can be viewed at: <http://www.sfs.nyu.edu/~linguist/issu11/11-8.html>

⁶⁹ 'Phonation' may seem a slightly odd term to use here, as ejectives are not voiced, but bearing in mind that ejective stops typologically pattern as a class of laryngeal contrast, 'ejective phonation' refers to ejective release functioning as a class that contrasts with other phonation types (i.e. voiceless aspirate, voiced, etc).

⁷⁰ Two further notes should be made here. Firstly, it is outwith the scope of this paper to investigate the phenomenon of creaky vowels. Therefore, the assumption that they are headed by ? is made as a parallel distinction made by Hayward (2000) between pressed and creaky is based in phonetic investigations. How far this may or may not be relevant to phonology also remains a matter of further investigation, viz. whether a single language contrasts the two types. Moreover, the literature investigated for the current paper does not clearly exactly what is meant by 'creaky voice' or 'laryngealisation', as is so often the case, the two terms can often be used rather vaguely, with no clear definition, meaning that assumptions have to be made without justification, and analyses may be hindered. It may be that there are indeed

may be distinguished from obstruents in that sonorants are spontaneously voiced, and therefore their representation does not contain L.⁷¹ Obstruents, however, commonly headless in sonorants and voiced obstruents.

The final point to be made here concerns implosives. It is not unusual for languages with ejectives to contrast them with implosives. Both ejectives and implosives are non-pulmonic (glottalic egressive and glottalic ingressive, respectively).⁷² Ladefoged (2001: 133) notes that implosives are made by lowering the larynx 'so that they suck air in'. By moving the larynx downwards, oral air pressure is decreased, so that when the oral closure is released air is sucked into the oral cavity. Implosives are normally said to be voiced.⁷³ With implosives, the lowering of the larynx also causes low pitch. Therefore, I propose⁷⁴ that voiced implosives are represented by L-headedness, and 'voiceless' implosives by L-headedness with a dependent H. This correctly predicts that 'voiceless' implosives are less common cross-linguistically than their voiced counterparts, since the representation is more complex.⁷⁵

Going back now to the aim of this section, which is to identify the representation of Proto-Semitic obstruents, we recap that Proto-Semitic is said to have had a three-way stop contrast. Moreover, Dolgopolsky (1977) proposes that this represents the three states of the glottis: open, approximated, closed. This would be realised roughly as voiceless aspirated, voiced and glottalised. However, bearing in mind the typological evidence, and considering that in a three-way system, a language would be highly likely to have a 'default' plain series (i.e. one containing no laryngeal element), I suggest that Proto-Semitic should actually be represented with voiceless aspirated, 'plain' voiceless and ejective stops. This proposal is strengthened by the evidence of Arabic, since in Arabic, according to my proposal, the only truly voiced stops are the voiced emphatics, which developed as we will see presently. In this way, L has no role in Proto-Semitic, which seems typologically likely.

We therefore propose the following representations for the glottalised obstruents of Proto-Semitic:

phonologically two types of 'creaky voice', the tense /adjoined version being the manifestation of H-head, and the irregular type being the manifestation of ?-head. This, of course, would be an interesting investigation to conduct in its own right.

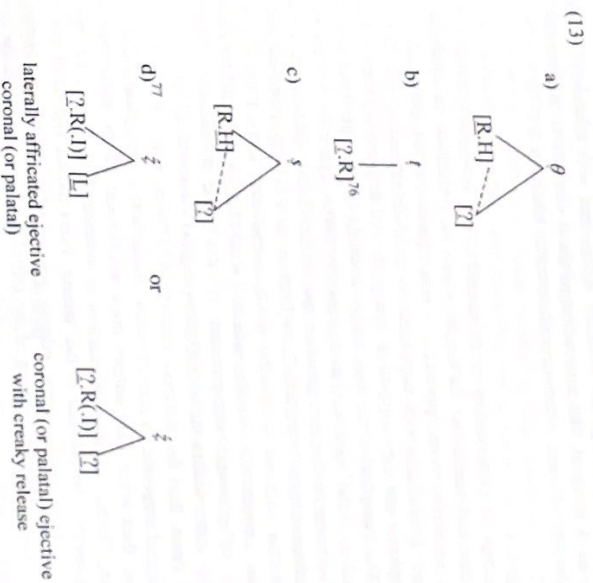
⁷¹ I note further that voiceless sonorants would probably have H in their representations. It would be interesting to investigate the interaction between voiceless sonorants and tone in languages that have the two.

⁷² As a passing note of interest, Hayward (2000: 268-9) mentions three types of non-pulmonic consonants: ejectives, implosives and clicks. The first two are glottalic, whereas the latter are velaric.

⁷³ Ladefoged (2001: 133) notes that 'when the vocal folds are pulled downwards, they leak a bit, and get set into vibration by the air that is passing between them. Most of the languages that have implosives produce them as voiced sounds, although it is possible to make them with the vocal folds tightly together so that they are voiceless'.

⁷⁴ It should be noted that these proposals are at this stage somewhat tentative, since time and space restrictions do not allow a full investigation here, and since it is not directly relevant to this paper. It thus remains for future research!

⁷⁵ Note that this is common to the laryngeal elements. That is, the most common type of plosive is voiceless 'plain', i.e. no L, and no H. Three-way contrasts are less common than two-way, and four-way contrasts involving a combination of L and H (such as in breathy voice) are less common still.



3.2.2 The 'emphatic' trajectory
As noted in Section 2.2, Dolgopolsky (1977) maps out a trajectory of ejective-emphatic which can be traced through the Neo-Aramaic realisations of 'emphatics', with the final stage being represented by Arabic. The following subsections will discuss each stage of the trajectory in the light of the theory of elements discussed above. We will therefore propose representations for the 'emphatics' of each stage, which will enable us to identify the link between Arabic-style emphatics and ejectives.

3.2.2.1 Stage 1

The first stage of this trajectory is evident in Urmian Nestorian/Neo-Assyrian and varieties of Kurdistan Jewish Neo-Aramaic. The ejective glottalisation in these dialects is accompanied by tongue retraction and 'recession' of either the adjacent vowels or of the whole word. The non-emphatic voiceless counterparts, as in Proto-Semitic, are aspirated and there is no recession.

⁷⁶ Note that I do not consider that this confuses coronal stops and laterals, since the former in my view are characterised by R-head, while the latter are characterised by L-head. Since the L-head is integral to the definition of laterals, they therefore behave as sonorants in that L is not contrastive. However, since H could be contrastive, voiceless laterals are exclusively coronal and/or palatal, which indicates typologically less common. Moreover, laterals are therefore possible, but it is predicted that they are the combination of ? and L-head is dependent on R in its interpretation as a lateral (thus, palatal laterals contain R and I, so that their pattern with both coronals and palatals). Again, it is not possible to investigate here the full implications of this proposal concerning the representation of laterals, and it is left to future research.

⁷⁷ It is not clear what exactly z is, cf. footnote 32. We therefore give a couple of possible representations.

The 'emphatics' of this stage are therefore represented with a headed ʔ element, and additionally an A element. The association of the A element to consonantal positions containing the stop element is thus dependent on the headedness of ʔ .

3.2.2.2 Stage 2

The second stage of the trajectory is represented by the Jewish Neo-Aramaic dialects of north-west Iran and south-east Turkey, in which the opposition of emphatic and non-emphatic is actualised as an opposition of non-aspirated versus aspirated, respectively. In this stage, glottalisation is weakened to semi-glottalisation, and the distinction between emphatic and non-emphatic is now perceived as primarily that of aspiration vs. recession. The 'emphatics' of this stage, I would argue, are what are sometimes distinguished as 'lenis' ejectives, as opposed to 'fortis' ejectives.⁷⁸ It appears that the distinction between the two is a phonetic one, in that 'fortis' ejectives have a significant VOT lag, whereas 'lenis' ejectives have little or no VOT lag. Phonologically, I don't believe that this contrast is relevant to representations, since I am not aware of a language that contrasts the two realisations. I would therefore argue that the distinction is a matter of phonetic interpretation of the same phonological representation. However, the status within the overall phonological system of the language may not be entirely the same, thus the different realisation. That is, at this stage of the trajectory, the phonological emphatic vs non-emphatic distinction is perceptually that of aspiration vs recession, thus since the contrast does not depend on the perceptual salience of glottalisation, 'fortis' ejective realisation is weakened to 'lenis', i.e. the VOT lag shortens. However, the salience of the 'strong' burst release typical of ejectives is still maintained as the 'strong' burst release typical of recessed obstruents, since the pharyngeal constriction acts instead of the raised larynx to compress the oral tract and raise the pressure, and therefore to propel the air through the oral tract upon release.

In this phonological system, 'emphatic' contrasts primarily with aspiration. The voiceless aspirated consonants display laryngeal raising, whereas the larynx is not raised with the 'emphatics'. Phonologically, the three-way contrast is, as in stage 1, \emptyset vs H vs ʔ -head and A.

3.2.2.3 Stage 3

The third stage, that of Tur 'Abdin, sees the complete loss of glottalisation, and emphatics are now distinguished from non-emphatic voiceless consonants as non-aspirated from aspirated and as recessive, which also causes the recession of adjacent vowels, from non-recessive. Phonologically, we see the demotion of ʔ from head to dependent. The phonological contrast in this stage is therefore \emptyset vs H vs A. Perceptually, there is a contrast between 'plain' obstruents, aspirated obstruents, and 'plain' but emphatic obstruents.

⁷⁸ Cf. Fallon (2002: 269 ff.) on Kingston (1985b), who gives typology of tense and lax (i.e. fortis & lenis) ejectives. These do not appear to be contrastive within one language. Kingston's typological investigation, according to Fallon (2002: 271), contains the observation that 'fortis' ejectives are said to have stiff vocal folds, while lenis ones are lax'. However, this again seems to me to boil down to the traditional western notion of a two-way voiced-voiceless opposition, which does not hold true cross-linguistically. Particularly, as we have made explicit here, systems with ejectives often phonologically oppose them to voiceless aspirates and 'plain' voiceless segments, thus ejective is itself a laryngeal contrast.

3.2.2.4 The final stage

According to Dolgopolsky, the final stage is represented by Arabic, since he proposes that in this stage aspiration is lost and the emphatics are distinguishable only by recession. However, in my view, Arabic is slightly more complicated. Dolgopolsky's suggestion probably lies in the observation that Arabic emphatics are a series lower of voiced vs voiceless, but I have proposed that Arabic emphatics are a series lower than non-emphatics, in terms of voicing. Dolgopolsky's suggestion, in my view, stems from the traditional notion of laryngeal contrasts as being two-way, as discussed previously. Were we to follow Dolgopolsky's hypothesis faithfully, it would seem that the fourth stage entails a two-way laryngeal contrast, where the non-emphatics have true laryngeal counterparts in the emphatics. I.e., voiceless / corresponds with voiceless / and voiced / with voiced /. However, we have argued here that the Arabic emphatics are not true counterparts of the non-emphatics in terms of voicing. Thus, we find voiceless emphatics having A and no laryngeal element and voiced emphatics contrast and L. The difference between stages 3 and 4 is therefore that since emphatics contrast laryngeally in stage 3, they have developed voiced counterparts which are also distinguishable laryngeally, in that they are associated with an L element. The representation of the Arabic ('primary') emphatics is thus as follows:

(14)	s	[RAHI]
	z	[RAHL]
	t	[R?AI]
	d	[R?AL]

3.2.3 Ethiopic and Modern South Arabian

Finally, we turn full circle and come back to ejectives. Ethiopic and Modern South Arabian languages have glottals, i.e. ejectives, where Arabic has emphatics. However, the ejectives are voiceless. We can surmise that these ejectives therefore have the same representations as those we have proposed above for Proto-Semitic, i.e. the three-way contrast in stops is one of voiceless aspirated vs 'plain' voiceless vs glottalised. This is grammaticalised in the phonology as stops containing H, having no laryngeal element, or being headed by ʔ . Fricatives are also as surmised for Proto-Semitic, i.e. they are contour segments (expressions which have not fully fused), with the ʔ contained in the dependent part of the contour spreading into the head expression.

We noted earlier that in Jibbali there is a glottalized s (s') corresponding to the Amharic ejective, and that it is thus possible to have voiced counterparts to these. They are also contour segments, as above, but the ʔ in the dependent expression does not spread into the head.

One final point to be noted here is vowel contrastivity in the environment of ejectives. Rose (1996) discusses Tigre, a North Ethiopic language which has the pharyngeals h and f and the ejectives t, s, c, k, all of which lower a following a to a. According to Rose, Tigre is one of very few languages known to have vowel-lowering ejectives. Much evidence has been provided in previous work to back up the proposal that pharyngeals are characterised by the A element.⁷⁹ However, the case of vowel-lowering ejectives is not so clear-cut, and I therefore suggest that there are a couple of possibilities. Either they are not only glottalised but also recessed (i.e. they contain a ʔ -head as well as A), or there is some other sort of spreading. It is possible that A is

⁷⁹ Bellem (2001).

spreading from a pharyngeal, or that pharyngeals have somehow become linked with ejectives, but A is not interpretable in the ejective segment and is therefore displaced onto the following nucleus. For now, however, this is mere speculation. It warrants further investigation, but is outside the scope of this paper.

3.3 Summary

Here, we summarise the main findings and proposals of Section 3. Firstly, ejectives are characterised by the element ? having the role of head in the expression. Secondly, the element ? acts as a laryngeal element when head. Therefore, what is perceptually crucial in the production of emphatics is not so much the recession (the presence of the element A) but the voicing opposition. In this way, 'emphatic' is actually a laryngeal contrast which in some languages (e.g. Arabic) has taken on secondary characteristics. In these languages, it is the pharyngeal characteristic of the emphatic which can affect the nature of a certain domain (i.e. the spreading process which I shall call here emphatic harmony), and it is this which therefore receives primary attention in the literature.

We have proposed that ejectives are primarily glottals, with the oral stricture being in some way secondary. We should also note here that the 'reduction' of ejectives to either 'plain' voiceless obstruents or glottal stops is akin to the 'reduction' of (Arabic-style) emphatics to either non-emphatic obstruents or pharyngeals. Where an ejective lenites to a 'plain' voiceless obstruent, the ? element is demoted to operator status; where it lenites to a glottal stop, the perceptual salience of the ? element is maximal, and therefore overrides the other elements, which are consequently de-linked from the expression. Where an Arabic emphatic lenites to a non-emphatic obstruent, the A element is de-linked, and in the case of a voiced emphatic, also loses L; where emphatics lenite to pharyngeals, the salience of the A element is maximised at the expense of the primary resonance element, which is then de-linked.

4 Conclusion

The status of 'emphatic' in Semitic is therefore not entirely straightforward. However, it appears that the common link between all types of 'emphatic' is in laryngeal contrasts.

We noted in Section 1.2 that emphatics are typologically less common than ejectives. From the findings of this paper, I suggest that this hinges on the function of glottalisation as a primary laryngeal contrast, whereas Arabic-style emphatics, although inherently encoding the laryngeal contrast, due to the additional secondary function of the A element, are more complex. It is perfectly reasonable to suppose that non-Semitic languages that have emphatics do not have the same laryngeal contrast. Nevertheless, since secondary articulations are anyway marked, these segments are bound to be less cross-linguistically attested.

The link between ejectives and Semitic emphatics is therefore intrinsic to the function of laryngeal contrasts.

One final point to be made here is that it is these areas which have been under-researched in many theories of phonological representation. The paper has highlighted many topics ripe for the plucking, so to speak, which could tell us much about phonological representations, certainly in terms of the theory of elements.

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Defining the structure of Turkish words'

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0 Introduction

Defining the structure of Turkish words, or "the story of *kuzu* and *koyun*", is a challenge for any phonologist who believes that representations do matter. That is, in a framework where lexical representations are of no concern, the fact that in Turkish 'ice' is *buz* and 'lamb' is *kuzu*, 'his ice' is *buzu* and 'his lamb' is *kuzusu*, both 'bosom' and 'sheep' are *koyun*, but 'my bosom' is *koynum* and 'my sheep' is *koyunum*, are Turkish data which are neither obviously challenging nor related. Within a framework where lexical representations do matter, however, not only are those facts puzzling, they are also related in that one's claim about the representation of *buz* has direct consequences for the representation of *kuzu*, and one's claim about the representation of *koyun* 'bosom' has consequences for the representation of its homonym 'sheep'.

In this article I aim to shed light on the above facts and propose a structure for Turkish words in which the facts find an explanation in a domino effect.

Viewed through the lens of Government Phonology (henceforth GP), any analysis of Turkish syllabic structure faces the problem of explaining why some empty nuclei are interpreted despite the fact that they appear to occur in positions where they should be p-licensed. More precisely, the challenge is to account for the presence of word-final high vowels (e.g. *kuzu* 'lamb', *kedi* 'cat', *arı* 'bee', *ütü* 'iron') in a language where domain-final empty nuclei are p-licensed and to account for the fact that vowel-zero alternation takes place in some words but not in others (e.g. *koyun* 'bosom', *koynum* 'my bosom' vs *koyun* 'sheep', *koyunum* 'my sheep').

Different proposals have been made within GP to account for the presence of final high vowels in Turkish. Kaye (1990) claimed that words of the type *kuzu* have three onset-nucleus pairs with the final pair being an empty onset followed by an empty nucleus, Denwood (1998) claimed that Turkish is a templatic language and that *kuzu* is morphologically complex in that it consists of a sequence of two templates, and finally Charette (2000) claimed that the word-final high vowels are metrical heads and as such fail to be p-licensed.¹

In this article I discuss Kaye's and Denwood's proposals in turn and show that Denwood's idea of a template for Turkish words can be developed and modified in such a way that it accounts for many more facts than the presence of final high vowels.² With some modifications, I will show that the proposal of a template for Turkish can also explain why vowel-zero alternation occurs in some words and not in

¹ I wish to thank Katalin Balogne Berces, Alex Bellem, Aslı Göksele, Daniel Huber and Nermin Mehta for their help and useful comments. All errors are mine.

² In GP, empty positions are subject to the 'Empty Category Principle' according to which empty categories can be un-interpreted iff they are p-licensed (i.e. properly governed, domain final or occurring within an onset-to-onset governing domain). The reader is referred to Kaye (1990) and Charette (1991) for details.

³ Denwood aims to explain why minimal words in Turkish have the form (C)VC or (C)V: and why no suffixes have a long vowel. She then shows how her proposal of a template can account for the presence of final high vowels and for the alternation of *k* with zero.

others, why certain suffixes are realised with a 'buffer' consonant while others trigger vowel loss and why the prefix type of reduplication normally consists of a CV(C) type of affix.

The article is organised as follows. In section 1 I summarise Charrette & Gökseçli's claim (1996, 1998) that recessive nuclei in Turkish are restricted to those containing a lexical (A) or being lexically empty and that, consequently, non-initial high vowels are the phonetic interpretation of empty nuclei failing to be p-licensed. In section 2 I consider in turn Kaye's (1990) and Denwood's (1998) proposals to account for the presence of word-final high vowels. In section 3 I develop Denwood's analysis to provide an account of the process and lack of process of vowel-zero alternation, of the different realisations of certain suffixes and of reduplication.

1 Empty nuclei

Any GP analysis of Turkish syllabic structure should come to the conclusion that non-initial high vowels are derived from empty nuclei failing p-licensing (see for example Charrette & Gökseçli 1996, 1998). This provides an account of the vowel harmony facts and the alternation of high vowels with zero. However, the main challenge GP analyses face is to explain the unpredicted fact that Turkish words can end both in consonants and in high vowels. The problem here is that if words can end in a consonant, it is because word-final empty nuclei are p-licensed in Turkish and if non-initial high vowels are the manifestation of unlicensed empty nuclei, then high vowels should never be found in word-final position, i.e. in a position which is p-licensed. In this section, starting by motivating the claim that non-initial high vowels are derived from empty nuclei, I will consider different possibilities to account for the occurrence of word-final high vowels: (i) final high vowels are lexical and not derived, (ii) words ending in a high vowel have an extra position, e.g. a floating consonant or an additional syllable in their representation and (iii) bi-syllabic words ending in a vowel are morphologically complex.

1.1 The internal representation of the vocalic expressions

Following Charrette & Gökseçli (1996, 1998), the eight vowels of Turkish have the representations given in (1) below.

- (1) i (i) ü (ü) u (u) ı (ı)
e (e) ä (ä) ö (ö) ı (ı) a (a)

This vocalic inventory and the harmonic behaviour of the elements I and U are the result of the three Licensing Constraints given in (2).

- (2) i) Operators must be licensed (i.e. all expressions are headed)
ii) U must be head
iii) A does not license operators

Relevant to the present discussion is that if one proposes that it is a characteristic of Turkish words that the leftmost nuclear position can dominate any vocalic expression and all recessive nuclear positions are restricted to dominate (A) or be lexically

empty, then one accounts for both the distribution of vowels within a word and for the harmonic behaviour of the elements I and U.³

Front and round harmony are triggered by the leftmost vowel within a word. The element I, which can occupy the role of head or of operator within a phonological expression, spreads as an operator into (A) resulting in (I-A) (i.e. e), or spreads as a head to an unlicensed empty nucleus resulting in (U) (i.e. ü). As for the element U, given the Licensing Constraint according to which it must be head of an expression, it cannot spread into (A), which already occupies the role of head within the expression, and is therefore restricted to spreading (as a head) into unlicensed empty nuclei.⁴ With this latter constraint resulting in the impossibility of U spreading into (A), we account for the absence of non-initial *o* and *ö*.

When U spreads into an unlicensed empty nucleus, the result is *u*, or *ü* if the element I spreads along with U. As for the vowel *i*, it is the phonetic realisation of a nucleus devoid of melodic material and therefore occurs only following the two vowels which do not trigger harmony, that is the vowels *a* and *ı*.

According to this analysis, word-internal high vowels are always the phonetic manifestation of empty nuclei failing to be p-licensed and undergoing harmony when the context is met. The good news is that it is exactly those high vowels and not the low and mid ones which alternate with zero in certain morphologically complex words (e.g. *burun* 'nose', *burun* 'my nose', *geniz* 'nasal passage', *genizim* 'my nasal passage' vs *adım* 'man', *adımın* 'my man', *dünya* 'wheel', *dünyam*, *passage*' vs *adım* 'man', *adımın* 'my man', *dünya* 'wheel', *dünyam*, *passage*' vs *adım* 'my wheel').⁵ The structure of *burun* and *burunim* are given below.⁶

- (3) a)

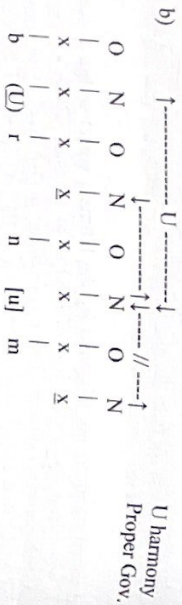
↑-----U-----↓	↓-----//-----↓	I harmony
O	N	O
x	x	x
b	(U)	r
		[u]
		n

³ The leftmost nuclear position is the harmonic head of a domain and as such it is always phonetically interpreted. The position can be lexically filled, and can dominate any of the seven vowels of the inventory, or it can be lexically empty in which case it fails to be p-licensed and is interpreted as *i* (e.g. *gök* 'high', *kız* 'girl').

⁴ Since the element A can occupy the position of head or of operator in Turkish, one could have expected U to spread into (A) causing an isomeric swap, i.e. resulting in A changing to the position of operator in order to let U occupy the position on head. In Charrette & Gökseçli (1996, 1998) we discuss this possibility, which we refer to as 'switching', and propose that switching is parametric. It does take place in certain Turkic languages (e.g. Yakut), but not in others (e.g. Turkish). See the above references for details.

⁵ The alternation of high vowels with zero does not take place in all words (e.g. *deniz* 'sea', *denizim*, *denizim* 'my sea'). I will come back to this point shortly.

⁶ An underlined skeletal point means that the position is p-licensed.



An additional fact of Turkish is that word-final empty nuclei are parametrically licensed in the language. That is, on the surface words can end in a consonant. Given that the parameter on word-final empty nuclei is ON, and given that non-initial high vowels are derived from empty nuclei which fail p-licensing, what one does expect is to find high vowels in p-licensed positions, i.e. to occur word-finally for example. Unfortunately this prediction is not borne out. We do find words ending in high vowels (e.g. *kutu* 'box', *kuzu* 'lamb', *kedî* 'cat', *arı* 'bee', *ölçü* 'measure', *ulu* 'iron' etc). Let us go investigate why it is so.

1.2 Are final high vowels lexical?

The first solution one could consider is that high vowels are not the expression of unlicensed empty nuclei but are lexical. A word like *kuzu* 'lamb' for example, would not have the structure /kuzø/, but the structure /kuzu/. In other words, the rightmost vowel would not be a harmonised unlicensed empty nucleus; it would be a lexical *u*.

There are three major problems with this proposal. First, if the final high vowels in words like *kuzu* 'lamb', *kedî* 'cat', *arı* 'bee' and *ulu* 'iron' are lexical instead of being (harmonised) unlicensed empty nuclei, why are the final round vowels always preceded by a round vowel? (e.g. *körü* 'woods', *hüü* 'iron', *kuzu* 'lamb', *örüü* 'cloth/cover'), the final *i* always preceded by *e* or *i* (e.g. *kedî* 'cat', *iki* 'two') and the final *u* always preceded by *a* or *u* (e.g. *arı* 'bee', *kayı* 'shore')? In other words, why are the high vowels that this proposal claims to be lexical always harmonic? I agree that there is no a priori reason why lexical vowels would not undergo harmony, after all, *a* is lexical and it is subject to palatal harmony. However, the difference between *a* and the high vowels is that *a* occurs after any back vowels (after a front vowel it is harmonised to *e*), that is, lexically, *a* is found whether or not the context for harmony is met. This is not true for *u*, *i* and *ü* however, as words like *arıu*, *arıi*, *arıü* are ill-formed.⁷

Secondly, some non-initial high vowels have the property of alternating with zero (e.g. *burun*, *burunm* '(my) nose', *geniz*, *genizm* '(my) nasal passage', *koyun*, *koyunm* '(my) bosom').⁸ Since all the four high vowels alternate with zero when the right context is met, one claiming that they are lexical would have to explain why the vowel *a*, which is also lexical, never alternates with zero (e.g. *adam*, *adamm*, **adamm*

⁷ I am fully aware of the fact that Turkish has disharmonic words. These are generally either loan words which are not only disharmonic, but also disobey the natural vowel sequences of native Turkish words (e.g. violation of internal *o* and *ö* *buvo* 'desk', *şoför* 'driver' borrowed from French), or they are spreads into the type *tanuk* 'chicken', *sabun* 'soap', where an element U contained in the labial consonant spreads into the following unlicensed empty nucleus, or they are morphologically complex words.

⁸ As I mentioned earlier, high vowels do not always alternate with zero. The vowel *u* of *koyun* 'bosom' alternates with zero while the vowel *ü* of *koyun* 'sheep' does not (e.g. *koyunm* 'my bosom' vs *koyunm* 'my sheep'). I will analyse those facts in a later section.

'(my) man'). What is the difference between a lexical *a* and a lexical high vowel? What prevents the former but not the latter from alternating with zero?

Thirdly, proposing that final *u*, *i* and *ü* are lexical does not solve the problem of final (my) man. Within the theory of Government Phonology, segments are composed of elements, *l*. Within the three elements I, U and A, occurring alone or in combination, for oral vowels the role of head or of operator within an expression, and subject to occupying the role of head or of operator for a given language, give us the Licensing Constraints parametrically determined for a given language, given the vocalic systems found in the world's languages. Given the analysis of Turkish Licensing systems found in the world's languages. It is the phonetic presented above, the vowel *i* is devoid of elemental material. It is the phonetic interpretation of the absence of I, U or A.⁹ The lexical representation of a final *i* can therefore only be an empty nucleus. That is, segmentally speaking, there is no difference between the two words *arı* 'shame' and *arıi* 'bee' given below in (4 a & b) respectively.

	(4) a)	b)	c)
	O	N	O
	x	x	x
	a	r	[i]

In conclusion, proposing that the final high vowels are lexical is not only theoretically unfounded, it also leaves us with no explanation as to why the quality of those vowels is predictable in that it obeys the independently motivated rules on vowel harmony.

I therefore propose that the final high vowels are the manifestation of an empty nucleus which fails p-licensing and is consequently phonetically interpreted. The question to be addressed is: what prevents those nuclei from being p-licensed?

2. Final high vowels: two accounts

As mentioned earlier, different GP analyses have been proposed to account for the presence of final high vowels in Turkish. I start with Kaye (1990) who claimed that words ending in high vowels have a final empty onset-empty nucleus pair in their representation.

2.1 Kaye 1990

Motivating a principle of the grammar according to which a consonant occurs in the rhyme if it is governed by a consonant in the following onset (i.e. the Principle of Coda Licensing), Kaye discusses the difference between the Turkish words *merak* 'curiosity' and *meraki* 'his curiosity'. In short, he claims that a long vowel shortens when it occurs before a p-licensed empty nucleus. According to 'Coda' Licensing, a word-final consonant cannot be syllabified in a rhyme since there is no following onset to govern it. Taking *merak* as an example, the final *k* is syllabified in an onset and since an onset is always followed by a nucleus the representation is as follows:

⁹ See Harris & Lindsey (1995) for the acoustic signature of the elements I, U and A.

(5)

O	N	O	N	O	N
x	x	x	xx	x	x
m	e	r	a	k	

The final nucleus of *merak* is not phonetically interpreted. On the surface the word ends in a consonant. This means that in Turkish, word-final empty nuclei are p-licensed. The nucleus dominating *a:* is followed by a word-final p-licensed empty nucleus and shortening consequently takes place. The problem with *merak* is that the final vowel is the phonetic manifestation of a non p-licensed empty nucleus which appears to occur word-finally, that is, in a p-licensed position. Why is this nucleus phonetically interpreted? What prevents it from being p-licensed? What is the difference between the structure of *merak* and the one of *merak?* Kaye claims that the final vowel of the possessive form is not final in its domain, since if it were the position would be p-licensed and un-licensed. He suggests that the possessive form has a final consonant in its representation and that, although this consonant is not phonetically realised, it strips the nucleus dominating *r* of its licensed position. If the nucleus is not p-licensed, then of course it will be interpreted and in addition the context for shortening is not met. This is how Kaye derives *merak*. The structure he proposes is given below.

(6)

O	N	O	N	O	N	O	N
x	x	x	xx	x	x	x	x
m	e	r	a	k	|l|	X	

The presence of the mystery consonant X provides an account for the realisation of *r*. This 'mystery' consonant belongs to an onset which is followed by an empty nucleus. This final nucleus is p-licensed, but the nucleus to its left fails p-licensing and is interpreted. The context for vowel shortening is not met since *a:* is followed by an unlicensed empty nucleus. It now remains to justify the proposal that the possessive suffix is composed of NON and not only of N. Quoting Underhill (1976), Kaye shows that indeed a consonant *n* surfaces in the context of stem+possessive+case/plural, such a consonant being part of the possessive suffix and being deleted only in word-final position. The relevant data are given below. In (7a) we see the appearance of *n* when a case/plural suffix follows the possessive and in (7b) we see that *n* can only be part of the possessive suffix and not of the stem.

(7)

a)	baba	'father'	ev	'house'
	babası	'his father'	evi	'his house'
	babasına	'to his father'	evine	'to his house'
	babasından	'from his father'	evinden	'from his house'
b)	bahaya ¹⁰	'to the father'	eve	'to the house'
	bahadan	'from the father'	evden	'from the house'

¹⁰ If *n* belonged to either the stem or to the case suffix, 'to the father' would be **babana* and 'from the father' **babandan*.

The correct structure Kaye proposes for *merak* is therefore:

(8)

O	N	O	N	O	N	O	N
x	x	x	xx	x	x	x	x
m	e	r	a	k	[l]	n	

Kaye's article is not devoted to Turkish and his analysis of the language does not go further. While his proposal that the possessive suffix has a floating consonant accounts for the facts he has considered, much more has to be said about the language. An additional property of the possessive marker for example, is that it is realised as -V(n) when suffixed to a stem ending in a consonant and as -sV(n) when the stem ends in a vowel (e.g. *baba-sı* 'his father', but *ev-i* 'this house').

If one adopts a proposal made by Denwood (1998) to account for the same facts, more light is shed on many different particularities of Turkish.

2.2 Denwood 1998

Adopting a proposal made by Goh (1996) according to which Beijing Mandarin words are made up of a four-position template, Denwood (1997) extended this proposal to Mongolian and then to Turkish (1998).¹¹

One particularity of Beijing Mandarin words is that they are of the form CVC, CV: or CVCV. CVCV words do not occur in the language. Goh's explanation for those facts is that words are made up of a four-position template (i.e. two onset-nucleus pairs) and only one of the two positions of the second syllable can be interpreted. The representations of *kan* 'dry', *tau* 'head' and *fu* 'hair' are given below.

(9)

a)	O	N	O	N	O	N	O	N
	[x	x	x	x]	[x	x	x	x]
	k	a	n		t'	o	u	
b)	O	N	O	N	O	N	O	N
	[x	x	x	x]	[x	x	x	x]
	f	a			m	a	n	a
c)	O	N	O	N	O	N	O	N
	[x	x	x	x]	[x	x	x	x]
	f	a			m	a	n	a

In (9a) the second onset is lexically filled and the following nucleus is empty and p-licensed. In (9b), the second onset is empty and the final nucleus is lexically filled. In (9c), both the two final positions are lexically empty so the content of N₁ spreads into N₂ in order for N₂ to be the proper governor of the empty onset preceding it. Finally in (9d) we have an ill-formed word with the two final positions being lexically filled.¹²

¹¹ The reader is referred to Goh (1997) for full details of the analysis and to Denwood (1997) for her adaptation of a template to Mongolian.

¹² Beijing Mandarin words can also be composed of a sequence of two four-position templates. See Goh (1997) for more details.

I now turn to Denwood's proposal that Turkish words are, as in Beijing Mandarin, composed of a template.

2.2.1 A template for Turkish

In this section I present the main lines of Denwood's analysis of Turkish, leaving aside some aspects which are not relevant to the present discussion.

Wishing primarily to account for the facts that (i) Turkish native words consist minimally of (C)VC and (C)V, that (ii) no suffix has a long vowel, and finally that (iii) suffixes have the forms (C)VC or (C)V, Denwood (1998) proposes that Turkish words are made up of a four-position stem-template which can be followed by one or more suffix-templates of also four positions. Turkish, she claims, is subject to the following conditions:

- i) Domain-final nuclei in Turkish are always empty.
- ii) The parameter is fixed for domain-final p-licensing.
- iii) There is only one context where a domain-final empty nucleus must be interpreted in order to satisfy the requirements of a minimal word: when O2 of a stem template is empty. N2 of a suffix is never interpreted. (Denwood 1998:182)

The structures she proposes for the words *ev* 'house' and *dağ* [da:] 'mountain' are given below.

(10) a)	O ₁	N ₁	O ₂	N ₂	b)	O ₁	N ₁	O ₂	N ₂
	[	x	x	x]		[	x	x	x]
	e	v				d	a		

In (10a) both the initial onset and the final nucleus are lexically empty and p-licensed: O₁ by virtue of being properly governed by its nucleus which is lexically filled and N₂ by virtue of being domain-final. As for (10b) both O₂ and N₂ are lexically empty and the content of N₁ spreads to N₂ for the latter to act as a proper governor for its onset.

Denwood then considers suffixes and claims that unlike for stem-templates and unlike in Beijing Mandarin, no condition forces one of the final two positions of a suffix-template to be realised. If the last two positions of a suffix-template have no content, she claims that they remain unused, adding: "Whether or not they are reduced from the structure or simply unused is as yet unclear" (Denwood 1998:183). Below are the structures she proposes for *evden* 'from the house' and *evde* 'at home':

(11) a)	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃	O ₄	N ₄
	[	x	x	x]	[	x	x	x]
	e	v			d	e	n	

The structure in (11a) is straightforward. The final nucleus of each template is domain-final and p-licensed. In (11b) however, the final two positions of the suffix-template are empty and since Denwood claims that no spreading takes place within suffix-templates, the last two positions are said to remain unused.¹³

Since domain-final nuclei are p-licensed except when they occur in a stem-template and act as proper governors for a preceding empty onset, CVCV words are morphologically complex in that they are composed of a stem-template to which a suffix-template is attached. Claiming that words ending in a vowel are morphologically complex provides an explanation as to why words can end in high vowels, i.e. in a position which appears to be final, but fails to be p-licensed. As an example, Denwood looks at *balı* 'honey (acc)':

(12) a)	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃	O ₄	N ₄
	[	x	x	x]	(x)	x	x	x]
	b	a						

b)	O ₁	N ₁	O ₂	N ₂
	[	x	x	x]
	b	a		

balı

Denwood derives (12b) from (12a) in the following manner:

- (a) shows full stem and suffix templates. N₂ is parametrically p-licensed. The initial onset of the suffix is empty and shown without using its onset point. The final onset of the suffix is also empty (possibly having lost a historical consonant). N₃ is empty, but must be interpreted as head of the suffix template. N₄ is domain-final, empty and parametrically p-licensed. It is one of the proposed conditions on suffix templates in Turkish that the domain-final nucleus can under no circumstances be interpreted. In (b) N₂ and O₃ are reduced from the structure. Word-final O₄ and N₄ are also either reduced from the structure, or simply not used. Suffix-initial N₃ is interpreted as [l].

(Denwood 1998:184)

I believe that Denwood's insight is correct and that her proposal of a template has a lot of potential. What is unclear and lacks motivation, however, is what determines

¹³ In a more recent article Denwood (2002) claims that spreading takes place in stem-templates in order to satisfy the requirements of a minimal word and that no spreading takes place in suffix-templates as the minimal word requirements are already met.

that certain syllabic constituents are deleted or unused. Although she uses the Reduction Principle proposed by Gussmann & Kaye (1993) and according to which an empty nucleus followed by a pointless onset are removed from the structure, she proposes a template where syllabic constituents are always linked to skeletal positions. This is clearly not a context for the application of Reduction.¹⁴ Given the un-clarity of how templates are used I will go on to develop Denwood's proposal further so as to account for more facts than those she has considered and to make the analysis theoretically tighter. This means that while I will follow the main lines of her analysis, I will show that based on empirical and theoretical arguments, the structure of her template has to be slightly modified.

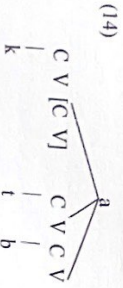
3 The Turkish template revisited

Turkish is an agglutinative language. Words are composed of a nominal, verbal or adjectival stem to which one or more suffixes are affixed to form words and phrases.

- (13) cv 'house'
 evler 'houses'
 evlerin 'my houses'
 evlerimden 'from my houses'

Morphologically, Turkish words are composed of one or of a series of domains (e.g. [[[[stem] plural] possessive] case]. This type of morphology, agglutinative morphology, is quite different from non-concatenative morphology, also known as templatic, which characterises Semitic languages. In non-concatenative or templatic languages, words are formed of templates, which are domains with a fixed number of positions (or 'syllables') assigned to a given morphological category, and morphology is reflected by the way segments are associated to the positions.¹⁵ For example, in Semitic languages a regular root contains three consonants (e.g. *ktb* '(to) write'). Two vowels are inserted between them C₁V₁C₂V₂C₃ so that the consonants carry the lexical meaning and the vowels the grammatical meaning.

The root *ktb* '(to) write' is realised as *kataba* in Classical Arabic. The first two *a*'s indicate active voice and the perfective status of this form and the suffix *a* indicates the 3rd person masculine singular.¹⁶

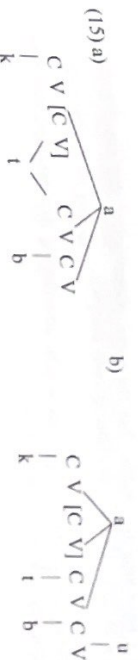


Causative is expressed by the gemination of C₂ (e.g. *katatiba* 'he has caused to write'), reciprocal by the gemination of V₁ (e.g. *katatibu* 'they have written to each other') etc.

¹⁴ The Reduction Principle will be discussed in more details in the next section.

¹⁵ See Scher (2001) for a discussion of the same issue and for the use of templates in Czech.

¹⁶ The structures of the Arabic words, which contain a [C V] with or without association to a segment, are those proposed by Lowenstamm (1996, 1999).



This means that what characterises templatic languages is that words are composed of a fixed number of syllabic positions and morphology is expressed by the association conventions (e.g. gemination of C₂ for causative, gemination of V₁ for reciprocal etc.).

In Turkish, the situation is different from that in Semitic languages. One could say that one property those languages share is the length of a minimal word. While in Semitic a regular root is expressed with minimally three consonants, in Turkish the shape of a minimal word is (C)VC or (C)V: (C)V words, like *su* 'water', *bu* 'this', *su* 'that', *o* 'he/she/it', are extremely rare and, except for *su*, we observe the appearance of a 'buffer' consonant when suffixes are added (e.g. *onlar* 'they', *hunklar* 'these', *sunlar* 'those'). But the similarity between the Semitic languages and Turkish almost ends there in that morphology is expressed in a different manner. In agglutinative languages morphology is generally expressed by the affixation of suffixes and not by a change in the association of segments to positions. Reciprocal, for example, does not change the shape of a Turkish root. It is either expressed by reduplicating the word and inflecting it (e.g. (*bir* 'one'), *birbir-imiz* 'each other I' pl'), or by adding the suffix -(I)ys to a verb (e.g. *öp* 'to kiss', *öp-üys* 'to kiss each other'). Turkish does show 'vowel lengthening' and 'gemination', but those processes are restricted to certain words and are triggered by the addition of suffixes.¹⁷ The two processes do not convey any semantic change (e.g. *hak* 'right', *hakkin* 'your right' vs *yük* 'load', *yükün* 'your load', *meram* 'intention', *meramin* 'your intention' vs *adam* 'man', *adamin* 'your man').

If one understands templatic to mean that words are composed of a fixed number of syllabic positions, then languages like Arabic and Turkish are similar. If, however, templatic is understood to mean the way morphology is expressed, then agglutinative and non-concatenative languages are different.

In the analysis to follow, I assume that templatic refers to morphology and domains to the structure of words, i.e. to the fixed number of positions composing words. This means that while Turkish languages are not morphologically templatic like the Semitic languages, what those languages share is their words being composed of domains. I therefore propose that Turkish words are composed of domains instead of templates. Those domains have a fixed phonological structure: they are composed of two onset-nucleus pairs; they support both the stems and the affixes. There is no one-to-one relation between phonological domains and morphological categories in the sense that both stems and suffixes may be composed of more than one phonological domain. Moreover, as we will see in the next section, and in accordance with the claim made by Kaye (1995) that non-analytic morphology is invisible to the phonology, a word like *hadi* 'honey acc.', which is morphologically complex in that it is composed of a

¹⁷ I use the terms "vowel lengthening" and "gemination" in a purely descriptive sense. Recall that we have seen earlier that the long/short vowel alternation for example, is in fact a process of vowel shortening.

stem and a (non-analytic) suffix, has the same phonological domain-structure as a word like *kedî* 'cat', which is morphologically simplex.

I now turn to my analysis of Turkish words, considering first how the domains are morphologically attached to each other.

3.1 Morpho-phonological complexity

Following Kaye (1995), morphology can be analytic or non-analytic.¹⁸ Relevant to the present discussion is the analytic type of morphology, that is, morphologically complex forms. One type of analytic morphology is the compound type, which consists of taking two morphemes A and B and incorporating them into a structure of the form $[[A][B]]$. This is the structure of most compounds and it consists of three domains: domain A, B and AB (e.g. $[[demir][kapı]]$ 'door' $[[demir][kapı]]$ 'iron door', $[[altın][yüzük]]$ 'gold(en) ring', $[[altın][yüzük]]$ 'golden ring').¹⁹

The second type of analytic morphology consists of taking two morphemes and incorporating them into a structure of the form $[[A]B]$. Unlike compounds, which are formed of three domains, suffix-type analytic forms consist of two domains A and AB. B is a suffix and as such is not an independent domain (e.g. $[[ev]ler]$ 'houses').

I propose that the (phonological) domains making up Turkish words involve the suffix type of analytic morphology. The first domain consists of two onset-nucleus pairs. We apply phonology to this domain, we add a dependent domain B and we apply phonology to the new domain AB. Let us consider the details of this proposal.

Starting with the stem or inner domain, I fully agree with Denwood that it consists of two onset-nucleus pairs with the final nucleus being lexically empty and p-licensed (i.e. un-interpreted) unless it must act as the proper governor for its onset. I propose similar structures for the words *ev* 'house' and *dağ* [da:] 'mountain', except that, as will be shortly justified, I see no reason to propose that a domain always consists of four skeletal positions. I propose that a domain consists of two onset-nucleus pairs and that some empty onsets are pointless and some others dominate a skeletal point (i.e. h-aspiré type of empty onset).²⁰ In other words, while it is justified to claim that the Turkish *yünüksak ge*, the so-called 'soft g', has the representation of an empty onset with a skeletal point (the position is realised as $[ɣ]$ in certain dialects and in those dialects where it is not realised, the result is a sequence of two vowels and not a long vowel), I see no reason why words beginning with a vowel, for example, do not

have a pointless empty onset. Unless empirically and theoretically justified, I propose that empty onsets are pointless.

- (16) a) $O_1 N_1 \quad | \quad O_2 N_2$ b) $O_1 N_1 \quad O_2 N_2$
 | | | | | | | |
 [x x x x] [x x x x]
 | | | | | | | |
 e v

Given that the final nucleus of a stem domain is lexically empty and p-licensed (cf. 16a) unless this nucleus properly governs its onset (cf. 16b), polysyllabic words ending in a vowel consist of a sequence of domains. The structure of *arav* 'interval', *arî* 'bee' and *ar* 'shame' are given below.

- (17) a) $O_1 N_1 \quad O_2 N_2 \quad O_3 N_3 \quad O_4 N_4$ b) $O_1 N_1 \quad O_2 N_2 \quad O_3 N_3 \quad O_4 N_4$
 | | | | | | | | | | | | | |
 [[x x x x] [x x x x] [[x x x x] [x x x x]]
 | | | | | | | | | | | | | |
 a r
- c) $O_1 N_1 \quad O_2 N_2$
 | | | |
 [x x x x]
 | | | |
 a r

A stem-dependent domain, like a stem-domain, is composed of two ON pairs. In both (17a & b) the final nucleus of the stem-dependent domain, N_4 , is lexically empty and p-licensed and the one to its left, N_3 , is either lexically filled (e.g. *arav*) or lexically empty (e.g. *arî*). When the first nucleus of the stem-dependent domain is lexically empty, it fails to be p-licensed because its potential proper governor is itself p-licensed in domain-final position.²¹ As for the onsets, they can be filled (O_3 in *askî* 'hanger' given in 18a) or empty (O_3 in *kedî* 'cat' given in 18b).

- (18) a) $O_1 N_1 \quad O_2 N_2 \quad O_3 N_3 \quad O_4 N_4$ b) $O_1 N_1 \quad O_2 N_2 \quad O_3 N_3 \quad O_4 N_4$
 | | | | | | | | | | | | | |
 [[x x x x] x x [[x x x x] x x x] [x x x x] [x x x x]
 | | | | | | | | | | | | | |
 a s k [i] k e d [i]

At this point I must mention that in the structures given above in (17a, b) and (18b), the context for the application of the Principle of Reduction (Gussmann & Kaye 1993) is met.²²

¹⁸ The difference between non-analytic and analytic morphology is that the former type of morphology is invisible to the phonology, in that it does not carry domains to the phonology, while the latter type does carry domains to the phonology and preserve the integrity of the internal domains (e.g. the suffix *-ad* in English is non-analytic and the suffix *-hood* is analytic). The reader is referred to Kaye (1995) for full details.

¹⁹ Note that the two terms of a compound are not harmonic ($[[demir][kapı]]$, $*[[demir][kepill]]$ 'iron door'). This is one of the reasons we conclude that stems and suffixes do not involve the compound type of analytic morphology, namely, harmony does not apply across word-domains. Put in another way, the fact that suffixes are (almost) always harmonic with the stems is evidence that they are morphologically different from compounds.

²⁰ Interestingly, in a recent article Denwood has reversed her analysis of *k-* – a alternation in Turkish and has independently reached the conclusion that some onsets dominate a skeletal point while others do not. The reader is referred to Denwood (2002) for details.

²¹ I will come back to the question as to whether the sequence of nuclei in the stem-dependent domain does or does not result in a violation of OCP.

²² I understand Reduction to mean that when an empty nucleus finds itself adjacent to another nuclear point, it results an OCP violation which is resolved by the loss of the empty nucleus occurring on the left.

- (19) Reduction
An empty nucleus followed by a pointless onset are removed from any phonological representation in which they occur. (Gussmann & Kaye 1993:433)

Taking (18b) as an example, the word is composed of an inner domain which ends in a p-licensed empty nucleus. When the dependent domain is attached, this (stem) domain-final empty nucleus finds itself followed by a pointless empty onset. This is the context for the Principle of Reduction to apply and the final (empty) nucleus of the inner domain, N_2 , and the first (pointless) onset of the dependent domain, O_2 , are removed from the representation. The question is now, are the first empty nucleus, N_1 , and the following pointless onset, O_1 , occurring in the dependent domain also subject to reduction and removed from the representation? I claim that they are not and propose that the p-licensing status of an empty nucleus has a crucial role to play in reduction. Namely, while a p-licensed empty nucleus followed by a pointless onset are subject to reduction, a non p-licensed empty nucleus followed by a pointless onset are not. The definition should therefore read:

- (20) Reduction
A p-licensed empty nucleus followed by a pointless onset are removed from any phonological representation in which they occur.²³

While the status of the empty nuclei might not have been relevant in their analysis of Polish, it is, as we will shortly see, crucial when one looks at Turkish. Re-considering the structure given in (18b), reduction will remove from the representation the final nucleus of the first domain, N_2 , and the first onset of the second domain, O_2 . No reduction will affect the second nucleus, N_1 , and second onset, O_1 , of 'domain B', since N_1 fails to be p-licensed. The application of the reduction principle results in the representation given in (21b).

- (21) a) O_1 N_1 O_2 N_2 O_3 N_3 O_4 N_4 b) O_1 N_1 O_2 N_3 O_4 N_4
 | | | | | | | | | | | | | | | |
 [[x x x x̄] x x̄] [x x x x x̄]
 | | | | | | | | | | | |
 k e d [j] k e d [j]

The representation given in (21b) raises two questions: i) doesn't reduction violate the Projection Principle?²⁴ ii) what is the evidence that reduction is sensitive to the p-licensing status of the empty nucleus?, or in other words, doesn't the adjacency of the

²³ Gussmann & Kaye mention that reduction was first suggested by Vergnaud (1982) in his analysis of French feminine morphology. I surmise that Vergnaud would now claim that the nucleus removed from the representation could be unlicensed as the context for reduction would be met in *ta + étaille = l'étaille* the star. However, we can concur with Dinn (p.c.) that French selects the masculine form of the definite article in front of words beginning with a vowel (as it does with the possessive pronoun, *mon étaille*, 'my star'). If the masculine definite article *le* is composed of an onset followed by an empty nucleus, this nucleus would be p-licensed in this context. Note, however, that the loss of the nucleus may as well be the result of an OCP violation since the structural context for reduction is also the context for an OCP violation. I leave this question open and will come back to it shortly.

²⁴ The Projection Principle (Kaye 1995) is similar, although not identical, to the Principle of Syllabic Structure Preservation proposed by Selkirk (1982) and used in other theories.

two nuclear points dominated by N_1 and N_4 result in an OCP violation? (i.e. do N_1 and O_1 undergo reduction?) Let us go investigate.

3.2 Reduction: consequences for the Projection Principle and the OCP
The loss of syllabic constituents as a result of reduction may lead one to believe that it violates the Projection Principle. I claim that it does not and that if it does then OCP is clearly a principle of the grammar which overrides the Projection Principle.

In its original definition (Kaye 1995) the Projection Principle excludes changing governing relations in the course of a derivation (it excludes resyllabification).²⁵ In the cases under consideration, the two constituents which are removed from the structure are a p-licensed empty nucleus and a following pointless empty onset. Those two constituents are not involved in any kind of governing relation. The empty nucleus licenses its onset, it does not govern it. The pointless empty onset having no skeletal point is neither governed, nor licensed by its nucleus. It is present because the theory stipulates that words are composed of sequences of onset-nucleus pairs. What is of importance is that the onset which loses its nucleus (O_2 in (21)), finds another nucleus to license it and that this does not involve a new type of governing relation between two skeletal points. Consequently, since reduction does not involve a change in the type of governing relation between skeletal positions, it therefore does not violate the Projection Principle.

I also claim that reduction does not affect an empty nucleus and a following pointless onset when the nucleus, although lexically empty, is not p-licensed. I will now show how this proposal is empirically justified.

3.2.1 Reduction

Many suffixes in Turkish have different realisations depending on whether they are attached to stems ending in a vowel or in a consonant. I quote Underhill:

Many suffixes in Turkish vary in form according to whether they are attached to a vowel or a consonant... When a suffix basically beginning in a vowel is to be attached to a preceding vowel, either one of the vowels drops out, or a consonant ('buffer consonant') is inserted between the two vowels... For example, the suffix meaning 'I am' has the form *-im* after a consonant, but the form *-yım* after a vowel... We can transcribe this suffix as *-(y)ım*, where the *(y)* in parentheses is present after a vowel but drops after a consonant.

(Underhill 1976:29-30)

I give below some alternating suffixes, i.e. suffixes which in grammars have their first consonant in parentheses.

²⁵ What constitutes a violation of the projection principle/the principle of structure preservation is open to debate. For discussion on these issues, see Harris (1994), Backley (1995) and Takahashi (1996) among others.

- (22) Dative: (y)a 1st sg poss: (l)m 3rd sg poss: (s)l(m) 'to be' 1st sg: (y)lm

ev	'house'	kedı	'cat'
evə	'to the house'	kedıye	'to the cat'
evım	'my house'	kedım	'my cat'
evi	'his/her house'	kedısı	'his/her cat'
evım	'I am a house'	kedıyım	'I am a cat'

I propose that the suffix-initial consonants which are within parentheses in grammars are floating consonants which are part of the suffixes and which attach to an onset when one is available. In (23) I give the form *evə*, **evye* 'to the house'. The concatenation of the suffix to the stem results in reduction (the strike-through constituents are removed from the representation) and as a result the floating element *l* (realised as [y] in an onset) has no onset to attach to.²⁶

- (23)
- | | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| O ₁ | N ₁ | O ₂ | N ₂ | O ₃ | N ₃ | O ₄ | N ₄ |
| l | \| | \| | \| | \| | \| | \| | \| |
| ll | x | x | ξ | l | x | ξ | l |
| | | | | | | | |
| | e | v | | | l | a | |
- evə*

Let us now consider 'to the cat' *kedıye*, **kede*.

- (24)
- a)
- | | | | | | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| O ₁ | N ₁ | O ₂ | N ₂ | O ₃ | N ₃ | O ₄ | N ₄ | O ₅ | N ₅ | O ₆ | N ₆ |
| l | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| |
| lll | x | x | x | ξ | l | x | ξ | l | x | ξ | l |
| | | | | | | | | | | | |
| | k | e | d | | | l | a | | | | |
- kedıye*
- b)
- | | | | | | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| O ₁ | N ₁ | O ₂ | N ₂ | O ₃ | N ₃ | O ₄ | N ₄ | O ₅ | N ₅ | O ₆ | N ₆ |
| l | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| |
| x | x | x | x | x | x | x | ξ | | | | |
| | | | | | | | | | | | |
| | k | e | d | l | a | | | | | | |

In (24a) N₂ and N₄ are empty and p-licensed and the onsets which follow them, O₃ and O₅, are both pointless empty onsets. Those four constituents are subject to reduction and are therefore removed from the representation. As for N₃ and O₄, however, I suggest that they are not affected by the principle of reduction because N₃ fails to be p-licensed. The fact that reduction does not affect those two constituents results in the floating element *l* having an onset, O₄, to associate to.

²⁶ A floating consonant attaches to a pointless empty onset present in the representation. We know from liaison in French, that floating consonants do not attach to onsets which are empty but dominate a skeletal point, that is, there is no liaison with *h*-spirited words (eg. [le ero], *[lezro] 'the heroes'). Based on empirical facts, we assume that the association of a floating consonant to an empty onset triggers the creation of a skeletal position.

The same explanation accounts for the difference in realisation of the 3rd person singular marker (-s)/(n) when suffixed to words of the type *huz* 'ice' and *kuzu* 'lamb', which are realised as *huz* 'his ice' and *kuzusu* 'his lamb' respectively.

- (25)
- a)
- | | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| O ₁ | N ₁ | O ₂ | N ₂ | O ₃ | N ₃ | O ₄ | N ₄ |
| l | \| | \| | \| | \| | \| | \| | \| |
| ll | x | x | x | ξ | l | x | ξ |
| | | | | | | | |
| | b | u | z | | s | l | n |
- b)
- | | | | | | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| O ₁ | N ₁ | O ₂ | N ₂ | O ₃ | N ₃ | O ₄ | N ₄ | O ₅ | N ₅ | O ₆ | N ₆ |
| l | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| |
| lll | x | x | x | ξ | l | x | ξ | l | x | ξ | l |
| | | | | | | | | | | | |
| | k | u | z | | [u] | s | [u] | | | | |

In (25a) N₂ and O₃ undergo reduction, but N₃ and O₄ do not because N₃ is not p-licensed. The loss of O₃ results in the floating *s* of the suffix having no onset to associate to. In (25b) on the other hand, N₂, O₃, N₄ and O₅ are affected by reduction and removed from the representation, while the unlicensed N₃ and the onset O₄ following are not. The presence of O₄ provides a constituent for the floating *s* of the suffix to attach to.²⁷

- (26)
- | | | | | | | | | | | | |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| O ₁ | N ₁ | O ₂ | N ₂ | O ₃ | N ₃ | O ₄ | N ₄ | O ₅ | N ₅ | O ₆ | N ₆ |
| l | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| | \| |
| x | x | x | x | x | x | x | ξ | | | | |
| | | | | | | | | | | | |
| | k | u | z | [u] | s | [u] | | | | | |

Let us now consider if the adjacency of the nuclear points dominated by N₅ and N₆ does or does not result in an OCP violation (i.e. whether or not they undergo reduction).

3.2.2 OCP

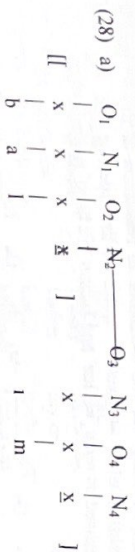
As we have seen, the affixation of certain suffixes results in the interpretation of a "buffer" or floating consonant. Affixation may also result in vowel loss as illustrated in the forms given below.

- (27)
- | | | | | | |
|-------|-------------|-------|------------|-------|----------|
| babba | 'father' | bal | 'honey' | göz | 'eye' |
| babam | 'my father' | balım | 'my honey' | gözüm | 'my eye' |

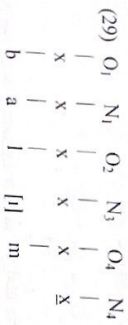
The 1st person possessive pronoun is realised as -ım when attached to a stem ending in a consonant and as -ım when suffixed to a stem ending in a vowel. Unlike the 3rd person possessive pronoun, it does not have a floating consonant in its representation.²⁸ Let us look at the representation of *bal-ım* and *babu-m* (**babam*).

²⁷ I will shortly consider why the floating *n* does not attach to the last onset.

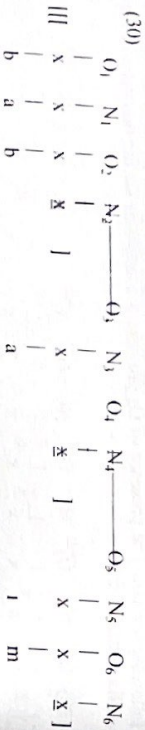
²⁸ While the 1st person possessive pronoun does not have an initial floating consonant and we see an apparent loss of the suffix-initial vowel when the suffix is attached to a stem ending in a vowel, (e.g. *kedı* 'cat', *kedım* 'my cat'), the 1st person singular 'to be' does have an initial floating *l* element and



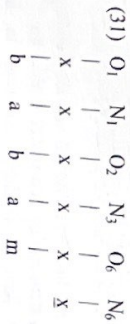
As we can see, the structure of the 1st person possessive pronoun consists of two onset-nucleus pairs. The first onset is empty and pointless, the first nucleus is empty and fails to be p-licensed, the second onset dominates *m* and the final nucleus is empty and p-licensed by virtue of occurring in domain-final position. N₂ and O₃ undergo reduction resulting in the following representation:



As for *babam*, it has the following representation:



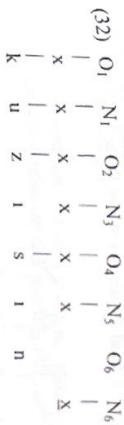
Relevant to the present discussion about OCP is that the loss of N₄ and O₅, which undergo reduction, results in N₃ and N₅ being adjacent at the skeletal level (i.e. at P₀). Since we know that 'my father' is *babam* and not *babaim*, we know that the nuclear sequence must violate OCP. No floating consonant is present to separate the two nuclei and as a consequence the nuclear adjacency results in nuclear deletion (in this case the nucleus on the right, N₅, is removed from the representation). In examples of the type of (30), the two nuclei involved in the OCP violation are both unlicensed: N₃ by virtue of being lexically filled and N₅ because it fails to be properly governed. We should therefore establish that OCP is a principle of the grammar and that it affects nuclear sequences regardless of the licensing status of the nuclei involved.²⁹ After reduction and nuclear loss, the structure of *babam* is:



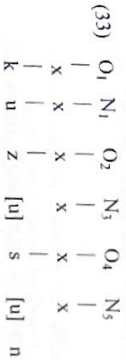
²⁹ Instead of vowel loss, we see the appearance of a 'buffer' consonant (e.g. *kadı́ 'cat', kadı́ym '1 am a cat', yiv 'well', diyim '1 am well'*).

³⁰ If unlicensed nuclei are subject to OCP we expect p-licensed ones to also be subject to the principle.

Having started the discussion on OCP while considering the word *kuzusu* 'his lamb', let us reconsider this structure after reduction has applied but before nuclear loss due to OCP has:



Having derived *kuzusu*, we left the discussion at the point of considering whether or not N₅ and N₆ violated OCP. Now that we have established that nuclear sequences do violate OCP, we know that N₆ is removed from the representation. The resulting structure after both reduction and nuclear loss is as follows:



The loss of N₆, which triggers the loss of its empty onset O₆, gives us a logical explanation for the fact that the final floating *n* is not interpreted: it has no constituent to attach to. However, this analysis faces problems when another suffix follows the possessive form. While *n* should not have any constituent to link to, it does surface (e.g. *kuzı́-su* 'his/her lamb', *kuzı́-sun-da*, 'on his/her lamb', *kuzı́-sun-a* 'to his/her lamb', *kuzı́-sun-dan* 'from his/her lamb').³⁰

It seems that the only plausible explanation is that *n* is linked to the final onset in the structure of *kuzı́su*, preventing an OCP violation, but that it is mysteriously uninterpreted because it occurs word-finally.

At this point in time I do not fully understand the behaviour of final *n* in the language. With pronouns and suffixes, the final *n* is uninterpreted in final position and surfaces when it is no longer domain-final. At the same time, Turkish has words ending in *n*.³¹

(34) a)

	kuzı́-su	'his lamb'	kuzı́-sun-da	'on his lamb'
	şu	'that'	şun-lar	'those'
	bu	'this'	bun-lar	'these'
	o	'he/she/it'	on-lar	'they'
b)	gelin	'bride'		
	gün	'day'		
	ön	'front'		
	son	'end'		

³⁰ The possibility that the floating nasal links to the first empty onset of the suffix *-a* (and of the suffix *-da* if the first pair of constituents are both empty), would not account for the form *kuzı́sundan* in that *-dan* can only have the structure of two ON pairs with an initial filled onset.

³¹ Asli Gökseel pointed out to me that lexical entries with unrealised final *n* are mainly pronoun-type words.

Given the appearance of *n* when it is no longer in domain-final position, I propose that the floating nasal is linked to a constituent, but that it is mysteriously un-interpreted in domain-final position. It is as if Turkish did not allow floating consonants to link in domain-final position. Therefore, the difference between the words given in (34a & b) above is that the words in (a) contain a final floating *n* while those in (b) end in a lexical nasal.

(35) a)	O ₁	N ₁	O ₂	N ₃	O ₄	N ₅	O ₆	N ₆
	x	x	x	x	x	x	(x)	ɣ
	k	u	z	[u]	s	[u]	(n)	

b)	O ₁	N ₁	O ₂	N ₂
	x	x	x	ɣ
	g	u	n	

In conclusion, in words of the type of *kızıku*, *n* is present in the representation, it prevents an OCP violation and consequently the final nucleus is not removed from the structure.

Let us now turn to another phonological process present in Turkish: vowel-zero alternation, and see how a 'domain structure' accounts for the puzzling facts.

3.3 Vowel-zero alternation

The analysis I will propose for vowel-zero alternations provides, I believe, the main justification for my claim that Turkish words are not made of templates in the sense of Denwood. That is, I will show that it is crucial to allow for two types of empty onsets in Turkish: one type which dominates a skeletal point and a second type which does not.

As mentioned earlier and as illustrated below, vowel-zero alternation takes place in certain words but not in others.

(36)	Word	IPS	Prohibited form	Gloss
a)	burun	burunum	*burunum	'nose'
	geniz	genizim	*genizim	'nasal passage'
	koyun	koyunum	*koyunum	'bosom'
	alın	alınım	*alınım	'forehead'
	devir	devirim	*devirim	'period'
	şehir	şehirim	*şehirim	'city'
b)	koyun	koyunum	*koyunum	'sheep'
	deniz	denizim	*denizim	'sea'
	Nehir	Nehirim	*Nehirim	'Nehir'
	sabun	sabunum	*sabunum	'soap'

All the examples given in (36) have their second nucleus lexically empty.³² In (36a) this empty nucleus is phonetically interpreted when the nucleus following it is p-licensed and cannot properly govern it (e.g. *burun* /burumə/) and it is un-interpreted when it is followed by an unlicensed nucleus which can act as a proper governor (e.g. *burunum* /burunumə/).

The puzzling data are the ones given in (36b). Mysteriously, the empty nucleus fails to be p-licensed despite the fact that it is followed by a potential proper governor.

In a traditional GP analysis, it is quite a challenge to explain why the *u* of *koyun* 'bosom' is un-interpreted in the possessive form (cf. *koyunum* 'my sheep') while in the same context the *u* of *koyun* 'sheep' is interpreted (cf. *koyunum* 'my sheep'). As discussed earlier, since all recessive high vowels are lexically empty, the answer to this problem cannot be that *koyun* 'sheep' has a lexical *u* and that *koyun* 'bosom' has an empty nucleus. Among other reasons this proposal completely fails when the high vowel is *i*.

In the present analysis, however, the difference between the structure of 'bosom' and the one of 'sheep' could simply be that O₂ of 'bosom' is a pointless empty onset while the one of 'sheep' is an empty onset which dominates a skeletal point (i.e. an h-aspiré type O₃ of 'sheep'). Since an empty onset which dominates a skeletal point is subject to ECP, its nucleus will always fail to be p-licensed in order to act as its proper governor.³³ The two structures I propose are given below.

(37) a)	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃	O ₄	N ₄	
	[[x	x	x	ɣ]	x	x	ɣ
	k	o	i			i	n		

b)	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃	O ₄	N ₄
	[[	x	x	x	ɣ	]	x	ɣ
	k	o	i			[u]	n	

sheep

Note that while N₃ fails to be p-licensed in both structures, reduction of N₂ and O₃ applies in (a) but not in (b) given that reduction only applies to pointless empty onsets. The difference between the two structures is revealed when a suffix is added. In (38a) I give the structure of *koyunum* 'my bosom' and in (b) the structure of *koyunum* 'my sheep'.

³² By second nucleus I mean the nucleus which dominates the high vowel and not the final nucleus of the inner domain. That is, I use the term 'second nucleus' in the 'traditional' sense.

³³ See Charate (1991) for a GP analysis of the h-aspiré type of onset in French.

(38)

a)

	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃	O ₄	N ₄	O ₅	N ₅	O ₆	N ₆
|||	x	x	x	ɣ	]	x	x	ɣ	]	x	x	ɣ]
k	o	l	l	l	l	n	n	n	n	l	m	m

b)

	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃	O ₄	N ₄	O ₅	N ₅	O ₆	N ₆
|||	x	x	x	ɣ	]	x	x	ɣ	]	x	x	ɣ]
k	o	l	l	l	l	n	n	n	n	l	m	m

The difference between the structure of 'my bosom' given in (38a) and the one of 'my sheep' given in (38b) is that while in both structures N₅ is a potential proper governor for N₃, p-licensing fails in (b) because N₃ has to properly govern its onset. Only empty constituents which dominate a skeletal point are subject to ECP and only unlicensed nuclei can act as proper governors.

There is another group of words which do not show vowel-zero alternation, i.e. words ending in a high vowel:

(39)

kutu 'box'	kutular	*kutlar	'boxes'
keci 'cat'	keçiler	*keçler	'cats'
kuzu 'lamb'	kuzuda	*kuzda	'on the lamb'
arı 'bee'	arılar	*arılar	'bees'

In line with the analysis of *koyunum*, the lack of vowel-zero alternation in words ending in a high vowel reveals that those words have an h-aspirate type of onset in the initial position of the second domain. If this onset were pointless, as I have assumed so far, we would predict the high vowel to alternate with zero when a suffix is added to the stem.³⁴

(40)

	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃	O ₄	N ₄	O ₅	N ₅	O ₆	N ₆
|||	x	x	x	ɣ	]	x	x	ɣ	]	x	x	ɣ]
k	u	l	l	l	l	n	n	n	n	l	a	r

(loss due to OCP)

³⁴ In Charate (2000), I have proposed that final high vowels do not alternate with zero because they are metrical heads. Indeed, words ending in high vowels, unlike those ending in a low or mid vowel, are always finally stressed. Until I carefully look at secondary stress in Turkish, a possible problem with this proposal is that while *kuzul* has final stress, *kuzular* is stressed on the suffix. Stress mutation is unpredicted if the final *u* of *kuzu* is lexically marked for stress. The possibility remains, however, that while main stress is on the suffix in *kuzular*, the second *u* bears secondary stress, *kuzular*. I therefore leave open the question as to whether words of the type *kuzu* have an h-aspirate type of empty onset, or have the final *u* lexically marked for stress.

We do now understand why the high vowel in words of the type *koyun* 'sheep' and *kuzu* 'lamb' does not alternate with zero and why it does in words of the type *koyun bosom* and *geniz* 'nasal passage'. In the first group of words, the empty nucleus always receives a phonetic interpretation (i.e. it fails to be p-licensed) because it is the proper governor of its onset. In the latter group the empty nucleus does not have to act as a proper governor since its onset is pointless.

The structure I propose for words showing vowel-zero alternation raises an interesting question. The structure is morphologically complex and consequently one may wonder if p-licensing does not violate the Strict Cyclicity Constraint. More precisely, according to SCC, what is done (i.e. phonology) in an earlier domain cannot be undone in the course of a derivation. Relevant to our examples is the p-licensing status of N₃ in forms showing vowel-zero alternation. In the non-inflected form *burun*, for example, N₃ fails to be p-licensed because no proper governor follows it. According to SCC, its p-licensing status should remain unchanged in the course of a derivation, that is, in the larger domain *burunum*. Put another way, since N₃ was unlicensed in its domain, nothing in an outer domain should affect its p-licensing status. More precisely, the lexical nucleus of the plural suffix should not be able to properly govern N₃ since N₃ was unlicensed in its domain.

The question this problem raises is whether or not p-licensing obeys SCC.³⁵ Let us go investigate.

3.3.1 The strict cyclicity constraint

The effect of SCC appears to be clear in Polish and French. Consider the French verb *appeler* 'to call', for example. We observe vowel-zero alternation when we compare the infinitive and imperative forms of this verb.

(41) a)

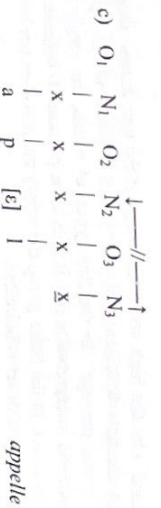
appeler	[aple]	'to call'
appelle	[apel]	'call!'

b)

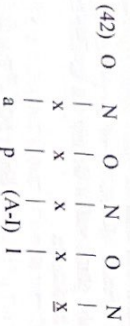
	O ₁	N ₁	O ₂	N ₂	O ₃	N ₃
x	x	x	ɣ	x	x	x
a	p	p	l	l	e	

appeler

³⁵ Interestingly, this problem was addressed by Gussmann & Kaye (1993) in their analysis of Polish verbs. In Polish, unlicensed empty nuclei are spelled out as *ε* and they do not alternate with zero in the course of a derivation, i.e. when a potential proper governor is present in an outer domain. G & K reached the conclusion that only languages like Arabic or European Portuguese, which unlike Polish do not add segmental content to unlicensed empty nuclei, could provide the deciding cases to determine whether or not p-licensing obeys the Strict Cyclicity Constraint. Either it does, or the failure of the verb to alternate with zero in larger domains is due to the fact that unlicensed empty nuclei gain segmental content and, being filled, they are not subject to ECP.

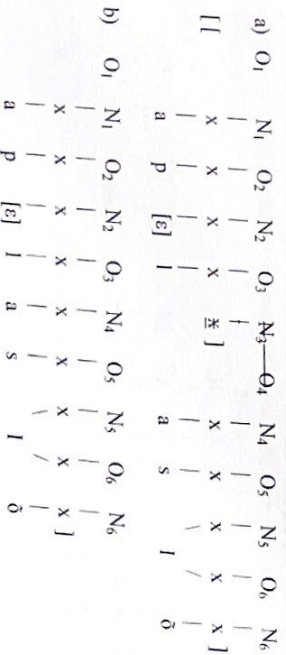


In the infinitive form, N₂ is followed by a lexically filled nucleus which acts as its proper governor. N₂ is p-licensed and un-licensed. In the imperative form, the final nucleus is lexically empty and p-licensed. It cannot properly govern N₂, which is consequently phonetically interpreted. Its realisation as a mid open vowel instead of schwa is a consequence of stress. Schwa is an unlicensed nucleus devoid of elemental content and as such cannot be a metrical head. A metrical head can only be a nucleus with segmental content and this is why material is added to an unlicensed nucleus which bears stress.³⁶



Interestingly, when the nominal suffix *-ation* is added to this verbal stem, N₂ keeps its unlicensed status even though a potential proper governor is now present in the outer domain:

(43) *appellation* [apelasjɔ] * [apelasjɔ] 'term, name'



In the above example, as in Polish, the unlicensed nucleus has gained segmental content (if it hadn't it would be realised as schwa) and its p-licensing status remains unchanged even when after reduction (cf. 43b) there is a potential proper governor for it in the larger domain. This fact seems to indicate that p-licensing does obey SCC.

³⁶ Strangely, while in French an unlicensed empty nucleus which bears stress is realised as [ε] and not as schwa (i.e. content is added to such unlicensed empty nuclei), Turkish does have words with stress on the vowel [ɪ]. Based on these facts, it seems that languages vary as to what kind of phonological expressions can be metrical heads.

However, since we are dealing with an unlicensed empty nucleus which gains segmental content, the question remains: Does this nucleus keep its p-licensing status because p-licensing obeys SCC or because having gained segmental content this nucleus is no longer empty and is therefore not subject to ECP?

I suggest that Turkish is among the languages which can provide the answer to our question. P-licensing, I claim, does not obey SCC and therefore the ε's of French and Polish do not undergo alternation with zero because they are nuclei with segmental content.

In claiming that p-licensing does not obey SCC and that this is why the high vowels of Turkish alternate with zero, I imply that I do not consider harmony to result in a change of representation. Harmony is a matter of interpretation, not of change of representation. A harmonised unlicensed empty nucleus does not gain segmental content. It is simply interpreted as harmonised. If harmony resulted in a nucleus gaining content, the harmonised unlicensed empty nuclei would, as in Polish and French, show no alternation with zero in morphologically complex forms.

In a form like *burnun* 'nose', the structure contains a sequence of three empty nuclei (buro-omə). When this form is spelled out, N₂ and N₄ are interpreted as p-licensed and N₃ as unlicensed. N₁ being a round vowel, the word has a labial interpretation. No elemental content is added to N₂; the word is simply interpreted as harmonic. If this proposal sounds strange, think about a word like *arı* 'bee'. Is it not the case that the sound [ɪ] is simply a matter of interpretation? The unlicensed empty nucleus is spelled out as [ɪ] because there is no source for harmony. If there were, as in *burnun*, then the nucleus would be interpreted as [u].

We therefore have two types of languages: those where unlicensed empty nuclei gain segmental content, i.e. involve a change of representation (e.g. Polish, French when the nucleus bears stress) and those where the failure of p-licensing does not involve a change of representation, but is simply a matter of interpretation (e.g. Turkish, Arabic, European Portuguese, Tangle).³⁷

I therefore conclude that p-licensing does not obey the Strict Cyclicity Constraint. In languages where it seems to, the unlicensed empty nuclei fail to alternate with zero because having gained content they are not empty and consequently not subject to ECP. When unlicensed empty nuclei do not gain segmental content, they are subject to ECP in all domains. We take a form like [[buro] omə] and we interpret it as [burnun]. We take a form like [[[buro] omə] omə] (which is reduced to [[[buro] om] omə]) and we interpret it as [burnum].

In this section we have looked at vowel-zero alternation and showed that it is a manifestation of p-licensing. When an empty nucleus is p-licensed, for example in *burnum* 'my nose', the word has a consonant cluster on the surface. This cluster is broken up when p-licensing fails (e.g. *burnun* 'nose'). However, Turkish has words with consonant clusters which are never broken up by the appearance of a high vowel. It is these words that I consider next.

³⁷ The facts of Tangle are very similar to those of Turkish in that vowel-zero alternation takes place when suffixes are added. The reader is referred to Nikkema (1989) and Characie (1990) for more details.

4 Words with consonant clusters

As the examples given below illustrate, words having a sequence of two consonants are not rare in Turkish.

(44) **hC** bahı 'luck'

lC felç 'paralysis' halk 'people' ilk 'first'

alp 'hero' alt 'bottom'

mC zank 'adhesive' semt 'district'

nC genç 'young' renk 'colour' şans 'luck'

rC borç 'debt' örf 'custom' harf 'letter'

erk 'power' harp 'war' ders 'lesson'

dört 'four' sert 'hard' kart 'state'

sC list 'top'

şC ask 'love'

VC zevk '(good) taste' zevce 'husband'

FC shaft '(mechanical) shaft'

At first glance the above words seem problematic for a 'domain analysis', and especially so when we compare words like:

(45) a) erk 'power' vs b) Erik 'plum'

felç 'paralysis' vs kilic 'sword'

ilk 'first' vs ilk 'luckwarm'

ask 'love' vs ask 'lover'

borç 'debt' vs oruç 'fasting'

which show identical consonants which are adjacent in (45a) and have a high vowel between them in (45b). That is, two identical consonants which are sometimes separated by a p-licensed empty nucleus and sometimes by an unlicensed one. Let us look at those examples in more details.

Putting aside the data given in (45), the first thing to notice is that clusters cannot be of any type. As we can see in (44) those clusters can be made of a continuant followed by a stop. Reversing the order results in an ungrammatical form.

(46) zank 'adhesive' vs lokum 'Turkish delight' *lokum

ask 'love' vs dikiz 'sewing' *dikiz

In GP terms this asymmetry is an indication that the consonants are in a governing relation and that the empty nucleus present between them is p-licensed by virtue of

being in an onset-to-onset governing domain. In our examples, the consonant to the right governs the consonant to its left. When government fails, the empty nucleus is unlicensed and phonetically interpreted.

(47) a) $O_1 \quad N_1 \quad O_2 \quad N_2 \quad O_3 \quad N_3 \quad O_4 \quad N_4$

|| x x x x] x x x]

a | \$ | \$ | \$ | \$ |

ask 'love'

b) $O_1 \quad N_1 \quad O_2 \quad N_2 \quad O_3 \quad N_3 \quad O_4 \quad N_4$

|| x x x x] x x x]

d | | | k | \$ |

dikiş 'sewing'

Going back to those consonant sequences which are at times adjacent and at times not (those given in (45) above), I propose that the difference between them is the nature of the empty onset O_2 . In a form like *erk* 'power', O_2 is empty and pointless. Along with N_2 preceding it, it undergoes reduction and is removed from the representation. k in O_4 governs the preceding r in O_2 and the nucleus within the governing domain is p-licensed.

(48) a) $O_1 \quad N_1 \quad O_2 \quad N_2 \quad O_3 \quad N_3 \quad O_4 \quad N_4$

|| x x x x] x x x]

e | r | k | k |

erk 'love'

In a form like *doruk* 'zenith' on the other hand, O_3 is an h-aspirate type of onset and the nucleus licensing it acts as its proper governor. It is therefore never p-licensed. This is justified by the fact that in this type of words the high vowel does not alternate with zero when a suffix is added (e.g. *doruk* 'zenith', *doruğun* [doruu] **dorku* 'zenith acc.', *kılıç* 'sword', *kılıcım* **kilicim* 'my sword').

(49) a) $O_1 \quad N_1 \quad O_2 \quad N_2 \quad O_3 \quad N_3 \quad O_4 \quad N_4$

|| x x x x] x x x]

k | | | | |

k | | | | |

[i] |

ç

b)

O_1	N_1	O_2	N_2	O_3	N_3	O_4	N_4 — O_5	N_5	O_6	N_6
[[x	x	x	x]	x	x	x	x]	x	x	x]
k	l	l	l	[l]	c			[l]	m	

Like Underhill (1976), I will conclude this article by looking at reduplication, where the facts are delightfully straightforward when one accepts that words are composed of domains.

5 Reduplication

Reduplication is used throughout Turkish. It sometimes involves the repetition of the entire word and sometimes parts of the word. It is this latter prefix type that I will consider. It is used with adjectives, giving them an intensive form with a connotation of completeness. It is formed by reduplicating the first onset-nucleus pair of the adjective and then adding a consonant. This is illustrated below.

(50)	açık temiz siyah yalnız boş belli başka mor yuvartlak taze çabuk düz beyaz kara kırmızı pis uzun yeşil parlak kısa	‘open’ ‘clean’ ‘black’ ‘alone’ ‘empty’ ‘clear’ ‘other’ ‘purple’ ‘round’ ‘fresh’ ‘fast’ ‘flat’ ‘white’ ‘black’ ‘red’ ‘dirty’ ‘long’ ‘green’ ‘bright’ ‘short’	ap-açık ter-temiz sım-siyah yap-yalnız bom-boş bes-belli bam-başka mos-mor yus-yuvartlak tap-taze çar-çabuk düm-düz ben-beyaz kap-kara kip-kırmızı pim-pis up-uzun yem-yeşil pas-parlak kip-kısa	‘wide open’ ‘spotless’ ‘jet black’ ‘completely alone’ ‘completely empty’ ‘obvious’ ‘completely different’ ‘purple all over’ ‘completely round’ ‘very fresh’ ‘very fast’ ‘perfectly flat’ ‘snow white’ ‘very black’ ‘scarlet red’ ‘extremely dirty’ ‘extremely long’ ‘extremely green’ ‘extremely bright’ ‘extremely short’
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To quote Underhill:

The reduplication is made by repeating the first consonant and vowel of the adjective, followed by a consonant that can be m, p, r or s. The choice of consonant is fixed for each adjective... The consonant can be predicted to a very limited extent. All adjectives that begin in a vowel use p... The reduplicating syllable may not end with the same consonant as either the first of the second consonant of the adjective.

(Underhill 1976:437)

What is interesting is that this type of reduplication involves exactly three positions, not two, not one.³⁸ This is exactly in accordance with the structure of the domains which consist of two onset-nucleus pairs. If reduplication had consisted of repeating only the first consonant and the first vowel of the adjective, it would have violated the well-formedness of our stem-domain. I suggest that this type of reduplication involves analytic morphology of the compound type.³⁹ A domain is prefixed to the adjective with the content of O_2 being lexically determined and the content of O_1 and N_1 being identical to those of the adjective.

(51) a)

O	N	O	N	O	N	O	N	O	N
[[x	x	x	x]	[[x	x	x	x]]		
C ₁	V ₁	s		m ₁	o ₁	r			
									[[mos] [mor]]

³⁸ Alex Bellem pointed out to me that reduplication may also involve adding two filled onset-nucleus pairs before the adjective (e.g. *yapa-yalnız* ‘lonely’, *gıpta-gınaltız* ‘in broad daylight’, *dilpe-diz* ‘completely obvious’). Interestingly, it appears that the meaning of this type of prefix is different from the meaning of the CVC type. CVC prefixes are used with adjectives to give a meaning of completeness and CVCV prefixes to give a negative connotation. For example, *yap-yalnız* means ‘completely alone’, but *yapa-yalnız* means ‘lonely’, *diz* ‘flat/straight’ can be reduplicated as *düm-diz* and mean ‘completely flat’, or it can be reduplicated as *dilpe-diz* and used in front of a noun to give a negative connotation (e.g. *dilpediz yılan* ‘completely obvious the’, *dilpediz dolandırıcılık* ‘completely obvious swindle’). I leave the analysis of the CVCV type of reduplication for a future paper.

³⁹ This is justified by the fact that stress falls on the syllable preceding the stem, like in compounds.

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Bidirectional government in strict CV Evidence from English*

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0 Introduction

According to the approach adopted in this paper, phonological and syntactic structures are subject to the same set of principles. The framework is now widely referred to as Strict CV phonology, initiated by Lowenstamm (1996) and developed in various other works, e.g. Lowenstamm (1999), Rowicka (1999), Dienes & Szigetvári (1999), Szigetvári (1999), Dienes (2000), Csides (2001, 2002), Ségéral & Scheer (1999), Scheer (1998, in prep). It must be emphasised, though, that Strict CV phonology is a radical offspring of Government Phonology (GP), initiated by Kaye, Lowenstamm & Vergnaud (1985, 1990), Kaye (1990), Charette (1990), Harris (1990). The theory was further developed and applied to a massive number of languages by – among others – Harris (1992, 1994, 1997), Harris & Gussmann (1998), Brockhaus (1995a, b), Törkenczy (1992), Szigetvári (1994), Cyran (1997), Gussmann (2002), Polgárdi (1998), etc.

In section 1 we will argue against traditional assumptions concerning phonological constituency, tracing the career of the syllable in phonological theory. Section 2 deals with VCV sequences in the light of structural relations proposed to replace traditional syllabic constituents. Section three revisits Csides (2002), and introduces the notion of bidirectional government in phonology along with a distinction between governing relations contracted in the lexicon on the hand, and post-lexically on the other. Section 4 concludes the paper summing the proposals.

1 The rise and fall of the syllable in Generative Phonology

In the following subsections we sketch the development and the demise of the syllable in generative phonology, starting with its 'rise' in classical Generative Phonology, followed by an outline of the basic assumptions of Standard Government Phonology (GP) in 1.2. 1.3 traces the main motivations for getting rid of syllabic constituents.

1.1 The rise: classical Generative Phonology

In SPE (Chomsky & Halle 1968) the concept of syllable enjoyed no theoretical status and phonological generalisations were captured in terms of the re-write rule format.¹ The reason for this was threefold: firstly, finding a uniform phonetic correlate that would correspond to the notion syllable proved to be elusive. Secondly, the shape of possible syllable types is variable from language to language. And thirdly, units larger than a segment were considered to be morphological in nature.

From the mid seventies to the late eighties a radical shift in focus occurred from rules to representations starting with the study of tone languages, Goldsmith (1976), metrical systems, Liberman & Prince (1977), Hogg & McCully (1987), Halle & Vergnaud (1987) and syllable based generalisations Kahn (1976) etc.

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¹ The binary feature [+/-syllabic] employed in SPE separates vowels and syllabic sonorants from all other segments. Therefore, it remains a segmental feature and does not identify the syllable in its entirety.

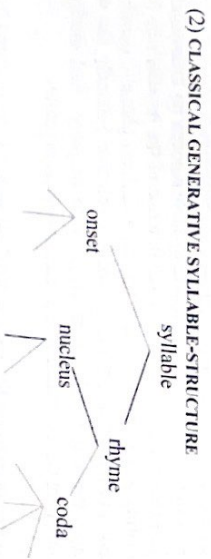
Kahn (1976) claims that a number of generalisations are more elegantly captured if the theoretical notion of syllable is recognized. He claims (1976:20) that 'there exists on the phonetic level, a well-defined unit of perception and production larger than the segment and smaller than the word' and furthermore, that 'this unit plays a very significant role in conditioning distributional statements, sound changes, synchronic phonological rules'. In order to convince the reader Kahn quotes Lightner (1972:333), who observes that rules of the type involving the context in (1) below are common, but C and # do not form a natural class, they involve no common features.

$$(1) \quad \left\{ \begin{array}{l} C \\ \# \end{array} \right\}$$

Kahn rejects Lass' (1971) and Lightner's (1972) proposals to modify the feature system such that the class of consonants and the # boundary would form a natural class because there is no articulatory acoustic/evidence for imposing such features on #. Moreover, a universal set of segmental feature specifications for word-boundary is unrealisable since in English alone there exist both [C, #] and [V, #] rules. Further arguments for not treating boundaries on a par with ordinary phonological segments include the fact that word-boundaries do not appear in focus position in phonological rules. Treating segments and word-boundaries alike would open up the possibility of writing rules that change feature specifications on boundaries.

Kahn (1976:38) introduces a universal convention of syllabic association, which I do not quote here². Kahn has two sets of 'syllabication' rules for English: one for slow speech and another for faster or normal speech, which modifies syllabic structure established during the course of core syllabification in a well-defined way by introducing additional lines of association. Rules capturing phonological generalisations are sprinkled among the syllabification rules proper or ordered after them.

The standard generative format of the (English) syllable that resulted in the wake of Kahn's theory is to be found in, e.g., Lass 1984:252, Durand 1990:204, Giegerich 1992:138, Carr 1993:196, Kenstowicz 1994:253, Roca 1994:141, Blevins 1995:213 and is shown in (2) below.



The works cited above all argue for the necessity of the syllable in as much as they provide a domain for segmental phonological generalisations, rules, constraints, and it is claimed that weight sensitivity of stress systems is more insightfully captured when reference is made to it. Furthermore, many processes were taken to operate in order to

² The interested reader is invited to consult Kahn's original work.

ensure that strings are parsable into well-formed syllables, and some claim that native intuitions also underpin the desirability of the concept.

Several types of syllabic structures have been recognised by authors of various theoretical standing; e.g., a flat structure is argued for by Kahn (1976) and Clements & Keyser (1983), a moraic layered structure by Hyman (1985), strict binary branching of the N-bar kind by Kenstowicz (1994: 253).

Parallel to Kahn, theoreticians investigating phenomena related to stress also criticised the linear, SPE-type approach to phonological processes and strengthened the legitimacy of the syllable as a theoretically desirable, even indispensable construct. Liberman & Prince (1977), Hogg & McCully (1977), Hayes (1982) argue that the re-write rule format fails to capture the generalisation that quantity-sensitive stress systems like English need to make reference to the rhyme. Moreover, they argue that generalisations – like the minimal word constraint in English – which had earlier been captured in terms of morpheme structure conditions, are more insightfully characterised by claiming that the minimal English (content) word must consist of at least a heavy rhyme.

The study of phonotactics and sonority sequencing gave further impetus to the recognition of the syllable. Selkirk (1984:116), e.g., claims that 'in any syllable, there is a segment constituting a sonority peak that is preceded and/or followed by a sequence of segments with progressively decreasing sonority values.'

A number of sonority scales – some universal, some language-specific – have been argued for ever since, all based on different syllable shapes across languages. There have been arguments for deriving such scales in terms of features (Clements 1990), or structurally in terms of unary primes: KLV (1990), Harris (1990, 1994, 1997), Anderson & Ewen (1987). A couple of additional principles of phonology gave further justification for the connection between segment internal organization and syllable shape. The Sonority Dispersion Principle (SDP), Clements (1990), and the Onset Maximisation Principle (OMP) joined Sonority Sequence Generalisations (SSG) in determining possible syllabification and phonotactic constraints.

In the standard generative format, Lass 1984, Anderson & Ewen 1987, Durand 1990, Goldsmith 1990, Giegerich 1992, Carr 1993, Kenstowicz 1994, Roca 1994, Blevins 1995, for example, the length of onsets and codas is rather flexible, syllabification is thus not a trivial procedure. In the vast majority of the works cited above, it is further assumed that the set of word-initial clusters is coextensive with that of legal onsets and the set of word-final clusters coincides with legal codas. Kahn (1976), Blevins (1995). Another tacit assumption behind the standard generative approach to syllabic organisation is the Adjacency Hypothesis, i.e., that surface adjacency necessarily leads to adjacency at all levels of description.

However, Clements (1990) observed that the preferred initial demissyllable maximises the dispersion in sonority, while the preferred final demissyllable minimises the dispersion in sonority. Maximisation of sonority dispersion means that members of the demissyllable are evenly distributed on the sonority scale, i.e., an ideal initial demissyllable is an obstruent followed by a vowel. Minimisation of sonority dispersion means that it is best not to have a coda at all or have very sonorous

segments in it. The OMP is a derivative of the Sonority Dispersion Principle (SDP); it is preferable not to have a coda and also to have an onset and thereby a large, or at least some, sonority distance in the onset-nucleus sequence.

The above-mentioned principles may also lead to conflicting possible analyses. For example, in the case of a sequence like *alla* both the SDP and the OMP dictates *alla*. English, however, syllabifies the sequence as *al.la* since /l/ is not found word-initially and so it cannot be a branching onset. Furthermore, /l/ behaves differently before /l/ and /r/ (e.g. with respect to glotaling). The worst possible parsing is *al.la* as it violates the SSG, the SDP and the OMP at the same time. A natural conclusion then is to abandon the adjacency hypothesis since it ultimately results in dispreferred syllable structure, awkward contacts and an unbelievable complexity and number of syllable types. The price to pay for these simplifications is allowing a tiny bit of abstraction into our model.

1.2. On the decline: standard Government Phonology (GP)

KLIV (1990), Kaye (1990), Charvát (1990, 1991), Harris (1990, 1992, 1994, 1997), Ryan (1998), Brockhaus (1995), Törkency (1992), Szigetvári (1994), Kiss (1997), Kúri (1999) and Gussmann (2002), among others, subscribe to a view that the syllable per se plays no significant role in capturing phonological generalisations.

Although there are syllabic constituents in the framework, there is no independent syllable node since there is no evidence for it, cf. Kaye (1990), and the syllable does not participate in prosodic processes, cf. Takahashi (1993). The fact that in general any well-formed onset may be followed by any well-formed rhyme further undermines the viability of an independent syllable node and is referred to as the principle of free co-occurrence by Kaye (1995).

Harris (1994:42) notes that phonological phenomena are adequately characterized in terms of constituent structure but also that these phenomena make no reference to the syllable node. Moreover Harris (1994:45) claims that 'the quantity facts support the onset-rhyme dichotomy but are silent on the question of whether it is necessary to recognize the syllable as an autonomous constituent'. He also adds that 'in fact none of the phonological phenomena need make reference directly to the syllable node'.

Another argument against the syllable as an autonomous level of linguistic description comes from the fact that in classical generative phonology word-edges were believed to coincide with syllable margins and well-formed phonological words were claimed to be segmentable into well-formed syllables. If, however, syllable structure and word structure coincide so neatly, then either one or the other is absolutely superfluous as a domain of phonological generalisations. This takes us to the famous duplication problem of Occam's razor. Since there is independent morpho-syntactic motivation for word-structure in the form of morpheme structure conditions, it is quite obvious which one of the two must be banished from the phonological vocabulary.

Furthermore, subsequent research into phonotactics has shown that the traditional stance of equating word-structure with syllable structure is untenable anyway, since segmental sequences occurring word-marginally and word-internally do not coincide. One notorious case involves *sC* clusters, cf. Lowenstamm (1981:598). For example,

the conflicting stress pattern in English *Alaska asphaltista* vs. *industry minister* shows that the syllabification of such clusters is not at all trivial. Italian open-syllable lengthening *vīna* as opposed to *vīna. vīsta*, French closed syllable adjustment, e.g. lengthening *vīna* as opposed to *vīna. vīsta*, all seem to support the view. Spanish epenthetic *e* in *extradio* (cf. Italian *stadio*), all seem to support the conclusion that *sC* sequences do not form a branching constituent. This conclusion is further strengthened by the phonotactics of coda-onset type voice assimilation characteristic of *sp. sl, sk*, the unprecedented distributional freedom in the second position of *sC* clusters, and also by the fact that *s* blatantly upsets sonority sequencing of any flavour. The homorganicity of *sl* and *sr*, e.g., and the distribution of the complex expression *fur/* in English again bolster the view that *s* is not a very welcome guest as the first member of a branching onset.

These observations have increasingly convinced phonologists to abandon the native view that syllable-initial and word-initial clusters are coextensive. The available phonological evidence suggests that syllable-initial consonants are possible word-initially but the reverse generalisation does not necessarily hold. That is, not all word-initial clusters automatically qualify as sound branching onsets.

As for rhymes, it must be mentioned that the main phonotactic interaction between the nucleus and the following consonant is roughly that of length restrictions. Harris (1990) points out that there are very few qualitative phonotactic restrictions that apply to VC clusters within the rhyme. We find a couple of qualitative restrictions in this context, though, also noted by Szigetvári (2000). For example, no non-coronal clusters is possible after [au] in English, cf. Harris (1990); no non-round vowels may occur before word-final labial nasal+stop clusters in Hungarian, cf. Törkency (1994:338); only [a] is possible before a word-final lateral liquid + palatal stop cluster in Hungarian, cf. Sipár & Törkency (2000). It is generally assumed that the vast majority of such VC restrictions is the result of historical coincidence and cannot be pinned down to any deep-seated phonological generalisation.

There are, however, fairly strong phonotactic dependencies between members of a branching nucleus. Harris (1994) points out that melodic material associated to long vowels is lexically lodged into the left-hand position whence it spreads into the second (rightmost) position. Furthermore, the distributional possibilities in the second position of heavy diphthongs are tightly constrained: in English, for example, only the three off-glides may occur in this context. These two observations mean that the first (dominant) skeletal position of the nucleus reduces the set of possible choices in the second.

Just as the concept of 'syllable' is reduced to the status of an informal label in GP, so does the 'coda' qualify only as an informal label for the post-nuclear portion within the rhyme. Since it never branches, it may not be viewed as a constituent, but forms a governing relation with the following onset consonant. If there is no such onset consonant, the coda position is rendered illegal according to the Coda Licensing Principle, cf. Kaye (1990). According to Harris (1994), in an optimal coda-onset cluster, the first consonant is no less sonorous than the second, and a typical coda-onset cluster displays a falling sonority profile. Furthermore, in a prototypical coda-onset cluster the identity of the second consonant (partially) determines the identity of the first, cf. the case of nasal plus obstruent clusters in, e.g., Kiss (1997).

By recognising the possibility of empty positions on the skeleton, GP opens up the way of analysing consonantal sequences in more than one way. On the one hand, real clusters are claimed to be adjacent both lexically and also at the level of phonetic interpretation. The other possibility is analysing them as non-clusters at the lexical level. Such structural entities are referred to as 'bogus' clusters by Harris (1994), and can be exemplified by *θ*, as in *athlete*, *catholic* etc. The primary motivation for such onset plus onset sequences is lack of phonotactic interaction between the parties of these surface adjacent consonant sequences. Another motivation commonly invoked in favour of this analysis is the fact that the empty skeletal position deployed in between members of a bogus cluster frequently serves as a site for vowel-zero alternation.

Having made a short excursus on why the syllable is not a serious candidate for official recognition in GP, and having seen some arguments for the possible 'sub-syllabic' constituents, let us summon further arguments against the simplistic view that word margins and 'syllable' margins necessarily coincide.

Turning first to word-final position, one may wonder why not all consonants that may turn up before other consonants word-internally may also turn up word-finally. It is enough to mention but Italian, where there are word-internal, pre-consonantal consonants but no word-final consonants at all. The opposite situation also obtains, this time in English, where, e.g., possible final consonants often may not occupy word-internal, pre-consonantal position, cf. /θ/ and the affricates. Furthermore, Hayes (1982) and Hogg & McCully (1987) observe that word-final consonants do not count for syllable heaviness in the English Stress Rules for verbs, and label the phenomenon 'consonant extrametricality'. Final consonants are also observed not to cause closed-syllable shortening, which also suggests an extra-rhymal position for them. Such extra-rhymal segmenting earned the label of 'extra-syllabic' consonants in syllable-oriented frameworks. The tacit uneasiness of researchers in the urge of finding a theoretically feasible place of abode for word-final consonants have led to the creation of terms such as 'extraprosodicity', embracing both extrametricality and extrasyllabicity. Standard GP has decided to go a step further, unintentionally giving the first serious blow to constituency by denying the codahood of final consonants. This decision is based on the well-founded assumption that extraprosodicity misses the generalization that word-final consonant clusters in English are – with a few exceptions – the same as intervocalic coda-onset clusters. Harris (1994:74), for example, observes that if the second of a two-member word-final CC is made extraprosodic then the grammar duplicates the phonotactic statements on VC, CV and VC<C># clusters.

The stipulative nature of the claim that syllable boundaries coincide with word-margins can be illustrated with the interesting observation made by Szigetvári (2000), namely that nobody seems to protest that, in general, foot boundaries do not coincide with word boundaries. Why should word-boundaries then coincide with syllable boundaries? Moreover, already in classical syllable-based approaches the onset and the coda could be empty but the nucleus could not since it was assumed to be the head of the syllable, and headless syllables were considered to be structural freaks. Interestingly, at other levels of phonological analysis headless feet and headless segments have both been recognized. As we shall see later, empty consonantal

positions will also be recognized in the theory we put forward here and they will facilitate the description of liaison phenomena.

There is also a theory-internal reason for recognizing degenerate syllables alongside degenerate feet. Vowel-zero alternations of the /jæm/ai//jæm/ii/ type and suffixation of the *shage* – *shaping* type would all involve resyllabification during the course of the analysis violating monotonicity and ultimately the projection principle, a basic tenet of GP.

The excessive generative power of a theory having syllables of an unlimited size also prompted a reaction, and ultimately convinced a sizeable portion of the phonological community that the rejection of empty categories is based on tradition rather than argument.

As Harris (1994) points out, however, empty skeletal positions may not be used as convenient 'phonological seasoning' that can be 'sprinkled over representations' whenever the need arises. The deployment of empty positions must be severely constrained. In order to provide such a tool for licensing empty nuclei, KLV (1990) propose the Empty Category Principle (ECP). Below we give Kaye's (1995:295) formulation of the phonological ECP in (3). This is followed by the definition of proper government in (4) taken from the same source.

(3) **EMPTY CATEGORY PRINCIPLE - KAYE (1995:295)**

- A melodically empty skeletal position remains unpronounced if*
- properly governed*
 - domain-final (parametric)*
 - enclosed within an onset-to-onset governing domain*

(4) **PROPER GOVERNMENT - KAYE (1995:295)**

- A nuclear position α properly governs a nuclear position β iff*
- α is adjacent to β on its projection*
 - α is not itself governed*
 - no governing domain separates α from β*

As can be seen, the phonetic interpretation of empty positions depends largely on syntagmatic relations. In fact, one of the ambitious goals of this paper is to reduce the three clauses of the phonological ECP to a single one. Furthermore, the formulation of Proper Government will also be radically simplified and will be shown to be subject to the same set of principles as Metrical Government.

Domain-final empty nuclei are licensed by the second, rather stipulative clause of the ECP in GP. One of its tasks is to express the conviction that domain-final consonants are not syllabified into a coda position. In classical generative phonology syllabifying word-final consonants into codas seemed rather feasible. According to Ito (1986) and Goldsmith (1990) word-internal codas and word-final consonants are weak prosodic licensors since they allow consonant weakening alike.

Kaye (1990:323) claims that having word-final empty nuclei is distinct from having codas, since the two parameters he proposes produce a cross-classification of language types. Some have codas only medially like Italian, some only word-finally

Like Luo, others have them at both locations (English) or neither (Zulu). The existence of four groups of languages provides further evidence for denying the coda status of word-final consonants. Government Phonology thus reduces the cases where consonants are syllabified into the coda and this is entirely in line with the general view that onsets are to be preferred over codas. These observations take us directly to the question of whether or not the coda exists. Since the optimal final demisyllable is one without a coda, it would come as no surprise if we discovered that codas are not legitimate theoretical entities. If some of the clusters are regarded as coda-onset sequences, while others are treated as bogus clusters, there will be indeterminacy as to how the cluster should be syllabified. Nothing will exclude the syllabification of *allia* as *a/lla*, i.e., there will be no way of knowing whether a cluster that satisfies melodic criteria for coda-onset clusters is to be analysed as coda-onset or as an onset-cluster unless melodic criteria are taken to be solely decisive. Another criterion generally invoked is that of syncope, i.e., clusters hosting a vowel-zero alternation site are by definition regarded as bogus clusters. Even more intriguing is the fact that although some clusters are never broken up by an 'epenthetic' vowel, they may only occur word-medially but not marginally. Moreover, the fact that the vast majority of English syncope-created clusters melodically resemble branching onsets shows that a simplistic criterion relying solely on melodic restrictions is simply untenable.

The least one can say is that the theoretical status of codas has been seriously challenged in Government Phonology and markedness universals indicate that this 'constituent' is very much disfavoured by natural languages. The very marked nature of 'codas' may be further illustrated by the observations formulated in (5) below.

(5) THE MARKEDNESS OF CODAS

- (a) onsets are obligatory in some languages and are never impossible
 (b) codas are never obligatory and in some languages may be impossible

In what follows, I will argue against almost all the principles of standard GP: against strict directionality of government, against strict adjacency, against syllable constituents, against binary branching, and will try to reduce the three different clauses of proper government to a single clause. The framework that will ultimately emerge from the discussion in the following sections is based on a fundamental principle of grammar, that of complementary distribution. We will assume – as a working hypothesis – that the governing potential of nuclei is distributed in a complementary fashion amongst different types of vocalic positions on a strict CV skeleton. These different vocalic positions will be able to target different types of consonantal and vocalic position again in a complementary manner. Furthermore, government will be shown to be bidirectional along with the proposal that there is no difference in the mechanisms that regulate metrical government and proper government respectively.

1.3 The fall: Strict CV, a theory of 'syllable unstructure'³

In this section we adduce further arguments against recognising the syllable as an autonomous constituent in phonological parlance. We introduce the basics of Strict

CV Phonology (henceforth, simply CV) initiated by Lowenstamm (1996) and further developed in various works.⁴

As Szigervári (2000) points out, Strict CV-Phonology, cf. Lowenstamm (1996), turns the preference of the SDP into a constraint since in this framework all 'syllables' have an onset but no coda. If the original Kahnian type of arguments for the coda constituent – that of unifying the contexts that pattern together in phonological phenomena – can be expressed in an alternative manner then no viable argument remains for codas. The concept then, remains a shorthand label like *sentence* in syntax, cf. Szigervári (2000). If, however, the term *coda* is swept out of the technical vocabulary, then it makes no sense to talk about onsets either, since onset-nucleus sequences can just as well be referred to as CV sequences. Consider the representations in (6) below.

(6) HEAVY AND LIGHT SYLLABLES IN CV			
a. light syllable		b. heavy syllable	
		type I	
C	V	C	V
α	β	α	β
		type II	
C	V	C	V
α	β	α	β

The net result of the new approach is that the formulation of the distinction between heavy and light 'syllable' is considerably simplified to the claim that light syllables consist of one, whereas heavy syllables consist of two CV pairs. It also immediately answers the long-standing question of why onsets do not add to syllable weight: since rhymes do not exist, they cannot contribute to weight either. In the realm of English stress assignment, consider the representations in (7) below.

(7) STRESS ASSIGNMENT IN ENGLISH

C	V	C	V	C	V	C	V	C	V	C	V
A	m	e	r	i	c	a	a	g	e	n	d
C	V	C	V	C	V	C	V	C	V	C	V
a	r	e		n	a						

It is obvious from the representations above that – counting empty vocalic positions, too – stress falls on the antepenultimate vocalic position in all the three items. Note that the minimal word-constraint that could earlier be captured only by a disjunction⁵ becomes trivial to express in CV, by claiming that it is at least two CV pairs that may qualify for the status of a minimal content word in English. This necessity may be connected to stress since all content words must have a primary stressed vowel. Stress, however, expresses prosodic prominence reflected in the position's duty to

⁴ These works include, e.g. Lowenstamm (1999), Segéral & Scher (1999), Scher (1998a, 1998b, in prep), Rowicka (1999), Dienes (2000), Dienes & Szigervári (1999), Szigervári (1999, 2000), Balogré (2002), Csides (2000), (2002), Csan (2003), and others.

⁵ Notice that the notion of 'heavy rhyme' also conceals a disjunction, viz., in a heavy rhyme either the nucleus or the rhyme node must branch.

³ The Orwellian Newspeak term 'syllable unstructure' is due to Tobias Scher.

exert its governing potential on another vocalic position. Consider the representations in (8) below.

(8) THE MINIMAL WORD CONSTRAINT IN ENGLISH



As can be seen in (8a) and (8b), the minimal word constraint in English may be reduced to the claim that a minimal English word must contain a governor vocalic position. A governor vocalic position must exert its governing potential on a neighbouring vocalic position. It has two possible choices: either it governs an available full vocalic position (8b), or a following empty vocalic position keeping it silent (8a). In other words, there must be at least one governing relation in a minimal English word.

Lowenstamm (1996:12-13) discusses the issue of closed syllable shortening and comes to the conclusion that the ungrammaticality of *[ka:ɹɪpɪ] and the grammaticality of [kaɹɪpɪ] lend themselves to an easier explanation if the Strict CV framework is adopted. (Consider the representations in (9) below.

(9) CLOSED SYLLABLE SHORTENING



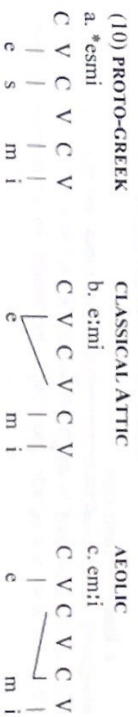
According to Lowenstamm, the second vocalic position of a long vowel is devoid of any melodic content. In order for the second vocalic position to be phonetically interpreted, the melodic content specified in the first position must propagate into the second. The target of spreading – in this framework – must be licensed by proper government, and only right-to-left proper government is possible in Lowenstamm's framework. That is, spreading of melody into the second vocalic position of a long vowel is possible only if the target of spreading is followed by a full vocalic position because only full vocalic positions are able to properly govern. There is, however, a serious theory internal problem with this proposal related to the interpretation of the effects of proper government. More specifically, the phonetic correlate of proper government becomes indeterminate under this proposal, and it suggests that proper government may be invoked whenever the need arises. This is so because the phonetic interpretation of a governed empty vocalic position is silence. Proper government was originally proposed to license empty nuclei, i.e., to legalise the existence of marked vocalic positions. Now, if we are to accept Lowenstamm's idea that proper government may also be invoked to make an otherwise empty vocalic position audible, the phonetic interpreter will find itself in a desperate situation when trying to make sense out of an empty vocalic position hit by proper government. As a result of these observations we will take an alternative route in trying to explain

phenomena related to closed-syllable shortening. Our proposal will be very much like that of Rowicka (1999), and will constitute one of the arguments for the adoption of bidirectional government in phonology.

Szigetvári (2000) also notes that the rhyme maximising analysis of closed-syllable shortening faces a serious challenge if seen as a dynamic process. First, it violates the shortening principle since a coda is not present in the lexical representation and thus projection principle during the derivation. If, however, we cannot create a coda may not be created during the derivation. If, however, we cannot create a coda position in a rhyme containing a branching nucleus, then closed syllable shortening cannot be motivated. This – as we shall see – may be overcome by the CVCV approach.

The CVCV analysis of closed syllables is not fully satisfactory, as it does not show that closed syllable shortening does not take place before any consonant cluster. Clusters created by syncope do not trigger closed syllable shortening, cf. *bakery* [ˈbɛkəri]: according to Lowenstamm's analysis, however, they should, since a coda-onset cluster is never distinguished from a bogus cluster in Lowenstamm (1996). Once again, no shortening applies in English before syncope sites, as is also evidenced by, e.g., *favourite* [ˈfævərɪt]. Furthermore, the occurrence of long vowels before a single word-final consonant, as in Hungarian *csók* [fo:k] 'kiss', will be very difficult to explain without resorting to arbitrary devices. Not only is Lowenstamm's account untenable on theory internal grounds but also it is descriptively inadequate.

Lowenstamm claims that abandoning syllabic constituency brings a welcome simplification in the analysis of compensatory lengthening phenomena when the loss of a consonant is made up for by the propagation of adjacent material. Consider the representations in (10) below: (10c) is easy to handle both in standard GP and in CV, (10b) will be problematic for a framework having codas of any kind. The examples come from Szigetvári (2000).



If compensatory lengthening is seen as a dynamic process, then the standard GP account of (10b) will have to switch the coda position for a nuclear position during the course of the derivation in order to accommodate the intruding vocalic material. This constitutes a violation of the projection principle, the possibility of which does not even arise in the CVCV approach.

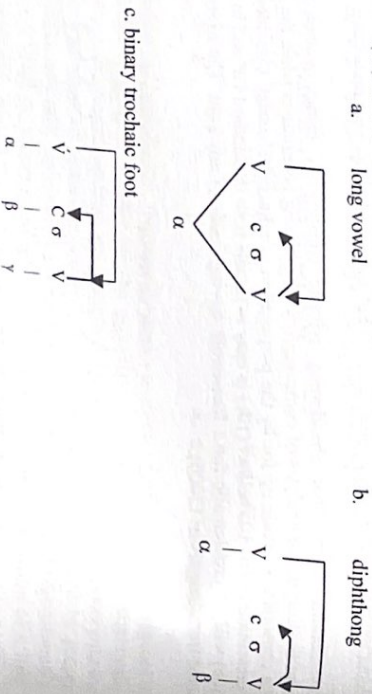
Notice that the rhyme has always been a source of uneasiness in GP, since it is the only constituent that does not exclusively dominate skeletal slots. KLV (1990) reject a branching nucleus within a branching rhyme, a structure that could only exist as a result of a violation of either strict directionality or strict locality in their framework. Harris (1994: 68, 82) relaxes the ban on superheavy rhymes in order to cater for words like *dainty*, *easter*, *basket*, *saint*, *post*, *wild*. All these complications highlight

that either one or the other cornerstone of GP syllabic structure applying to the rhyme constituent must be abandoned in order to attain descriptive adequacy.

The phonetic unity of long vowels has also been invoked as an argument for representing them as binary branching constituents. It must be emphasised here, however, that long (geminate) consonants do not share a constituent but they are parsed into a coda-onset sequence. Therefore, phonetic unity constitutes no argument for parsing long vowels into a branching constituent. Harris (1997) claims that all feet are minimally binary and that the word in many languages consists of a foot'. This suggests that [ataɪ], [aɪ], [a:ɪ] must all consist of a binary foot and no branching rhyme or nucleus is involved in the latter two examples. It must also be noted in passing that branching constituents are also considered more marked than non-branching ones, in other theories, too.

Theoretical uniformity also requires either the retention of constituency throughout syllabic chunks or the abandonment of constituency. This means that a CVC structure must be attributed to branching onsets, too. Branching constituents will thus be reinterpreted as non-branching consonantal and vocalic positions with structural relations between them. One possible way of representing long vowels, diphthongs and binary trochaic feet in this framework is given in (11) below.

(11) LONG VOWELS AND BINARY TROCHAIC FEET



The importance of the representations in (11) lies in the fact that long vowels, diphthongs and binary trochaic feet will receive a uniform representation.

Following the slow but steady demise of the syllable, the task remains to provide a system of structural relations holding between non-branching consonantal and non-branching vocalic positions on a bare skeleton. These structural relations are generally referred to by the terms *government* and *licensing*, taken over from standard Government Phonology (GP). However, these terms receive a new interpretation in the present paper, based originally on the proposal of Ségéral & Scheer (1999:20), quoted in (12) below.

(12) THE INTERPRETATION OF GOVERNMENT AND LICENSING

a. *Proper Government inhibits segmental expression of its target.*
 b. *Licensing comforts segmental expression of its target.*

Dienes & Szigetvári (1999:5) take these proposals of Ségéral & Scheer to their logical conclusion and claim that consonantal positions host segments with consonantal properties, vocalic positions those with vocalic properties, thereby encoding the traditional notion of maximal sonority distance directly in the skeleton. Furthermore, they claim (1999:6) that the 'host of a segment also partly determines its melodic interpretation'. Szigetvári (1999:56) argues that the interpretations in (13) should be attributed to vocalicness vs. consonantalness respectively.

(13) INTERPRETATION OF CONSONANTALNESS AND VOCALICNESS

Vocalicness is loud: V slots of the skeleton aim at being pronounced.
Consonantalness is mute: if nothing intervenes a C position will remain silent.

According to Szigetvári (ibid) 'C positions are not normally left silent because the lexical association of melodic material to a C position means external influence, which normally overrides the slot's inherent affinity to silence'. Szigetvári (1999) also introduces a new definition of government roughly as follows:

(14) DEFINITION OF GOVERNMENT

*Government spoils the inherent properties of its target. A governed C position loses its inherent muteness, it loses its structure properties and becomes louder, that is more vowel-like, more sonorous, it undergoes vocalic lenition, whilst a governed V position loses its inherent loudness and becomes silent.*⁶

Furthermore, Szigetvári (1999:65) argues that it is an inherent property of vocalic positions to govern and license unless they suffer some unfavourable external influence. Government is seen as a form of external influence and thus a governed vocalic position loses its licensing and governing capacity.

It must be noted here that the term *government* will be used in this sense throughout the present paper. Licensing will have a sole function, that of legalising the existence and phonetic interpretation of consonantal positions that occur before vocalic positions.

These two forces thus regulate syntagmatic relations that replace earlier arboreal configurations and affect the phonetic interpretation of melody occurring under the skeleton.

2 Structural relations & Proper Government

In 2.1 below we present a discussion of Dienes & Szigetvári (1999), Szigetvári (1999) and Dienes (2000), concentrating on CODA MIRROR PLUS as it relates to VCV sequences. The representational issues relating to different types of consonant clusters will not be discussed in this paper since it would take us far afield. In 2.2 we consider trochaic proper government based on the proposal of Rowicka (1999). In that section we propose that the stipulative clause making the direction of proper government right-to-left does not necessarily have to be maintained. Based on a number of

⁶ We will later make a distinction between relative silence and absolute silence.

observations, we will argue that Rowicka's (1999) insight that proper government may well be taken to operate in the opposite direction, is not at all unfounded. This section will provide the backdrop to further discussion of government in section 3.

2.1 VCV sequences

The greatest theoretical achievement of Ségéral and Scheer (1999) is that they are able to unify the effects of proper government as a force applying to both vocalic and consonantal positions. However, Szigetvári (1999) points out that despite its achievements, the theory of CODA MIRROR⁷ predicts lenition in both foot-initial and foot-internal intervocalic positions. However, it is by now a phonological commonplace that foot-initial lenition in the majority of languages including English.⁸ In order to express this fact Szigetvári (1999:79) introduces the ANTIPENETRATION CONSTRAINT given in (15) below.

(15) ANTIPENETRATION CONSTRAINT

Government cannot penetrate a stress domain.

Notice that since Dienes & Szigetvári (1999) – henceforth D&S (1999) – repartition the skeleton into VC units, a stress domain – in their theory – begins with a stressed vowel and extends up to the next stressed vowel, where stressed vowels include tertiary stresses. The constraint is essentially designed to account for the lack of pretonic syncope and foot-initial lenition in English and precludes stressed vowels from being able to govern from right-to-left into a preceding stress-domain. However, since all types of government are right-to-left in D&S (1999), they could just as well claim that stressed vowels are unable to govern. They do not, however, make such a strong claim, probably because it would – in their framework – cause a problem for initial edge-marking empty vocalic positions, introduced by Lowenstamm (1999). More precisely, an initial empty vocalic position followed by a contentful consonantal position does not constitute a stress-domain in D&S (1999), and may therefore be silenced by a following stressed vocalic position. In order to illustrate the problem, consider the representations in (16) below.

(16) a. (atom)	b. (at)(omic)	c. vT(om)
V C ≡ V	V C ≡ V	V C ≡ V
æ t ə	m ə t	d m t

D&S (1999), following Ségéral & Scheer (1999), assume that in words like *atom* (16a), the contentful vocalic position governs the preceding consonantal position since government cannot land on a contentful vocalic position. Recall that it was the main achievement of CODA MIRROR to unify the effects of proper government by claiming that it may hit both consonantal and vocalic positions. More precisely, proper government emanating from a vocalic position always tries first to govern the preceding empty vocalic position (17a). If there is no available empty vocalic

position, as in (17b), government is deflected onto the intervening consonantal position.

(17)	a.	b.
	V C σ V	V C σ V
	α β	α β γ

Since CODA MIRROR does not take higher prosodic domains into consideration, it predicts consonant lenition in both foot-internal and foot-initial onsets, a prediction prompting a reversion of D&S (1999) in the form of a constraint in (15) above. As a result, proper government is allowed to take place only foot-internally in the latter framework. Furthermore, it is evident from (16b) that the stressed vocalic position of *atomic* may govern neither the preceding vocalic nor the preceding consonantal position, since in order to do so it would have to traverse into a preceding a stress domain.⁹ Proper government and thus silencing of the initial edge marking empty vocalic position is possible in (16c) since – as noted above – the initial empty vocalic position followed by a consonantal position does not qualify as a stress domain in D&S (1999). This is illustrated by the lack of parantheses around VT in (16c).

There is an alternative policy to be pursued: not postulating initial empty vocalic positions. This, of course, is a retreat to the original assumption that skeletons uniformly begin with a consonantal position. If word-initial empty vocalic positions are not there they do not need to be silenced by government and the Antipenetration Constraint can be done away with altogether.

We could then claim that stressed vocalic positions are just as good governors as their unstressed relatives, in as much as they exert their governing potential on other vocalic positions. These vocalic positions will then be identified as unstressed vocalic positions to their right within the stress-domain, call it the foot. This proposal suggests that unlike licensing, government cannot be made unidirectional. Notice that this move is entirely in line with the interpretation of government proposed by Ségéral & Scheer (1999), D&S (1999). Government spoils the inherent properties of its target. Within the foot then left-to-right government by a stressed vocalic position would cripple the inherent loudness of its unstressed peer(s). This type of government may be referred to as METRICAL GOVERNMENT.

(18) METRICAL GOVERNMENT

A governing relation holding between two contentful vocalic positions is metrical government. Metrical government has phonetic effects similar to proper government.

⁹ Stress domains are indicated by parantheses. I fail to see why the unstressed vocalic position followed by a consonantal position should constitute stress domain in *atomic* (16b). If a stress domain begins with a stressed vowel and extends up to the next stressed vowel, the first pair of parantheses should not exist in (16b) since there is no stressed vowel in the first syllable of *atomic*. Consequently, government by the stressed vocalic position should be able to govern the *t* of *atomic*. This, however, does not take place. For further discussion of this constraint cf. section 3.

⁷ The title of Ségéral & Scheer's paper is 'Coda Mirror'. The theory developed therein has also been referred to under this name.

⁸ This does not entail that there are no examples of foot-initial lenition.

The function of stressed and unstressed vowels with respect to V-to-V government is entirely distinct. Stressed vocalic positions govern contentful vocalic positions (left-to-right) within the trochaic foot and silence them relatively (reduction). Unstressed vowels govern (right-to-left) and thus grant legitimacy to their empty relatives (absolute silence), which is the total spoiling of a position's inherent properties. In the case of V-to-C government again, the two types of contentful¹⁰ vocalic positions may be distinguished. Unstressed vocalic positions will govern preceding contentful or empty consonantal positions and make them more vowel-like, i.e., they will spoil their inherent muteness (spirantisation, voicing, hiatus filling), cf. Szigetvári (1999). Making this distinction between the governing potential of stressed vs. unstressed vocalic positions is based on the hypothesis that government cannot be made unidirectional. We formulate this hypothesis as follows.

(19) **DIRECTIONALITY OF GOVERNMENT IN PHONOLOGY**
Government in phonology is bidirectional.

We formulate our observation concerning the governing function of stressed vs. unstressed vowels as (20) below.

(20) **THE GOVERNING FUNCTION OF STRESSED VS. UNSTRESSED VOWELS**

- a. *Stressed and unstressed vowels have complementary governing potential. Stressed vowels govern only left-to-right; they govern their non-empty peers within trochaic feet silencing them relatively (reduction).*
- b. *Unstressed vowels govern only right-to-left. They govern empty vocalic positions (keeping them silent: syncope), and full (non-empty) consonantal positions (foot-internal intervocalic lenition).*
- c. *Lingoverned empty consonantal positions remain silent, ungoverned empty vocalic positions remain loud unless buried.*

There is a generalisation that can be drawn from (20), which we formulate as (21) below, but which will not be discussed here.

(21) **DOMAIN OF GOVERNMENT AFFECTING MELODIC COMPLEXITY**

The domain of government directly affecting melodic complexity is the foot.

Notice that by adopting (20) and (21), the effects of the Antipenetration Constraint are derived from a fundamental principle of grammar, namely, from the concept of complementary distribution. The governing potential of stressed and unstressed vocalic positions is distributed in a complementary way. We formulate this observation as (22) below.

(22) **COMPLEMENTARY DISTRIBUTION OF GOVERNMENT**

The governing potentials of stressed and unstressed vocalic positions are in complementary distribution.

The nature of the intervocalic context will be further discussed in section 3. We will not discuss representational issues pertaining to different types of consonant clusters

¹⁰ Full in the sense of having melodic material, i.e., non-empty or contentful.

in this paper since it is not directly relevant to the discussion. Let us, however, note that we do not recognise C-to-C governing relations of any kind but assume instead that all empty vocalic positions (including statically empty ones) are controlled by government. For the details cf. Csides (forthcoming).

2.2 Trochaic proper government

2.2.1 Introduction

Rowicka (1999:38) points out that there are a lot of phonological processes that – like proper government – take place at the nuclear projection level but whose head-orientation – the position of the head in relation to the non-head – is not fixed at all. For example, vowel harmony is reported to be head-initial in Hungarian, cf. Vago (1980), Nádassdy and Sipár (1994), Polgárdi (1998), Sipár & Törkenczy (2000), and Turkish, cf. Polgárdi (1998), and head-final in, e.g., Yoruba, cf. Archangeli and Pulleybank (1994). Furthermore, in stress systems both left-headed (trochaic) metrical feet and right-headed (iambic) feet have equally been proposed in the literature. The former is exemplified by English, cf. Liberman & Prince (1977), Selkirk (1984), Halle & Vergnaud (1987), Hogg & McCully (1987), and Dutch, cf. Kager (1989). According to Rowicka (1999), the latter type of stress system is reported to exist in Hixkaryana.

Rowicka (1999:38) also observes that the phonetic correlates of stress are usually considered to be change in pitch, duration and intensity. Moreover, it has also been noted that in the case of trochees the distinction between the head and its dependent is signalled by a difference in relative intensity, whereas in iambic systems the same distinction is reflected in durational terms between the head and the dependent preceding it. This distinction is generally implemented by either lengthening the head or reducing the dependent. Rowicka (1999:ibid) quotes Hayes as referring to this distinction as the **IAMBIC-TROCHAIC LAW**.

Rowicka then goes further to point out that the relation between a contentful vowel and an empty nucleus can be likened to the head and the dependent in a metrical foot, where the dependent is reduced to phonetic zero. It is probably on the basis of these observations that Proper Government has for a long time been viewed as typically iambic. However, a wide range of phonological facts seem to undermine the iambic-trochaic law. Rowicka observes that neither vowel reduction in weak metrical positions nor lengthening in strong positions is a purely iambic phenomenon. Trochaic metrical systems with vowel reduction exist in English, Dutch and late Latin, whereas a paradigm example of a trochaic system lengthening vowels in strong positions is Italian. It must be noted that the status of left-headed feet is more firmly established than that of right-headed ones. This is due to the fact that the trochee is the most common type of foot found cross-linguistically, cf. Rowicka (1999:39). Given these observations, Rowicka (1999:ibid) proposes that an iamb is not a primitive of phonological theory in the way a trochee is, and also that there is no parametric choice between trochaic and iambic feet.

On the basis of the above observations Rowicka concludes that one can expect PG relations also to be left-headed rather than right-headed, contrary to the mainstream GP view of treating this relation as exclusively right-headed, cf. KLV (1990), Charette (1990, 1991), Harris (1990, 1992, 1994, 1997), among others. However, Rowicka notes that Kaye (1986-87) – who himself first uses iambic proper

government in the analysis of Moroccan Arabic data – makes a provision about the parametric nature of head orientation in proper government. Rowicka goes on to propose that proper government is in fact left-headed, i.e. trochaic, and that the new approach associates phonetic interpretation with the head status of surfacing nuclei in PG relations.

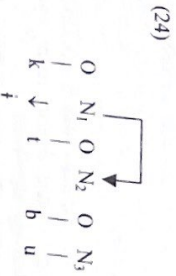
2.2.2 Moroccan Arabic and trochaic PG

Rowicka (1999:40) introduces Kaye's (1992:151-152) analysis of Moroccan Arabic, which exhibits vowel-zero alternation involving the vowel [ʃ]. Consider the following examples:

- (23) a. [ʃan kiʃb]ʰ 'I am writing'
 b. [ʃan kiʃbu:] 'we were writing'

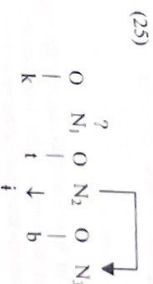
Whether or not an empty nucleus is realised phonetically depends on the nature of the following vowel. In (23b) the final nucleus is lexically contentful, and therefore the preceding nucleus may remain uninterpreted. On the other hand the initial nucleus must receive phonetic realisation because it is followed by a silent nucleus. This is expressed in terms of PG, where the final contentful nucleus is the governor and the preceding empty one is the governee. Roughly the same analysis applies to the sequence in (23a), where, however, an extra device has to be invoked to control the behaviour of the final empty nucleus. The word-final nucleus remains mum in spite of the fact that it is not properly governed since it is not followed by a contentful nucleus. Recall that the silence of word-final empty nuclei is accounted for by an independent clause of the ECP, the domain final licensing parameter. Being itself empty and licensed, the final empty nucleus cannot function as a proper governor for the preceding nucleus and therefore the medial empty nucleus must surface. Having surfaced, however, it can function as a proper governor of the first nucleus between /k/ and /ʃ/ and the string thus surfaces as /kiʃb/.

Kaye's analysis thus requires two separate mechanisms for controlling internal vis-à-vis final empty nuclei: Proper Government on the one hand, and domain-final licensing on the other. One of the original arguments for recognising domain-final licensing as a licensing mechanism distinct from PG is that in a number of languages final empty nuclei may license types of onsets different from those licensed by domain internal empty nuclei. Such an expectation – as Rowicka (1999:41) points out – is unwarranted in Moroccan Arabic since in this language word-final silent empty nuclei have properties no different from word-internal properly governed ones. This – she points out – suggests a possible analysis of what she calls 'ghost vowels' in terms of trochaic PG instead of iambic PG. She proposes the following analysis for [kʃbu:]:



¹¹ It is Rowicka's (1999) convention to indicate vowels alternating with zero by underlining them.

The plural form in (24) contains a sequence of two empty nuclei: if both of them remain silent such a sequence constitutes a lapse, which can be likened to a stress lapse familiar from metrical phonology, cf. e.g. Selkirk (1984). A nuclear lapse of this sort is ill-formed – according to Rowicka – since there is no way in which both empty nuclei can be properly governed. Therefore, N₁ must surface in order to resolve the lapse and function as a head of a proper governing relation. Unlike in standard GP, Rowicka (1999:42) proposes that 'the empty nucleus which acquires phonetic interpretation is not the one that remains without a proper governor, but the one which itself must properly govern.' Rowicka thus also lines up with the received wisdom that governors in a governing relation must be phonetically present. The singular form in (25) also contains a sequence of three empty nuclei, but this time it is the middle one that is phonetically realised.



Rowicka claims that the middle nucleus in (25) surfaces in order to properly govern N₃, the final empty nucleus of the domain. N₁, on the other hand – although remains ungoverned – does not require phonetic interpretation since it is not required to function as a head of a governing domain. This is indicated by a question mark over it. Recall that the standard GP version of the ECP prescribed that every ungoverned nucleus must be audible, and notice that this does not happen to N₁ in (25) above since it has no governing role to assume and therefore no reason to become audible. Moreover, N₁ is not adjacent to any other silent nucleus, it does not create a lapse and – Rowicka argues – that such unpaired empty nuclei may remain silent without being properly governed. Furthermore, the phonetic realisation of the empty nucleus in the middle of the domain is the most economical way of avoiding a nuclear lapse consisting of three empty nuclei.

Rowicka then considers alternative ways of resolving lapses in a three-long empty nucleus sequence, which we will not discuss here due to space limits. Let us conclude this section by noting that the proposal of trochaic proper government sheds light on the fact that right-to-left directionality in the case of proper government is often based on tradition rather than argument.

In the following sections I will try to take a couple of steps further in this direction, and propose that government is indeed bidirectional. This means that we will reject one of the basic tenets of GP, that of strict directionality. In order to be even more heretical, we will also get rid of strict locality in its traditional sense, and will attribute a different interpretation to this notion. Moreover, the arguments to be advanced below are based on the conviction that there is no difference between the principles of metrical phonology and government phonology. Governing relations contracted between vocalic positions may target full and empty vocalic positions alike. The phonetic interpretations of the two relationships will be similar in kind but different in actual implementation, and will boil down to a difference between

relative and absolute silence. We will also see that the targets of different types of governing vocalic positions are in complementary distribution. With this in mind, let us turn to section 3.

3 Licence to properly govern: bidirectional government in English¹²

This section develops the notion of licensed proper government and addresses the issue of why there is no consonant lenition word-initially in English and possibly in a host of other languages.¹³ This task will be carried out through a case study of the distribution of flapped versus aspirated /t/ in General American (GA). Here we shall confine our attention to the absence of lenition: for more extensive discussions of Segetal & Scheer (1999), Scheer (in prep.), Dienes & Szigetvári (1999, 1994, 1997), (1999), Dienes (2000), Csides (2000). Furthermore, we will only concentrate on structural aspects here: for discussions of melody in weak contexts see the works cited above.

3.1 Introduction

Segetal & Scheer (1999) present a theory of lenition building on the theory of Lowenstamm (1996), in which they set out to identify the phonological strong position, where diachronic sound decomposition is claimed to be rare. They identify this position as shown in (26).

(26) CODA MIRROR



As already pointed out in section 2.1 above, the configuration in (26) is referred to as **CODA MIRROR**, supposedly because it is the complementary conjunction to the configuration traditionally¹⁴ used to describe coda-like behaviour. However, it has long been established that the mirror context of (26) cannot be labelled coda since pre-consonantal consonants are not necessarily codas¹⁵ and word final consonants behave as onsets rather than codas. For evidence to this effect cf. Kaye (1990), Harris (1990, 1994, 1997), Harris & Gussmann (1998), Gussmann (2002), Cyran (2003), and the discussion in section 1. Furthermore, as we have seen in section 2.1 above, Coda Mirror does not have anything to say about foot-internal intervocalic lenition sites since this position can be defined only in terms of a domain larger than a syllabic constituent. **CODA MIRROR**, however, confines its attention to the CV skeleton.

Recall that the major achievement of Segetal & Scheer (1999) was to identify two different (antagonistic) forces that drive or inhibit lenition: government and licensing. Government is seen in their framework as a destructive power that reduces a position's capacity of maintaining melodic content. Licensing is the opposite force: it

¹² Bits and pieces of this section have already appeared in Csides (2002). However, the proposals put forward there have been reformulated considerably and the ultimate conclusion of this section is also different.

¹³ It is a phonological commonplace that the word-initial site is less likely to give rise to consonant lenition.

¹⁴ By the term *traditionally*, here I mean pre-government and pre-prosodic tradition such as Chomsky & Halle (1968), e.g.

¹⁵ Witness the case of bogus clusters, e.g. Harris (1994).

reinforces segmental expression: licensed positions are better at holding their lexically specified melodic content. Both forces are claimed to be right-to-left, and it is vocalic positions that license and govern in their framework. In order to facilitate further discussion let us train our sight on the representations below, already discussed in section 2.1, and repeated here as (27) for convenience.¹⁶



In (27a) the first vocalic position is empty, hence governable, while the first vocalic position in (27b) is full hence it rejects government. In the latter case, government originating in the second vocalic position hits the intervening consonantal position since it cannot land on a vocalic position having melodic material.¹⁷

A further stipulation of the model is that unpronounced vocalic positions neither license nor govern. Szigetvári (1999:51) notes that strong consonantal positions in license nor govern. All traditional codas will thus be unlicensed in this either unlicensed or governed. An empty vocalic position, which is incapable of licensing. Furthermore, consonants end up ungoverned if preceded or followed by an empty vocalic position. In the former case because government hits the preceding empty vocalic position as in (27a), in the latter case because the following empty vocalic position is incapable of governing, i.e. is inert. Disregarding 'branching onsets', strong positions are identified as (28).

(28)

STRONG PHONOLOGICAL POSITIONS

- a. onset preceded by a coda
- b. second consonant in a bogus cluster
- c. word-initial onset

For (28c) a word-initial empty cv¹⁸ pair is posited – by Lowenstamm (1999) – whose vocalic part absorbs government emanating from a following active vocalic position. This word-initial empty vocalic position of the cv pair will thus act as a boundary marker.¹⁹ Note that one configuration is logically impossible and is in fact non-existent in this framework: a consonantal position cannot be unlicensed and governed simultaneously. This is because for it to be governed it has to be followed by an active vocalic position, but once a consonantal position is followed by an active vocalic position, this active vocalic position always licenses the preceding vocalic position, thus active vocalic position always licenses the preceding

¹⁶ Single arrows indicate government double arrows indicate licensing.

¹⁷ Note the only difference between proper government and metrical government introduced in section 2. The target of the former is an empty vocalic position while the target of the latter is a contentful vocalic position.

¹⁸ Henceforth, I adopt the convention of indicating empty positions by lower-case letters. This practice was introduced by Dienes & Szigetvári (1999) and has been widely used ever since. This type of notation is equivalent to using upper-case symbols with no melody attached to them, but lower-case symbols are more transparent visually.

¹⁹ These boundary markers allegedly replace traditional morphological boundary markers.

As said above, we propose that proper governors need a licence to govern and this licence is provided by left-to-right metrical government exerted by a stressed vowel within the foot. Anticipating further discussion in 3.2, note that word-initial absence of consonant lenition can precisely be connected to the principle of government licensing. Namely, in a word-initial CV sequence the vocalic position will never be a governor. This is because if this vocalic position is stressed it can only govern left-to-right. If it is unstressed, however, it has no preceding stressed vocalic position from which it could receive governing licence and thus remains a non-governor. It follows from this observation that only government-licensed vocalic positions may properly govern. We formulate this observation as (33) below.

(33) *Proper governors must be licensed to govern by their prosodically dominant peers within the foot.*

Notice also that it is exactly proper government that spoils the inherent silence of the enclosed empty consonantal position in (32a) and (32b) creating a smooth vocalic transition from the first half of the vocalic cluster onto the second.

3.2 The beginning of the word - Balogné (2002)

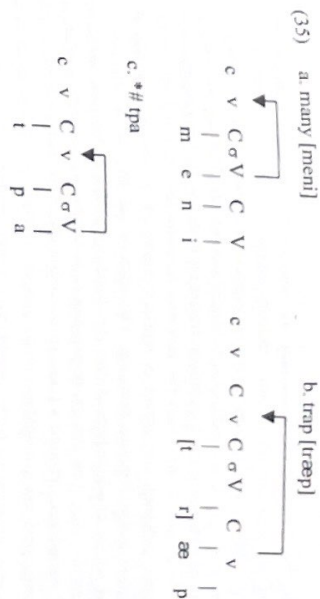
Consider the data below taken from Balogné (2002:2).

- (34) GAFLAPPING - DAVASEE I
 a. [lʰ]: lom, tomorrow
 b. [r]: atom, competitive

The data in (34) illustrate the well-documented phenomenon of GA flapping, whereby word-initial and foot-initial /ts/ get aspirated whereas foot-internal intervocalic /ts/ undergo flapping. According to Lowenstamm (1999), the introduction of syllabic constituency to replace traditional boundary markers and conjunctors like the one in (26) above has no success when facing a process like GA flapping. This is due to the fact that all the /ts/ are syllable onsets in (34), yet the phonology identifies them as two different sites with respect to lenition. It is furthermore obvious that a non-derivational theory coupled with a non-hierarchical representational framework has access neither to rule ordering nor to resyllabification.²² As we have seen, Lowenstamm's framework reduces the phonological hierarchy to strictly alternating consonantal and vocalic positions. In order to avoid making reference to either prosodic hierarchy or morphological boundary markers, Lowenstamm (1999) introduces the empty CV unit at the beginning of the word, which is supposed to replace the traditional # boundary marker.²³ As a result, not only word-medial but also word-initial empty vocalic positions have to be silenced. It must be mentioned in passing, however, that the vocalic part of the word-initial empty CV unit will never be the site of vowel-zero alternation.²⁴ Note that the

²² Works having recourse to traditional prosodic hierarchies make use of these two devices. For treatments of lenition sites in such frameworks see Kahn (1976), Kiparsky (1979), Giegerich (1982), Nespor & Vogel (1986).
²³ The fact that it is no longer morphological material but rather phonological is manifest in the fact that it has phonetic content. The C part of the empty CV unit is inherently silent, whereas its vocalic part is inherently loud requiring proper government to be silenced.
²⁴ This is only true if we do not regard alternation resulting from concatenation and cliticization as true vowel-zero alternation.

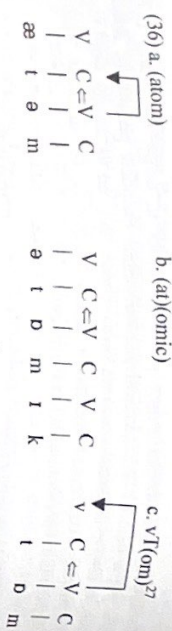
presence of word-initial empty CV units comes in handy for Scheer (1998) in capturing a host of phonological generalisations including phonotactic restrictions. Thus, a single consonant and an onset cluster fall out as natural word-beginning consonantal sequences whereas a bogus cluster is automatically disqualified. Consider the representations in (35) below.



In (35a) the vocalic position dominating [e] silences the empty vocalic position of the word-initial empty CV unit. As a result, the word initial consonantal position is licensed and ungoverned, a configuration under which a consonantal position is said to be strong. In this framework the fact that words can begin with a single consonant is connected precisely to the fact that the full-fledged vocalic position can properly govern the initial vocalic position of the empty CV unit thereby silencing it. According to Scheer (1998) a similar situation obtains in (35b), where the word-initial consonant cluster is such that it forms a closed domain (enclosed in square brackets) and therefore government may again silence the empty vocalic position of the word-initial CV site.²⁵ In (35c), however, the two members of the bogus cluster cannot form a closed domain due to lack of any phonotactic dependencies. The only available means to keep the vocalic position in between the two consonants *mn* is proper government by the vocalic position dominating [a]. Proper government will thus never reach the initial empty vocalic position, and as a result, the prediction is that bogus clusters (and coda-onset clusters for that matter)²⁶ will never be able to surface word-initially. This prediction is borne out by the English data.

The fact that word-initial consonants are less likely to lenite is connected to government, licensing and the existence of the word-initial empty CV unit by Balogné (2002:7) among others. She illustrates her observations with the data under (36).

²⁵ According to Scheer typical onset-like (obstruent plus liquid) clusters constitute a closed domain immune to outside government. Consequently, proper government may skip the entire phonotactic domain, striking the initial empty vocalic position and silencing it. For the details cf. Scheer (1998).
²⁶ In Scheer (1998) coda-onset clusters cannot form a closed domain, and as a result, the empty vocalic position inside a coda-onset cluster may only be silenced by proper government.



In (36a) the foot-internal consonant is both governed and licensed and thus is expected to undergo consonant lenition according to the theory of Dienes & Szigetvári (1999). In (36b) and (36c) the consonantal position dominating the melody represented as [l] finds itself in a strong phonological position. In the former case because the stressed vocalic position (initiating a stress domain) is unable to properly govern (right-to-left) and thus the position remains licensed and ungoverned. In the latter case, although the vowel is stressed again, it is able to properly govern the word-initial empty vocalic position. The idea of the theory of VC phonology that Balogné seems to adopt here is that the word-initial empty vocalic position followed by the word-initial consonantal position does not constitute a stress domain, hence the lack of parentheses around VT in (36c). Recall that if it constituted a stress domain, the vocalic position dominated by [l] would not be able to govern the initial empty vocalic site, since such a move would run against the Antipenetration Constraint (AC) in the framework of Dienes & Szigetvári (1999).

Notice the logical consequences of the proposal: at first sight it would seem that it is only unstressed vowels that have the capacity to properly govern, (36a), whereas stressed ones are deprived of this capacity. (36b). Turning to (36c), however, it turns out that a stressed vowel is also proper governor if not preceded by a stress domain. This means that a stressed vowel can indeed strike out of its own stress domain. In other words, a stressed vowel is capable of governing out of its own stress domain but not into a neighbouring one. To visualise matters, it seems that two brackets (an opening and a closing one) are needed to constitute a buffer to government. Notice that attributing stressed vocalic positions right-to-left proper governing capacity is necessary in this framework, once initial empty vocalic positions are postulated before consonant-initial words that need to be governed in order to remain silent.

Furthermore, Balogné (2002:8ff.) illustrates the shortcomings of the AC by pointing out that stress-sensitivity of flapping vanishes once we extend our investigation beyond the word domain. The data in (37) illustrate that word-final /t/s undergo tapping regardless of whether the next word begins with a stressed or an unstressed vowel. Moreover, word-initial /t/s always remain strong, i.e. aspirated, and word-final /t/s undergo glotalization when they are followed by either a consonant-initial word or a pause. Consider the data taken from Balogné (2002:8).

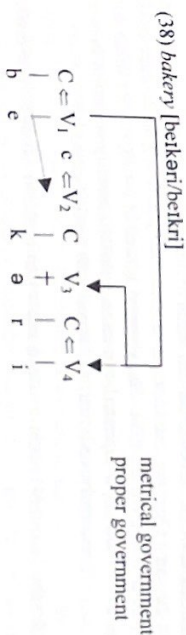
- (37) GA FLAPPING – CROSS WORD EFFECTS
- a. hi[l] Án, hi[l] Ánla, hi[l] me
 - b. grow [h]omatoes

²⁷ Note that Balogné (2002:7) represents *Tom* as (v)om). This representation, however, is not fully consistent with the framework she is describing. Since according to Szigetvári a stress domain starts with the stressed vowel and extends up to the next stressed vowel not including the latter, I fail to see why the entire word *Tom* should be bracketed. Therefore I have chosen to represent *Tom* as V(om).

- c. a [tʰ]issue, a [f]issue
- d. wait [f] a minute

On the basis of the data in (37), Balogné points out that Dienes & Szigetvári's (1999) theory is unable to capture the fact that the stress sensitivity of flapping disappears beyond the word-domain. She goes on to suggest that it is possible to capture the differences between word-internal and cross-word flapping by assuming that government responsible for flapping (i.e. proper government) operates between melodies. While word internally, this does not hold of a word-final /t/ and a vowel both melodically and skeletally, in the latter case the boundary marker will prevent the two initiating the next word. In the latter case the boundary marker will prevent the two segments from being adjacent on the CV tier. This situation will be illustrated below.

Balogné's second suggestion is that stressed vowels – since they seem to support the melodic make-up of a preceding consonant – prefer licensing to government, i.e. if both conditions are met they choose to license. On the other hand, unstressed vowels are more prone to damage the consonant in their CV units and therefore they prefer to govern. In Csides (2000), I connected this skewed propensity of stressed versus unstressed vowels to govern vis-a-vis licence to the principle of government licensing proposed originally by Charrette (1990) for consonantal governing relations. The application of the idea to proper government should be obvious: very broadly, in languages having trochaic feet, for a vocalic position to be able to properly govern from right to left it must receive licence to do so from the dominant vocalic position within the foot. In other words, unstressed vowels acquire the capacity of being able to govern by virtue of being preceded by a stressed vowel within the same foot. The idea is depicted in (38) below.



The representation in (38) shows how metrical government grants a governing licence to the final unstressed vocalic position, so that it can properly govern the position dominating the alternating schwa inside the foot. The concept of government licensing of proper governors derives the same effects as the ANTIPENETRATION CONSTRAINT but from an already existing principle of grammar – that of government licensing – that has been suggested earlier for entirely different purposes. Furthermore, the representation yields an answer to the question of why vowels do not shorten before a syncope site. Naturally, if V₄ has to control V₃, then the empty V₂ remains unaffected by proper government. An ungoverned empty vocalic position, however, is illegal and therefore an alternative repair strategy is required to save the situation. This strategy manifests itself in the form of melody spreading from V₁ onto V₂. In order to account for the data in (37), Balogné (2002:9) proposes the constraint in (39).

(39) A consonant (including both its melodic and skeletal position) cannot be simultaneously governed and licensed by the same vowel.

The representations in (40) illustrate how Balogné (2002:9) chooses to derive the cross-word lenition effect from the observations mentioned above.

(40)	a. atom	b. atómic
	c ← V C V C V	c ← V C ← V C V C V
	← æ t ← ə m	← ə t d m ← i k

According to the proposal, licensing (indicated by the double arrow) takes place on the skeleton, while government (indicated by the single arrow) is a relation between melodies. The word-initial vocalic position dominating /æ/ in (40a) is stressed, so it will first license the preceding empty consonantal position. Since that consonantal position is empty, i.e., it does not interfere with possible relations contracted on the melodic tier, the vowel has the ability to govern some other consonantal material at the melodic level if one becomes available through concatenation. The second vowel, however, being unstressed, will first discharge its governing potential on the consonantal melody represented by /t/, but having done so, it loses its opportunity to do anything else. This is due to the fact that it could only discharge its licensing potential on the preceding consonantal position, which it also governs. This would amount to a violation of (39) above.

In (40b), however, the same word-initial vowel is not stressed, thus – according to Balogné (2002:9) – it tries to govern first, which will not materialise until the word is put into a context by concatenation with a consonant-final word, e.g. *his atomic elements*. In that case government can reach the underlined /t/ and thus it surfaces as a tap. At the same time, the initial empty consonantal position gets its share of licensing since this will not violate (39). The stressed vowel in (40b), on the other hand, will license the /t/ making it aspirated, but cannot simultaneously govern it in accordance with (39); consequently, its governing power will remain unexploited.

Consider the data in (41) below, which show that function words behave differently.

(41) BALOGNÉ (2002:10)

- a. I want you [r]o help me.
- b. Don't lie [r]o me.
- c. [r]^ho tell the truth
- d. [r]^ho tomorrow
- e. see you [r]o tomorrow

The initial /r/ in *to* is only aspirated when at the beginning of the utterance. (41c), otherwise it is flapped when it is preceded by a vowel-final word and therefore appears in the conditioning environment, (41a-b). The flapping cases are accounted for in the framework sketched out by Balogné in the following manner: she proposes that Lowenstamm's empty cv boundary marker only characterises lexical words to the exclusion of function words. Consequently, so the argument goes, words like *to*

lack it, and that is why ...*lie to*... creates exactly the same context for *t* as *atom* does. Balogné (2002:10) illustrates this situation as in (42) below.

(42)	a. atom	b. lie to
	c ← V C V C V	...V c V C V
	← æ t ← ə m	a i t ← ə

The question as to how the boundary marker appears to the left of function words when they appear at the beginning of an utterance as in (41c) now arises. According to Balogné, there are two ways of explaining away this situation: either – as opposed to Lowenstamm's (1999) claim – there is an empty cv unit at the beginning of all types of words, which is deleted in certain environments, or the empty cv unit is indeed absent before function words and is inserted only utterance-initially.²⁸

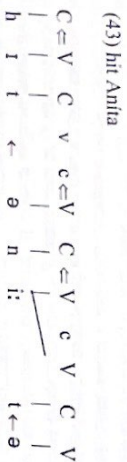
Balogné's (2002) account of the word-initial site needs to be revised for the following three reasons. First, Balogné clearly assumes a temporal sequence of events initiated by vocalic positions, claiming that stressed vowels are prime licensors, which means that only after having attempted to discharge their licensing potential can they govern. In the case of unstressed vowels the opposite situation obtains, viz. they seem to be prime governors, that is, first they try to govern, and only after having attempted to do so are they capable of licensing. It is important to emphasise that her analysis crucially hinges on this distinction. Furthermore, government is assumed to be a relation contracted along the melodic tier, as opposed to licensing, which takes effect on the skeleton. On these assumptions, however, it is difficult to see why (41d) and (41e) should behave differently. More specifically, I do not see why – under the framework outlined above – the initial consonant in *tomorrow* (41d) should not flap. This is because the initial vowel is unstressed in *tomorrow*, which Balogné claims to be a prime governor, i.e. it must first try to govern, and only after having done so should it try to discharge its licensing potential. It comes as a surprise then that the unstressed vowel in the first syllable of *tomorrow* chooses exceptionally to skip the intervening melody of the word-initial /t/, and govern the empty vocalic position of the postulated empty cv unit. What we expect, according to the sketch of the theory, is that the first nonempty (unstressed) vocalic position should indeed govern first, but that the target should be the initial consonantal melody /t/, as government takes place on the melodic tier. This position – being governed – cannot be licensed, since this is excluded by (39) in Balogné's framework. The resulting configuration thus should be one in which the initial consonant of *tomorrow* is governed and unlicensed, and as a result, undergoes flapping */rəmbrou/. This prediction is not borne out, as is illustrated by (41d). Notice furthermore that this prediction is borne out when the same lexical item follows a vowel-final word as in (41e). It is fairly obvious that the conditioning factor has to be searched for in the context preceding the /t/ that shows this anomalous behaviour.

It also remains unclear under the analysis sketched above why the /t/ in the first syllable of *tomato* should be exempt from flapping. Once again, the unstressed vowel

²⁸ Note that in Balogné's framework – as she also points out – a VC analysis fails in either case. This is because in consonant-initial words it is the vocalic position of the first VC unit that functions as a boundary marker (i.e., it absorbs the governing potential of the following nonempty vocalic position). It can never be inserted or deleted, however, since Szigervári (1999) claims VC units to be inseparable.

in the first syllable is a prime governor, i.e., it tries to govern first. Government takes place on the melodic tier, where the vocalic melody is immediately preceded by the consonantal melody of /l/, and thus the latter should be governed, the phonetic manifestation of which is flapping.

Second, if we accept the hypothesis in (39) above, namely that a consonantal position cannot be simultaneously governed and licensed by the same vocalic position, we end up with a configuration in which foot-internal onset consonants will be unlicensed and governed, cf. (40a) above. However, Balogné (2002:6-7) subscribes to the basic tenets of Dienes & Szigetvári's (1999) theory, in which unlicensed and governed consonants should undergo both consonantal and vocalic consonant lenition, i.e., both types of consonant lenition phenomena should be attested in this context. It is worth mentioning here that although Dienes & Szigetvári's theory does not cater for the possibility of consonantal consonant lenition²⁹ in foot-internal intervocalic position, Harris (1994:195) indeed mentions such a system under the heading 'glottaling (wide distribution)':



The third remark is a more general theoretical one, and refers to the requirement of locality in strict CV phonology. It has become a received wisdom amongst CV phonologists that while structural relations are established on the CV skeleton, maximally one position (that of the opposing category) may be skipped, cf. the case of proper government.³⁰ In the case of *hit Anita*, e.g., the two positions, an empty vocalic position followed by the initial empty consonantal position in the next word, will have to be skipped, which represents a departure from the generally recognized notion of locality constraints. Consider to this effect the representation in (43) below.

(43) shows that locality – in the sense introduced above – is lost at the cross-word site above, even if governor and governee are adjacent on the melodic tier. This is not necessarily an unwelcome situation, and I will argue that locality in the traditional sense is simply untenable.

These three observations lead us to modify the analysis proposed by Balogné (2002), incorporating at the same time her insight that governing relations may indeed be established on the melodic tier, and also that a consonantal position may not be governed and licensed by the same vocalic position simultaneously.

3.3 Licence to properly govern

We have seen that both lack of pretonic syncope and absence of foot-initial lenition may be derived from the complementary governing potential of different types of vocalic positions. In any case, a properly governing vocalic position must receive a

²⁹ Recall that this means loss of place contrast without spirantisation or voicing, e.g., glottalization.

³⁰ An exception to this is the case of a closed domain, Scherf (1998), where an entire CVC sequence may be skipped to silence the word-initial empty vocalic position. Cf. also Csides (2000) for a similar approach to both onset and coda clusters.

licence to govern from its prosodically dominant peer within the foot. In other words, it is the recessive vocalic positions that are able to properly govern in the traditional sense, but only by virtue of receiving a licence to do so from their dominant fellow within the foot.

Finally, it must be noted that if these observations are unified with GOVERNMENT LICENSING (Charrett 1990, 1991), the following generalization can be made about phonological strings.

(44) GOVERNMENT LICENSING

All governors must be licensed to govern except the ultimate head of the domain

Let us consider how this proposal can be extended to cover lack of word-initial lenition and the distribution of flapped versus aspirated /t/.

As far as word-internal contexts are concerned we seem to be at ease with the proposal in that proper governors must be licensed to govern by their prosodically dominant neighbours within the foot. The data in (34) above are repeated here as (45) for convenience.

(45) GA FLAPPING – DATASET I

- a. [tʰ] : Tom, tomorrow
- b. [f] : atom, competitive

According to the proposal of licensed proper government, it is easy to see why there is no lenition in (45a). In *Tom*, the stressed vocalic position dominating /b/ can govern only left-to-right (metrical government), and can only license the word-initial /t/. In *tomorrow*, although the first vowel is unstressed, it has no preceding dominant pal which could grant it a government licence and therefore the first /t/ in *tomorrow* can only be licensed, not governed. In (45b) all the three /t/s undergo flapping because all the three /t/s are followed by an unstressed vowel, all of them receiving a government licence from a preceding stressed vocalic position, the head of the foot.

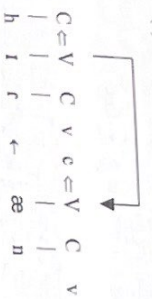
If, however, we extend our investigation beyond the word domain and examine the data in (37), repeated here as (46) for convenience, we have to modify our proposal relaxing the requirement that the government-licensed proper governor should be a recessive position in a trochaic foot across words, too.

(46) GA FLAPPING – CROSS-WORD EFFECTS

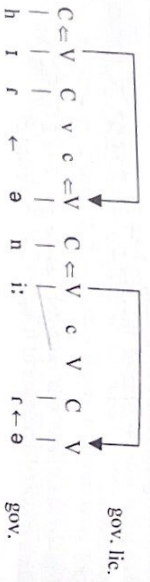
- a. hi[f] ðm, hi[f] Anita, hi[tʰ] me
- b. grow [tʰ]omatoes
- c. a [tʰ]issue, a[f] issue
- d. wait[f] a minute

Examining the first two examples in (46a), we immediately notice that stressed vowels also seem to be able to govern but only in a cross-word context. Consider the representation in (47) below.

(47) (a)



(b)

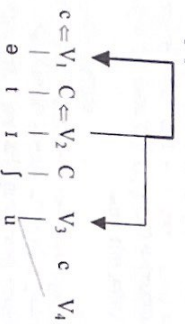


The representations in (47) illustrate government licensing across the word, and subsequent government on the melodic tier. It must also be added that we do not postulate an empty *cv* unit at the beginning of words. We assume that phonological words begin with a consonantal position, even if that position happens to be melodically empty. This issue will not be investigated in this paper.

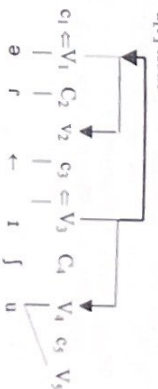
Note also that (47) is based on the assumption that government licensing – due to metrical government – is always a left-to-right relationship. There is, however, no reason to maintain this assumption since it would clearly upset the uniform interpretation of government in (47a), where – although post-lexically – the governed vocalic position would be metrically more prominent than its governor. This is clearly undesirable and completely unnecessary in the light of the bidirectionality hypothesis. We will, therefore, propose an alternative analysis to (47) in (51) below, exploiting a distinction between relations contracted in the lexicon on the one hand, and post-lexically on the other.

In order to anticipate further discussion, consider now the items in (46c)³¹ represented as (48a) and (48b) below, respectively, incorporating the hypothesis of bidirectional government on the one hand, and lexical versus post-lexical governing relations on the other.

(48)³² a. a [tʰ]issue



b. a[r] issue



In (48a) the stressed vocalic position dominating [i] incorporates the first vocalic position of the word-final long [u:] into the metrical hierarchy. Since the second vocalic position of the long vowel is lexically empty and ungoverned, a repair strategy is required to remedy the illegal situation in the form of spreading the melody of /u:/ from V₃ into V₄. Even if the first (stressed) vocalic position could be government-licensed by the vocalic position of the indefinite article, the vocalic position dominating [i] would be a prime licenser since it is stressed. Since this form cannot be treated as a lexicalized sequence the word *issue* will leave the lexicon as an individual item whose initial stressed vowel (not receiving license to govern in the lexicon from a preceding full vocalic position) has by that time licensed the initial consonantal position. As a result, the word-initial consonantal position dominating the melody of [r] leaves the lexicon as a licensed position, and the initial [i] cannot be governed by the following vocalic position, even if that vocalic position would be able to receive license to govern through concatenation. This is due to the fact that the initial [i] is already licensed, and thus cannot be affected by government, since this would violate (39). Notice furthermore, that since the sequence *a[r] issue* may not be treated as a lexicalized form, any governing licensing relation may only be established between article and noun post-lexically. Post-lexically, however, it will be the first vocalic position of the noun (V₂) that will govern the vocalic position of the article (V₁) since the former takes up a more prominent position in the metrical hierarchy. The article – being a sub-minimal form and lacking stress – creates no governing relation in the lexicon. The (V₁) vocalic position of the indefinite article, however, may not properly govern the intervening consonantal position between V₁ and V₂, since the ultimate source of this proper government would be V₂, which has already licensed this consonantal position in the lexicon. Proper government is thus blocked here, since it would lead to a violation of (39) in this extended sense.

In (48b) this problem does not arise, since the skeletal position which is lexically licensed (c₂) and the skeletal position dominating the melody to be governed (C₂) are not identical. As a result, government, i.e. flapping, can take place. Moreover, the intervening empty vocalic position V₂ may also be silenced by proper government coming this time from the contentful vocalic position (V₁) on the left. This latter relationship – as we shall see – is already present in the lexicon.

The item in (46d) is also easy to tackle. The indefinite article between the verb and the noun is unstressed, and forms the recessive position of a binary trochaic foot with the preceding verb (*wetərə*). Being unstressed, the second vowel is a prime governor hitting the final consonant of *wait* on the melodic tier. The position dominating this consonant escapes licensing due to (39). Notice that this form may well be treated as a lexicalized item, i.e., the sequence *wait a* may form a trochaic foot established in

³¹ We will examine the item in (46b) later.

³² The bold lines appearing in the representations of (48) indicate governing relations contracted post-lexically.

the lexicon. However, even if the concept of lexicalization is eschewed, the distinction between lexical and post-lexical government, in tandem with the uniformity principle provide an answer to the question of why encliticisation of the indefinite article to the preceding verb is possible in this case. We will return to this question presently. Consider now the items in (41) repeated as (49) below for ease of reference.

- (49) BALOGNÉ (2002:10)
- a. I want you [f]o help me.
 - b. Don't the [f]o me.
 - c. [f^h]o tell the truth
 - d. [f^h]omorrow
 - e. see you [f]omorrow

(49a) and (49b) work exactly like (46d): (ju:rɛ) and (la:rɛ) form binary trochaic feet in connected speech where flapping will take place according to the mechanism depicted above. Notice that function words like articles, prepositions and infinitival particles leave the lexicon without stress – and hence governing relation – and remain stressless in the connected text. Consequently they are prone to cliticisation and end up glued to the preceding lexical item. In (49c) and (49d) both the vowel of *to* and the first vowel of *tomorrow* are unstressed and hence they are prime governors. According to the system of Balogné, they should indeed govern the melody of the preceding position once government proceeds on the melodic tier. This means that her system predicts lenition in both (49c) and (49d), a prediction which is not borne out by the data. Notice, however, that neither in (49c) nor in (49d) is the unstressed vowel preceded by another vowel which could provide the necessary licence to govern. Thus, neither the vocalic position of *to* nor the first vocalic position of *tomorrow* is able to govern and, as a result, they are allowed to discharge their licensing potential on the preceding consonantal position. These consonantal positions in turn become licensed and ungoverned, i.e. strong, the phonetic manifestation of which is aspiration.

The remaining two items are (46b) and (49e), repeated below as (50a) and (50b) respectively.

- (50)
- a. grow [f^h]omatoes
 - b. see you [f]omorrow

These two items constitute a challenge to theories attempting to account for the distribution of flapped versus aspirated /r/. While (50b) is easily accounted for in the framework we have proposed, (50a) sneaks out of analysis, since the first vocalic position of *tomatoes* is unstressed, and thus counts as a prime governor provided that it is licensed to govern. We have also seen that governing licence may also be provided post-lexically, besides the fact that stressed vowels are unlicensed governors, cf. (48b). As a result, we rightfully expect governing licence to be assigned to the first vocalic position of *tomatoes*. However, as shown by the transcription, aspiration takes place. Notice, however, that (50b) can easily be treated as a sequence stored in the mental lexicon of the speaker. In this case the government-

licensed unstressed vocalic position in the first syllable of *tomorrow* will be able to perform its primary role as a governor flapping the initial consonant.

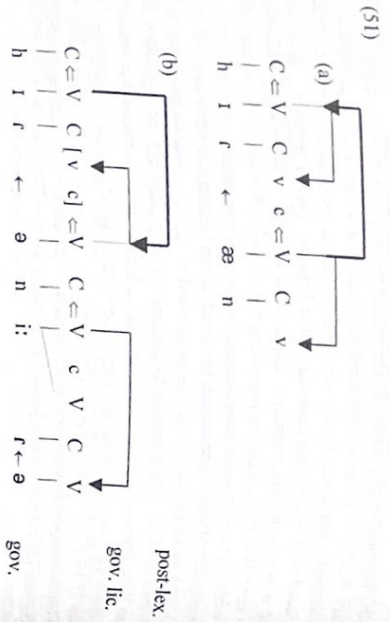
In (50a) the unstressed vowel in the initial syllable of *tomatoes* cannot perform its primary role as a governor although it seems that it may receive governing licence post-lexically. However, by the time the two items are concatenated, the initial [f] of this word will have been licensed in the lexicon. This is because – *grow tomatoes* being a non-lexicalized string – *tomatoes* leaves the lexicon as an individual item with no full vocalic position preceding the unstressed vowel in the initial syllable of the word. As a result, the word-initial [f] escapes government (hence flapping) in the lexicon. Remaining ungoverned, however, it can be licensed since this will not violate (39), and as a matter of fact, the unstressed vocalic position in the initial syllable of *tomatoes* will have the chance to perform its secondary role of a licenser. It is clear from this discussion that the crucial factor here is that a consonantal position cannot be licensed and governed by the same vocalic position simultaneously. This is so even if one of these forces affects the consonant in the lexicon, while the other becomes available post-lexically. In such cases the force becoming available later is blocked. This is a case of phonological blocking.³³

As a consequence of the assumptions made above, the data in (49) are all straightforwardly accounted for. All we need to add with respect to (49a-c) is that since function words do not carry a stressed vocalic position when they leave the lexicon, they need to be incorporated into a trochaic foot. A preceding stressed vowel will provide governing licence to the vocalic position of the infinitival particle, preposition, etc. so that the latter position may properly govern. Note that the sequences [ju:rɛ) and [la:rɛ) are best treated as encliticised strings.

Under the proposal put forward here, however, some of the items in (46) seem, at first sight, to be problematic. The string in (46d) poses no problem since *wait a minute* can be treated as a lexicalized form and (46b) has also been covered above assuming that *grow tomatoes* is a non-lexicalized form. As far as (46c) is concerned, we may again refer the case of *at issue* to lexicalization by assuming that this case is different from *a issue* in that the latter is not at all lexicalized. *Tissue* leaves the lexicon with a licensed initial consonant, which resists any later government. What needs to be revisited is the items in (46a), namely, *hit Am* and *hit Anita*. The first one of these seems at first sight to be more problematic, since both *hit Am* and *hit Anita* are susceptible to flapping. However, as we have seen above in connection with the data in (49) and (50), in non-lexicalized forms such as *hit Am* and *hit Anita*, both vowel-initial words *Am* and *Anita* contain a licensed empty consonantal position on leaving the lexicon. This licensed empty consonantal position cannot be affected by proper government emanating from the government-licensed first vocalic position of *Anita* – which may receive its governing licence post-lexically – since it would run against (39). Moreover, since this type of government proceeds on the melodic tier, this question does not even arise. Since the initial consonantal position is empty, proper government may reach the word final consonant of *hit* on the melodic tier causing flapping. This does not violate (39) since it is different consonantal positions that are licensed and governed respectively by the same vocalic position. By way of revision,

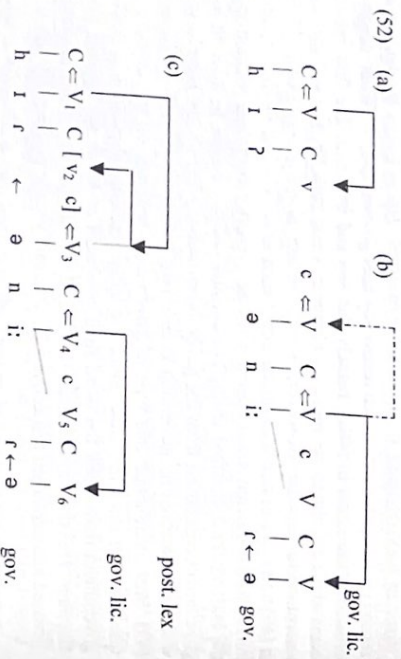
³³ For the concept of blocking in morphological theory, cf. Aronoff (1976).

consider the representation of the two concatenated strings once again as (51) below, which already incorporates the hypothesis of bidirectional government.



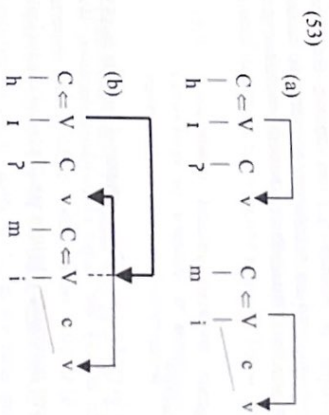
Notice that in the framework we are advocating here neither metrical nor proper government-respect locality in the traditional sense. Although the parties entering into a proper governing relation are adjacent on the melodic tier, they may be separated by more than one point on the skeleton. Furthermore, metrical government incorporating contentful vocalic positions into the metrical hierarchy may skip quite a number of skeletal positions, since stressed vocalic position, for example, seem to target the farthest contentful vocalic position first. Only after having 'killed off' all the contentful vocalic positions can government target vocalic positions devoid of melodic content.

Furthermore, examining (51b) it becomes obvious that *hit* and *Ania* leave the lexicon as shown in (52) below.



Notice that both items leave the lexicon containing a binary trochaic foot. The first vocalic position of *Ania* is left unattended by the metrical structure and receives proper treatment only by default. This default mechanism consists in implicating all degenerate material into metrical structure during the course of phonetic interpretation. This relationship is indicated by the dashed-line in (52b). Post-lexically, however, the default mechanism is not necessarily invoked, since phonology strives to maintain uniform structure wherever possible, in accordance with the uniformity principle. Since the governing relationship indicated by the dashed line is treated as a structural freak invoked only as a rescue mechanism, post-lexically it is shunned by incorporating the initial vocalic position of *Ania* into the degenerate foot containing the contentful (V₁) and the empty (V₂) vocalic position lexically. This does not come as a surprise since a degenerate foot, as is shown by its name, is also tacitly assumed to be a structural torso. The net result of concatenation is depicted in (52c), whereby the governing relation initiated by the vocalic position of *hit* embraces the first vocalic position of *Ania* incorporating the latter into a fully-fledged trochaic foot. The government-licensed V₁ will then govern V₂ and the bracketed sequence remains uninterpreted. Government proceeding on the melodic tier encounters the melody of the word-final /r/ in *hit*, and flapping takes place.

The only item that has been left unattended is the third example in (46a), i.e. *hit me*, pronounced as hi[tʰ]me. The machinery that we have proposed above raises a number of questions in connection with this particular sequence. Consider the representation in (53) below.



The representations in (53a) show how the two items are stored in the lexicon, while (53b) shows the result of concatenation. Since *hit me* is a phrasal category, we would expect the stressed vocalic position of the second item to serve as the ultimate head of the resulting domain. However, since the pronoun *me* is a function word, it lacks lexical stress and behaves like a clitic, so it cannot function as the ultimate head of the domain. Notice that the empty vocalic position – occurring at the end of *hit* – is controlled by government, in any case. Therefore, it loses its licensing potential, leaving the preceding /r/ unlicensed, which in turn may in both cases be realised as a glottal stop, cf. also Szigetvári (1999). A careful inspection of (53b) also answers the question of why /r/ may not be flapped in *hit me*. Although the first vocalic position of *me* is able to properly govern from right-to-left, it may not target the

immediately preceding consonant, since it is already licensed. Furthermore, right-to-left government between a vocalic position and a consonantal position takes place on the melodic tier, and therefore, such a relationship would never reach the final *N* of *hit*, since the intervening melody of /n/ blocks the way.

The above discussion shows that the situation is more complex than it is suggested in Balogré (2002). The representation in (53) above, for example, raises the question of what will ultimately silence the empty vocalic position at the end of *hit*. If proper government proceeds exclusively on the melodic tier, how can it ever access an empty vocalic position, lacking any melody whatsoever? Furthermore, if it is not proper government that silences empty vocalic positions, then what will cater for the silence of these marked skeletal points? The partially modified representations in (47) incorporating the notion of government licensing raise the same questions.

In order to provide for the silence of empty vocalic positions, and to suggest a feasible answer to the distribution of flapping in General American at the same time, we need a more sophisticated network of governing relations. Moreover, a proper distinction needs to be made between relations contracted in the lexicon on the one hand and post-lexically on the other.

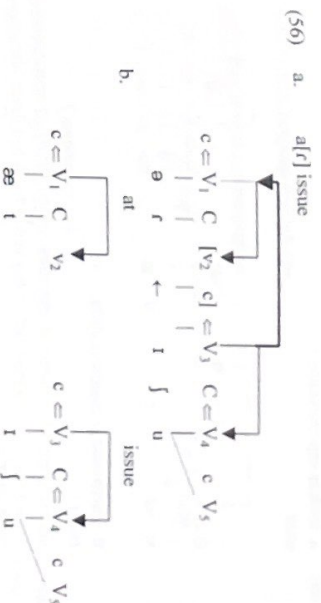
The discussion presented above leads to the conclusion that the adoption of the bidirectionality hypothesis in tandem with the uniformity principle is beneficial for the understanding of the distribution of flapping in General American. Notice also that even the concept of lexicalization may prove to be redundant in capturing the exact distribution of flapping vis-à-vis aspiration. From among the sequences discussed in this section, only in those listed under (54) may reference be made to the concept of lexicalization in capturing the distribution of across-the-word flapping.

- (54) a. al[r] issue
b. wait[r] a minute
c. see you [r]omorrow

Consider furthermore the items in (55) below, whose infinitival particle in (55a) and preposition in (55b) happen to display the same clitic-like behaviour. We shall discuss the items in (54) and (55) together because they highlight the importance of the distinction to be made between governing relations contracted at the lexical versus post-lexical level.

- (55) a. I want you [r]o help me.
b. Don't lie [r]o me.

The string in (54a) has been given an analysis above in (48b). Let us repeat it below as (56a) for the reader's convenience and suppose that the lexical representation of the items comprising the string is as (56b) below.



It is fairly obvious that the right-to-left metrical governing relation – indicated by the bold arrow – may only be established post-lexically, when the two items have been concatenated. This also holds of the proper governing relation between *V*₃ and the final consonant of *at* contracted at the melodic tier. The preposition *at* forms a degenerate foot in the lexicon, and contains a governing relation between *V*₁ and *v*₂ because it is more than a sub-minimal string. The post-lexical metrical governing relation manifests itself in the form of vowel reduction – the vowel of the preposition is reduced – while proper government proceeding on the melodic tier results in tapping the final consonant of the preposition. The government-licensed *V*₁ in (56a) properly governs empty *v*₂ from left-to-right, keeping it silent. It is thus obvious that the correct phonetic interpretation may be derived in the case of (56) without resorting to the concept of lexicalization. Moreover, there are two generalisations to be captured as a result of the above analysis. These are given as (57) and (58) below.

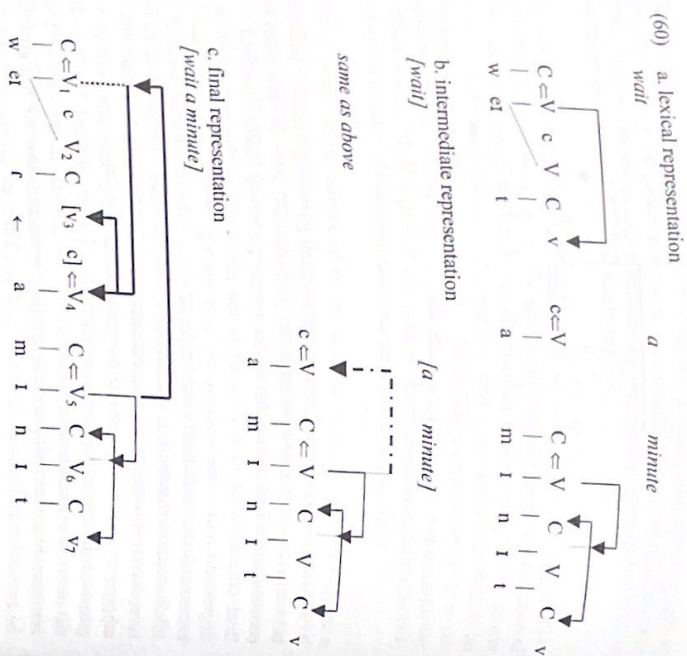
- (57) Government holding between vocalic positions is bidirectional, regardless of whether it manifests itself in the form of proper government or metrical government.
- (58) Governing relations may be established in the lexicon and also post-lexically.

Notice that (58) rejects one of the basic tenets of GP holding that governing relations are established in the lexicon, since, as we have seen, governing relations are also contracted post-lexically.

Consider now the string in (54b) whose lexical and post-lexical representations are given in (60) below. Before turning to phonological relations, consider the syntactic structure of the string in (59).

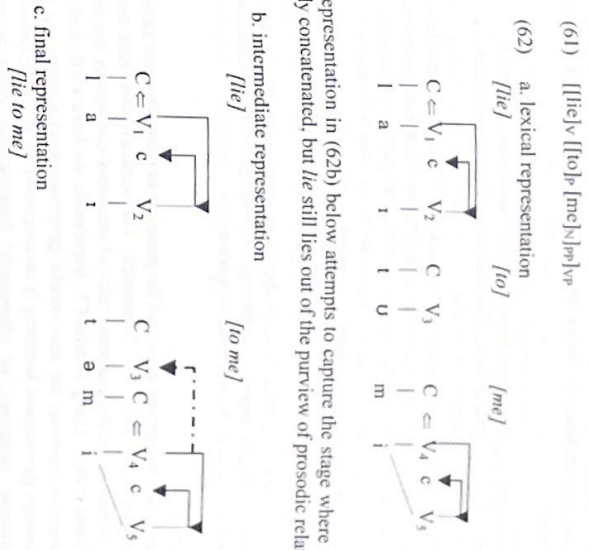
- (59) [[wait]_v [[a] ₀ [minute] _N [wP] _{vP}]

Governing relations seem to respect syntactic structure. Consider now (60) below.



The representations in (60a) should by now be obvious. In (60b), the determiner and the noun are concatenated, and a post-lexical default governing relation hits the vocalic position of the article, in order to incorporate it into the metrical hierarchy. This relationship is indicated by the dashed line in (60b). This default relation is not invoked in (60c), since its presence would upset uniformity of foot-types, and another more convenient governor vocalic position becomes available through concatenation of *wait* and *a minute*, i.e. V_1 . This latter vocalic position embraces the farthest available non-empty vocalic position into its foot domain, which in turn will govern empty V_3 keeping it silent. The government-licensed V_4 and the melody of /l/ at the end of *wait* are now adjacent on the melodic tier, and therefore flapping can take place. And ultimately, since *wait a minute* is a VP, the most prominent vocalic position V_5 will incorporate the other foot head into the prosodic hierarchy. Note that while syntactically (prosodically) it is the most prominent vocalic position of the complement NP that assumes the role of a domain head.

In the items given in (55) above, the infinitival particle and the preposition respectively, undergo incorporation into a preceding degenerate foot in quite the same way as it was done above by the indefinite article. This, as we have seen above, is a process of encliticisation. By way of illustration let us choose (55b). Consider now the proper bracketing in (61) and the prosodic representations in (62) below.



The representation in (62b) below attempts to capture the stage where *to* and *me* are already concatenated, but *lie* still lies out of the purview of prosodic relations.

In (62a) we have given the lexical representations of the three respective items constituting the verb phrase *lie to me*. In *lie* the second (glide) portion of the diphthong is distinctively lodged in the second vocalic position, so that the latter is not at all empty. For this reason, left-to-right government may manifest itself only in terms of a metrical relation, since the second vocalic position is not empty. A similar relationship is manifest in the long vowel of *me*. Melody here spreads into the second position of the long vowel from the first one, and only after this process has taken place can left-to-right (metrical) governing relationship be established between the two skeletal positions of the long vowel. This is due to the fact that an empty vocalic position may not be properly governed from left-to-right over an empty consonantal position. The reason for this is quite simple: such a structural configuration would result in an empty cv^{34} sequence, which is a metre lapse. Since an empty consonantal

³⁴ If any appear as a paradox that the second portion of the long vowel is represented by a capital V in the diagrams and yet the final two skeletal positions are referred to as an empty cv sequence. Notice,

position followed by a governed empty vocalic position could only be interpreted as mere silence, the pronunciation of such a structure would amount to a short vowel followed by silence.

In (62b) we encounter again the now familiar default governing relation between V_4 and V_3 indicated by the dashed line. This disfavoured structure, however, is not established in (62c), where a more favourable binary trochaic foot is erected, whereby V_1 incorporates V_3 into a well-formed trochaic foot. Having received licence to govern, V_3 is now able to govern V_2 , the second position of the true diphthong. The phonotactic reflex of this latter relationship is that only off-glides can be inserted into this position, i.e., the distributional possibilities are heavily curtailed here. Furthermore, since V_2 also receives licence to govern, it will strike the consonants on both sides, causing them to lose their inherent muteness. In the case of the empty consonantal position, this loss of inherent muteness will be manifest in the smooth sonorant transition from the first half of the diphthong onto the second. In the case of the contentful consonantal position to the right of V_2 , government contributes to flapping, already initiated by V_3 at the melodic level.

3.4 Conclusions

This section has made an attempt to extend the principle of GOVERNMENT LICENSING to vocalic positions in a strict CV framework. The concept itself was originally proposed as a condition on the grammaticality of consonant clusters in standard GP, cf. Charette (1990, 1991). Using a strict CV framework, we have tried to show that not only consonantal positions but also vocalic governors need a licence to govern. While word-internal government licensing is accompanied by vowel reduction (foot-internal government licensing), or phonotactic dependencies (long vowels and diphthongs), this is not necessarily so across the word. We have accounted for the distribution of flapped, glottal and aspirated allophones of /t/ in terms of government licensing, by pursuing the idea that it is indeed feasible to account for word-initial lack of flapping by making reference to two factors: lack of licence to govern on the one hand, and the idea that a consonantal position cannot be licensed and governed simultaneously by the same vocalic position, on the other. We have also seen how the clitic-like behaviour of function words helps explain the distribution of flapped versus aspirated [t] in different contexts.

We have seen that the proposal that proper government exclusively operates on the melodic tier is untenable because it leaves empty vocalic positions without proper control. Moreover, a distinction between lexical and post-lexical relations of government needs to be made and phonology strives to maintain uniform foot-types all along the skeleton.

Finally, it has been pointed out that syntactic structure also influences the evolution of post-lexical governing relations, by providing a basis on which these algorithms are to be calculated.

however, that the second portion of the long vowel is empty until spreading has taken place, and the diagrams illustrate a stage when this process has already taken place. In other words, the diagrams show the result of phonetic interpretation.

4 Summary

As opposed to currently-held views in the theory of Government Phonology, we have claimed in this paper that government is neither left-to-right nor right-to-left, but is instead bidirectional. The theory advocated here is based on the assumption that there is no difference between the principles governing stress and vowel reduction on the one hand, and the manifestation of empty vocalic positions on the other.

Another proposal of the paper is to extend governing relations beyond the word domain by making a distinction between lexical and post-lexical government. We have seen that governing relations established as a last resort during the course of phonetic interpretations may be altered post-lexically in order to maintain monotonicity of foot types. Governing relations contracted post-lexically are influenced by the syntactic structure of the given string.

In the framework proposed in this paper, governing relations are not subject to the principle of strict directionality, and locality is also considerably reassessed. The latter is defined by syntactic/morphological structure.

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Declination as a phonetic property of utterances in Cantonese*

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1 Defining declination

The pitch span in an intonation group¹ demonstrates a phenomenon of declination. Declination refers to the fundamental frequency having a tendency to decline gradually during the course of utterances (Ladd 1984: 53).

Declination is an F_0 -decreasing phonetic process in Cantonese that is not subject to any particular tonal sequences. It differs from such phonological processes as downstep or downdrift in African languages. For example, Hyman (1975: 226) claims that an alternation of H-L-H sequences is subject to downdrift in a number of languages, for example Igbo, Hausa and Twi, etc. This phenomenon, representing an automatic lowering process, applies progressively to each H preceded by a L. A sequence of H-L-H is not realised as [$\text{---} \text{---} \text{---}$], but rather as [$\text{---} \text{---} \text{---}$]. This contrasts with the phenomenon in the identical tonal sequences in most African languages. For instance, a sequence of H tones is realised as [$\text{---} \text{---} \text{---}$] rather than as [$\text{---} \text{---} \text{---}$] (p.228). On the other hand, downstep can be predicted morphophonemically in many cases, "in which a lowered H receives phonemic status when a L which 'conditions' downdrift is lost (either through deletion or through assimilation)" (p.227). A standard example is cited in Twi (Fromkin 1972: 57): the realisation of /mí ɔ bú/ (my stone) (H-L-H) is /mí ¹bú /. By downdrift, the second H is lowered. At this point, the L /ɔ/ is deleted and the result is H-¹H. That is, a H followed by downstepped ¹H, which is contrasted with H-H and H-L. Downstep and downdrift are phonologically or morphophonemically predictable. Pierrehumbert (1980) adopts the term 'downstep' traditionally used in African studies in her description of the intonation pattern of English: any bitonal accent (indicated by a plus sign), H*+L, H+L*, L+H* and L*+H (the asterisk mark is associated with a stressed syllable), triggers the lowering of the pitch of the following H (p. 152). English downstep is conditioned by the morphological organisation of the intonation; it takes place in sequences of the form H+L and L+H with a H, but not in other alternation tonal sequences (p.150). Examples are given in the utterance 'an orange ballgown' with (a) H*H*LL% - standard declarative intonation; (b) H*+L H*L L% - a downstepping accent on orange; (c) L*H*LL% - surprise-redundancy contour (Beckman and Pierrehumbert 1986: 257). Downstep only occurs in example (b) where the bitonal H*+L causes the following H* to have a lower F_0 value than the preceding H*. However, declination in Cantonese is not triggered by any phonological sequence of tones nor determined by any linguistic factors. It is an automatic lowering process present all the time during the course of speech and applies to all tonal sequences. The 'lowering' is based on the comparison between the F_0 values of identical tones or similar tones within the intonation group in question.

Phonologically equivalent tones decrease their phonetic values when they appear later in the same intonation group. Take Example 1 below: the fitted lines linking up the phonologically identical tones take a parallel downward slope, i.e., the tonal peak of the second T1 (158Hz) is lower than that of the first T1 (169Hz) and the lowest point of the first T6 (127Hz) is higher than that of the second T6 (92Hz). There are two T4s and two T6s in Example 2. The F_0 value is 96Hz at the lowest point of the first T4 and 90Hz at the lowest point of the second T4; and

* This paper is a modified version of part of my Ph.D thesis, which has recently been published in book form by Lincom Europa, Muenchen.

¹ An intonation group is defined as the smallest chunk marked off by resetting the pitch span in the melody of a stream of speech.

1411Hz at the mid point of the first T6 and 124Hz at the mid point of the second. The identical tones have no identical F_0 value in the same intonation group; the later a tone occurs, the lower its F_0 value. The fitted lines of the pitch span linking up the identical tones descend gradually as shown in Figure 1.

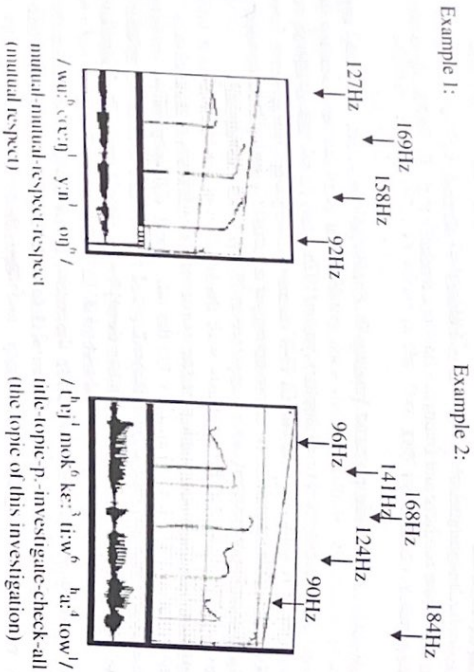
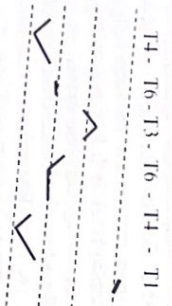


Fig. 1. The tonal contrast in an intonation group represented by fitted lines, taken from example 2 above.



The downward trend of the fitted lines representing the pitch span of the intonation group is a matter of fact, present in all intonation groups. It can easily be discerned by visual inspection. If a rising slope occurs, it perhaps indicates that the F_0 maximum is located on a high tone, T1, which is at the end of the slope of the contour as in Example 2, but it does not indicate the absence of declination. We argue that the slope line which is formed by successive single phonological tonal contours is the intonation contour, and this is also Chao's proposal in the intonation of Mandarin ("normal intonation is simply a succession of the tones" 1968: 41). If there are three identical/similar tones in an intonation group, the identical tones A, B and C are linked up by a fitted line, where B is lower than A and C is lower than B.

We are not sure about the cause of the declination. The presence of declination in every single intonation group in our data strongly supports the view that it is an automatic process – it is due to interaction between the larynx and the respiratory system (Lieberman 1967, Collier 1975 and 1983). The physiological explanation suggests that the drop in F_0 is a result of the

natural falling off in subglottal pressure that accompanies expiration in speech. Subglottal pressure and laryngeal tension are the principal components of output F_0 . Obviously, speakers can control the resetting of the pitch if they want to, as they can raise their voice or adjust which phonological tone they want to produce. Speakers can also control the falling or rising of tonal movement as they wish, as when they produce a falling tone or a rising tone. Speakers can also drop their voice at the end of an utterance as if they have lost interest. However, speakers do not seem to be able to control the declination.

2 Identical tonal sequences

Although all our data (as in the examples used in this paper, which were taken from a recorded natural conversation between three young professional commentators from a radio programme in Hong Kong) clearly show that the phenomenon of declination exists in all intonation groups which consist of a variety of tonal combinations, a small experiment was conducted to strengthen the argument. The experiment was designed to investigate whether declination exists in identical-tonal utterances. Each tone was placed in three utterances of different length, each utterance consisting of four to eleven syllables. Details of the utterance data can be found in the appendix. Two native speakers of Hong Kong Cantonese, JHDG and LTHJ (male postgraduates) read the designed utterances with three repetitions, in a sound-proofed booth at SOAS. The technique used to record fundamental frequency was electro-laryngography.

The laryngograph is a device enabling the vocal fold contact area to be investigated non-invasively (Foucain *et al.* 1971: 172). Two electrodes, with the help of a bondage wrapping on the neck, are placed on both sides externally at the level of the larynx. When the vocal folds vibrate, the current flow passing between the electrodes changes. With no vocal fold contact, the current flow between the electrodes is at the minimum, with full vocal fold closure, the current flow is at the maximum. The output of this changing current flow which passes between the electrodes is called the laryngograph waveform (Lx). The Lx waveform, instantaneous fundamental frequency contour (Fx) and spectrograms can be derived from the laryngograph trace and displayed simultaneously in the PCLX SPG software package. The package provides the optimum display for clarity of measurement. All tokens were digitised at a 10 kHz sampling rate. The informants were free to choose where to define the intonation groups. Measurements of the F_0 values were taken only from the centre point of T1, T3 and T6, and the valley of T4. The two rising tones, T2 and T5, were measured at two points: the peak and the valley. Both time and the F_0 data are normalised. The results strongly support the claim made above: declination exists everywhere in Cantonese (as displayed in figures 2-7).

Fig. 2. Mean F_0 contours of T1 occurring consecutively showing the pitch of identical tones descending gradually.

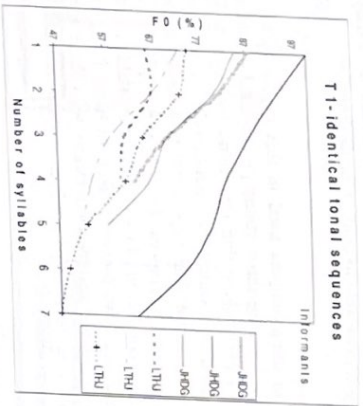


Fig. 3. Mean F_0 contours of T3 occurring consecutively showing the pitch of identical tones descending gradually.

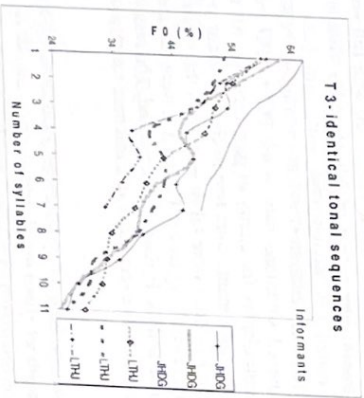


Fig. 4. Mean F_0 contours of T4 occurring consecutively showing the pitch of identical tones descending gradually.

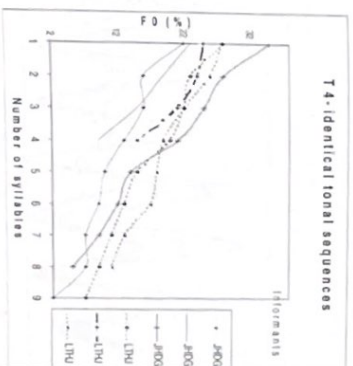


Fig. 5. Mean F_0 contours of T6 occurring consecutively showing the pitch of identical tones descending gradually.

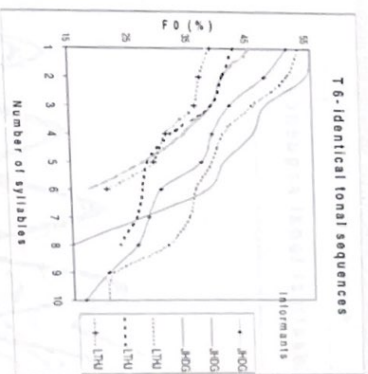


Fig. 6. Mean F_0 contours of T2 occurring consecutively showing the pitch of identical tones descending gradually.

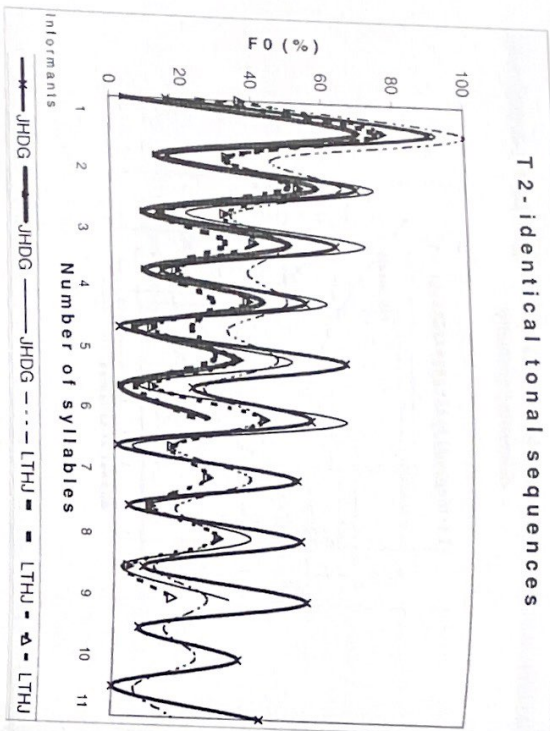
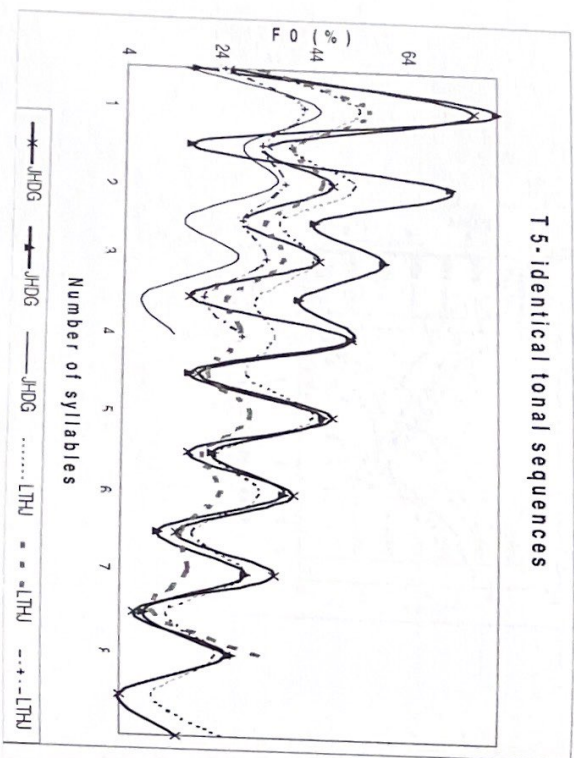


Fig. 7. Mean F_0 contours of T5 occurring consecutively showing the pitch of identical tones descending gradually.

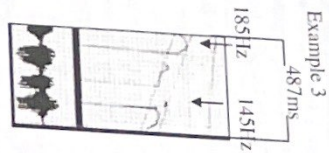


3 Long and short intonation group

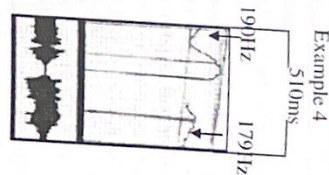
It is said that in longer utterances a slower declination rate is found invariably (Maceda 1976, quoted by Ladd 1984: 57). Hertz (1990: 245) suggests that in Bambara, a two-tone language, the starting and ending frequencies of the baseline are relatively independent of the sentence duration, while the starting and ending frequencies of the topline are a function of sentence duration. Lantian (1993: 203) presents evidence that declination in Yoruba is dependent on tone type: L tones have the steepest slopes and H tones the shallowest. On the other hand, it is reported that "calculation of the exact rate of declination is a difficult task" (Vaisseire 1983: 56). Not only can the general tendency of declination of an intonation group be easily detected by the eye, but a steep declination line can also be easily distinguished from a gentle declination line by visual inspection. Certainly it is difficult to find a long intonation group with a very steep slope, but it is not uncommon for short intonation groups to be presented with a steep slope. Data shown in this study clearly indicate that the slope of the declination line is not simply decided by the length of the intonation group. Here, we present two pairs of examples. Examples 3 and 4 are short – 487ms ~ 510ms respectively; examples 5 and 6 are long – 1187ms ~ 1193ms respectively. Examples 3 and 4 both consist of four syllables, whereas Examples 5 and 6 both consist of seven syllables. The different slope of the declination line in each pair can be easily caught by the eye in terms of relative gentleness or steepness.

Steep decline vs. Slow decline

Short intonation groups:

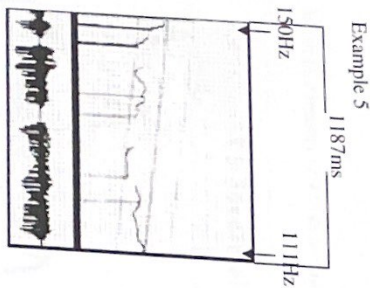


/kɚm² k^hɔy⁵ tɪ:m² a:²/
in that case-he-how-p.
(So, what will he do then?)

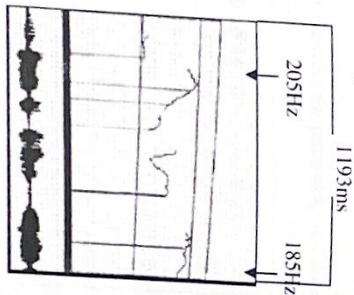


/nɔw⁵ tɪk¹ kɚw³ lɔ:²/
have not-able-teach-p.
(unteachable)

Long intonation groups:



/mɪ¹ kɔ:³ kɚw³ jɔk⁶ p^hɔŋ⁴ jɪ:⁵ wɔŋ²/
this-m-teach-cultivate-assess-discuss-committee
(the Body of Educational Assessment)



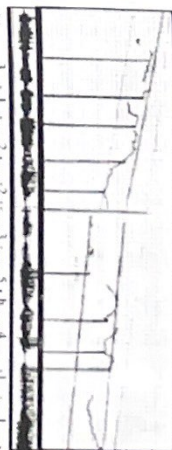
/jɪ:⁴ kɚ:¹ ŋɔ:⁵ tɛj⁶ kɚw³ cɪ:¹ nɛ:¹/
now(2)-1-pl-teach-expert-p.
(nowadays us teachers)

We have made no attempt to calculate the declination rate in each intonation group. The slope of the declination line seems to be affected by many factors, for example, the length of the intonation group, the position of the intonation group in the whole utterance, the type of sentence (command, request, etc.), the tempo, etc.

4 Declaratives and interrogatives

It is reported that in a number of languages declination can be suppressed in making interrogatives (Vaisseire 1983: 57), and questions requiring answers other than 'yes' or 'no' may even form a rising tone in Chengdu (Chang 1958: 78). Lindau (1985: 37) experiments with yes-no questions and question-word questions in Hausa, and reports that "all questions are specified with zero slope" (1985: 37). However, as with the declaratives, the interrogatives in our data all manifest declination. Here, we present examples of 'wh'-interrogatives which contain a question indicator 'why' (/tɪ:m² kɚj²/) or 'how' (/tɪ:m²/) followed by either of the final-particles /kɚ:²/ or /a:²/:

Example 7



/kɚw³ cɪ:¹ tɪ:m² kɚj² jɪ:w³ jɔw³ k^hɔy⁵ wɛj¹ cɪ:n¹ tɪk¹ kɚ:²/
teach-expert-how-explain-need-have-power-might-until-o.k-p.
(Why do teachers need to have authority anyway?)

Example 8

/kɚm² k^hɔy⁵ tɪ:m² a:²/ [please refer to the figure in Example 3 above]
in that case-he-how-p.
(So, what will he do then?)

One can argue that it is common for an interrogative to display a falling trend if it contains a question word (i.e., a 'wh' word), as in English. The following example is a rhetorical interrogative without a question word but with a final-particle /a:²/. It also displays the phenomenon of declination:

Example 9



/ɔw⁶ kɚj¹ t^hɔŋ⁴ a:²/
to be-street-child-p.
(He'll be out on the streets?)

* The peak F₀ values of T1 and T2 are very close, as are the F₀ values in the centre points of T3 and T5.

5 Yes/no and echo questions

The following is a constructed yes/no question consisting of a string of T4s. Yes/no questions in Cantonese are choice type questions, giving a choice of 'yes' or 'not yes'. A final particle (*la?*) is often attached at the end of the utterance but is not obligatory. The invented utterance employs T4 only for the sake of using identical tones with the negation */m⁴/*. No final particle is used; this also allows us to avoid distorting an identical tone sequence. Two informants (JHDG and LTHJ) read out the yes/no questions and their corresponding answers which are illustrated below in figures 8a and 8b, respectively.

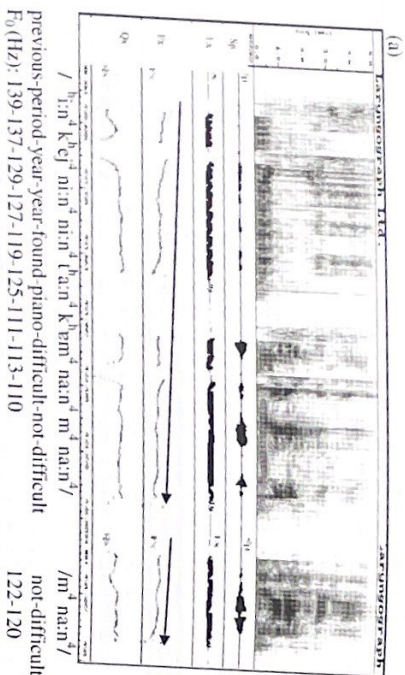


Fig. 8. Extracted F_0 contours ($F(x)$) of the question and answer ('Did you find it difficult to play the piano at the previous stage?' - 'No.'). Spoken by JHDG for (a) and LTHJ for (b). The arrows indicate the declining F_0 over the utterance. The F_0 values are taken from the valley of the tones.

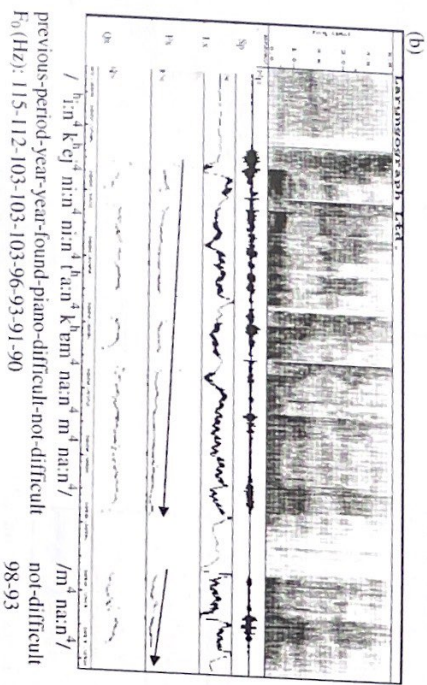


Fig. 9. Extracted F_0 contours ($F(x)$) of a Yes/No interrogative and an echo interrogative respectively, spoken by JCCF.

The downward trend line in these questions and answers is easily detected. In the utterance spoken by JHDG, there is a 29Hz drop from the beginning to the end of the question and only a 2Hz drop in the answer; in the utterance spoken by LTHJ, there is a 25Hz drop in the question and a 5Hz drop in the answer. This evidence runs counter to the view that declination is suppressed in interrogatives. It supports our claim that declination operates in both declaratives and interrogatives in Cantonese.

However, it is often said that a declarative can be turned into a question simply by using a rising pitch, for example, when the sentence is spoken in doubt or suspicion. According to this view, no final particle is used to indicate an interrogative, but rather the distinction between an interrogative and a declarative is totally dependent on the tonal contour, i.e., one is rising and the other is falling (e.g., Kwok 1984). This view would also imply that declination may be absent in this type of interrogative. It would lead one to expect that declination in Cantonese is not an automatic phonetic property but depends on a linguistic choice between the different linguistic functions (i.e., interrogative and declarative). In order to investigate whether declination is present in interrogatives which are heard to be rising, we constructed a pair of utterances and had informant JCCF read them out. The result is displayed in figure 9. Each one of the pair of utterances consists of identical words, but one is expected to be falling and one is expected to be rising. The utterances consist of phonologically equivalent tones and no other tones interfere.

Fig. 9. Extracted F_0 contours ($F(x)$) of a Yes/No interrogative and an echo interrogative respectively, spoken by JCCF.

The words of each of the two utterances in (9) are */ɲe⁴ m⁴ lei⁴/* (come-not-come) which is interpreted as 'Are you coming?' for (a) and 'Did you ask me if I am coming or not?' for (b). In (b), the horizontal double-headed arrow indicates the duration of the last syllable (452ms) and the vertical double-headed arrows indicate a rise of 255Hz from the valley to the peak of the syllable. The vertical lines mark the boundaries of the last syllable.

Downward trend in F_0 contours is clearly displayed in different length and different types of utterances in figures 2-7. The F_0 contours of yes/no interrogatives in figures 8a-b and 9a read out by different speakers display a uniform downward trend. The downward line in figure 9b demonstrates that declination is also present in an echo interrogative consisting of three identical tones which is normally expected to be rising. The visible declining trend starts at the beginning of the utterance and ends in the middle portion of the last syllable before the rising tail. A rising contour can be present but it is a local event affecting only the last syllable of the utterance. This finding sustains Fok's claim. Fok (1974) conducted an experiment using one word interrogative sentences and claimed that all tones end with a rising tail, and end at

about the same frequency region – they become less distinct; however, they still “maintain their initial frequency distinction”. “The starting frequency of T1 is the highest, then comes T3 followed by T2, T4, T5 and T6” (p.29). We are not sure whether her term ‘initial frequency’ is the same thing as the ‘starting frequency’ or whether it refers to the frequency at a certain length of time from the starting point. By examining the figures she offers, we can see that the pattern of relationships among the tones maintains the contrast in the first half (or less than three quarters) of the tonal duration. If this observation is valid, her term ‘rising tail’ makes sense: the tail is the last half (or slightly more than one quarter) of the tonal duration. She conducted another experiment by putting the test word in the penultimate syllable of an invented sentence. She claims that “[t]he tones said in isolation all give an upward turn as the rising intonation in this case can be passed on to nothing else. Tones extracted from sentences conform more to their basic structure as the rising tail is shifted to the last word” (p.31). In our view, a syllable tone expressing query, doubt or suspicion ending with a rising tail does not necessarily induce a ‘rising intonation’ in the system of Cantonese intonation. A rising tone is proposed by some researchers in some East Asian tone languages: Chang (1958) for Chengdu Chinese, Ho (1977) for Mandarin, Luksameyanawin (1983) for Thai, and Dung *et al* (1998) for Vietnamese. Chang, Ho and Dung’s rising tone is realised as the perturbation of the final syllable, Luksameyanawin’s Tone 2 (rising tone) affects the rising pitch contour of the tonic syllable, and the tonic syllable is usually located at the end of a tone group. If we are not mistaken, the rising intonation contour in those languages suggests that almost nothing happens until the final syllable. Certainly, the final tone of an utterance can be modified in various ways. A rising tail attaching to the end of some forms of interrogatives is probably not enough to justify the conclusion that there is a rising tone in Cantonese or that declination is suppressed in interrogatives in Cantonese. Our data show that the rising tail with various modifications occurs on the last syllable of utterances. Apart from signalling some forms of interrogatives (e.g., echo interrogatives as in figure 9b), it can also signal declaratives with other attitudes, such as irony or impatience, etc. We shall demonstrate this in the following section.

6 Rising tail

Here, we present examples of declaratives with different attitudes: confirmative, ironic and impatient confirmation in figures 10, 11 and 12, respectively (spoken by JHDG).

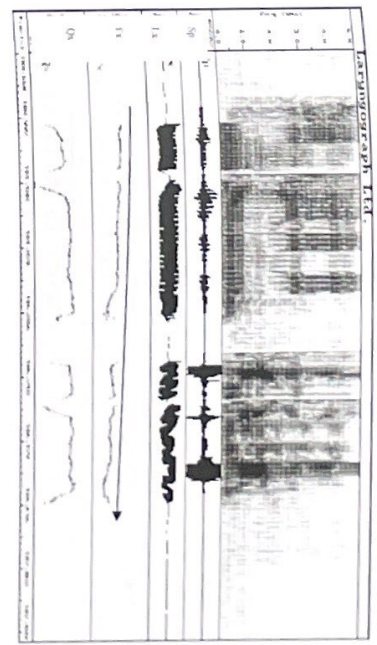


Fig 10 Extracted F₀ contours (F_X) of a confirmative declarative ‘nan’⁴ (previous-period-year-bound-piano-not-difficult – ‘It was not difficult to play the piano in the previous stage’), spoken by JHDG. The arrow indicates the declining trend of the F₀ contour.

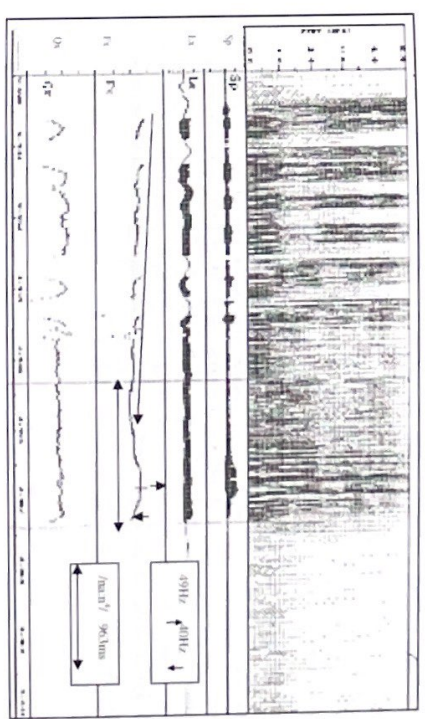
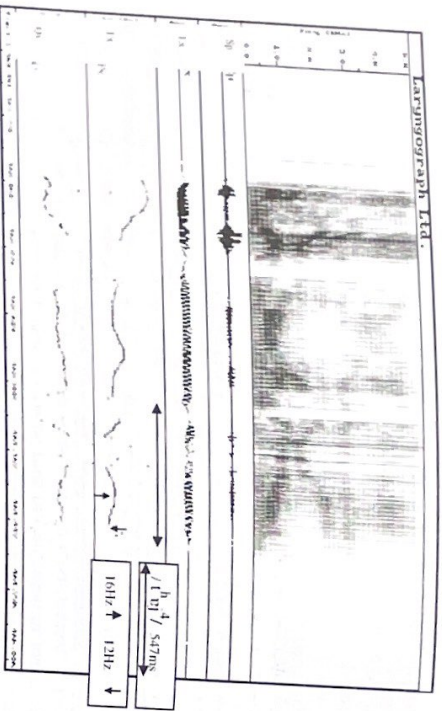


Fig. 11. Extracted F₀ contours (F_X) of a declarative, consisting of the same words as in figure 10 but with an ironic expression, spoken by JHDG. The arrow indicates the declining trend of the F₀ contour. The horizontal double-headed arrow indicates the duration of the last syllable. The upward arrows indicate the rise from the valley to the peak of the syllable, and the downward arrows indicate the fall from the peak to the offset of the syllable. The two vertical lines mark the boundaries of the last syllable.

Fig. 12. Extracted F_0 contours (F₀) of a declarative with impatient confirmation 'Ken¹ jai⁶ mow⁵ man⁶ he⁷ / (to-day-not-task-topic - there is no problem today)', spoken by JHDG. The horizontal double-headed arrow indicates the length of the final syllable. The upward arrows indicate the rising peak from the valley of the syllable, and the downward arrows indicate the fall from the peak of the syllable.



The rising slope of the last syllable in the impatient confirmative declarative in figure 12 is not as marked as that in the ironic expression in figure 11. The rise soars by 49Hz in figure 11, but only to 161Hz in figure 12. Besides, the noticeable difference between the two in the amount of the rise, there is also a difference in duration which, if anything, attracts even more attention: the mean duration of the preceding syllables is similar (269ms for figure 11 and 261ms for figure 12), but the final syllable in figure 11 is more than double that in figure 12 (963ms for the former and 547ms for the latter). The duration of the last syllable in figure 11 (963ms) is nearly four times the mean duration (269ms) of its preceding syllables, whereas the duration of the last syllable in figure 12 (547ms) is about double the mean duration (261ms) of its preceding syllables. The amount of the lengthening is much smaller for figure 12.

As for the declaratives with ironic and impatient confirmation, shown in figures 11 and 12 respectively, the last syllable T4 displays a rise after the canonical fall, followed by another fall. Comparing this rise with that in the echo interrogative (in figure 9b), the difference in placement of the rising peak is obvious – the rising in declaratives is near the centre between the onset and the offset of the vocalic portion, whereas the rising peak is at the offset for the echo interrogative.

The greatly lengthened final syllables in the examples above play a tonic prominence role: they modify their tonal contour by attaching a sharp rising tail, or a gentle rise followed by a gentle fall, etc. They use a great amount of prolongation, different F_0 peak placements and various pitch modifications in the last half of the duration of the tonal contour to convey various linguistic and paralinguistic meaning, for example, to indicate echo interrogatives, ironic declaratives and impatient declaratives etc. (We make this claim tentatively, conscious that a larger experiment would need to be conducted before it could be sustained.)

Any pitch modification in the final syllable is treated as a local event which does not contaminate the downward trend of the whole utterance. We have not found that declination suffers on account of different linguistic functions (e.g. declaratives vs. interrogatives) or different paralinguistic functions (e.g. ironic, impatient, surprised or suspicious, etc).

7 Conclusion

The downward slope present in all utterances, whatever their combination of tonal sequences, clearly indicates that declination is a phonetic property of utterances. The presence of declination does not signal any grammatical or paralinguistic functions. The declination lines operate within an intonation group and determine that phonologically identical tones decrease their phonetic pitch value going from left to right. A rising tail can occur at the last syllable of an utterance to signal grammatical or paralinguistic meaning, but this does not affect the declining trend of the whole utterance and is considered to be a local event.

* In an intonation group, there may be a single piece of information or several pieces of information, one of which is the most important and is then realised as predominant in the intonation group. The predominant piece in an intonation group is the tonic. This is adapted from Halliday (1967, 1970).

Appendix: List of utterances consisting of identical tonal sequences

- T1: 1. / y⁵⁵ fei¹ hoŋ¹ k'ɿn¹ /
pig-fly-punch-sky
(Pigs fly sharply to the sky.)
2. / hɔ:ɿ /⁵⁵ cɛ:ŋ / fa: ho:ɿ¹ hɛ:ɿ¹ /
open-window-flower-open-fragrant
(Once the window is open, you can smell the fragrance from the flowers.)
3. / 'nɑ¹ t'ɿn¹ toŋ¹ toŋ¹ 'hɛy¹ y⁵⁵ k'o:ŋ /
spring-sky-east-wind-blow-pearl-river
(In Spring, the wind blows to the River Pearl from the east.)
- T2: 4. / ɦɿm¹ ka:ɿ¹ p'ow² c'w² t'o:ŋ² ɦɿj² c'ɿŋ² k'o:ŋ² j'eɿ² h'ɛ:ɿ² ho:ɿ² /
how-explain-protect defend-party-at-province-harbour-in-reflect-sound-good
(Why do the Conservative Party have a good influence in the Province and Harbour?)
5. / ka:ɿ² ka:ɿ² ha:ɿ² ho:ɿ² ho:ɿ² t'ɿŋ² /
sit-sit-a bit-very-good-look
(It is fun to make trouble.)
6. / ɦɿŋ² k'w² h'w² j'ɿm² n'w² k'o:ŋ² k'eɿ² ho:ɿ² c'ɛŋ² /
at-nine-floor-drink-wine-talk-chat-very-smart
(It is very smart to have a chat and a drink on the ninth floor.)
- T3: 7. / ɦɿ:ɿŋ² ka:ɿ² fa:ɿ² 'hɛj² k'ɿ:ɿ² c'ɛ:ŋ² c'oŋ² t'o:ɿ² ɦɛy² fa:ɿ² k'ɔ:k² /
relief/leave-quick-fun-knot-account-deliver-goods-go-France-nation
(Quickly go to settle the account and deliver the goods to France.)
8. / c'eɿ² k'o:ɿ² k'w'ɿj² ha:k² ha:k² ha:k² h'eɿ² h'eɿ² k'w'ɿ² c'ɿj² k'w'ɿj² /
four-in-strange-guest-guest-guest-air-enough-all-strange
(The four strange guests standing on ceremony are strange enough.)
9. / k'o:ɿ² p'ow² k'ow² ɦɿ² k'ɿn² eŋ² k'ɔ:k² /
n-report-report-idea-see-right-right
(The opinion in the report is correct.)
- T4: 10. / ɦɿp² k'ɛy² n'ɿn² n'ɿn² k'ɿn² k'ɿn² n'ɿn² n'ɿn² /
previous-period-the-piano-difficult-not-difficult
(Was it difficult to play piano at the previous stage?)
11. / w'ɔ:ɿ² h'ɔ:ɿ² c'ɛ:ŋ² h'w² p'w² j'ɛ:ɿ² c'ɛŋ² k'w'ɿn² /
yellow-river-long-flow-cow-sheep-accumulate-group
(The Yellow River flows forever and there are lots of cattle and sheep.)
12. / ɦɿn² m² c'ɛŋ² j'ɿn² /
human-not-turn into-human
(Human not appearing human.)
- T5: 13. / m'eɿ² fa:ɿ² n'eɿ² m'ɿn² m'ɿn² k'ɛ:ɿ² h'ɔ:ɿ² /
beautiful-woman-lady-evening-evening-reluctant-force-sit-a bit
(The beautiful woman sits reluctantly for a while every evening.)
14. / ɦ'w² j'w² m'ɿj² j'e:ɿ² w'eŋ² j'ɿn² j'w² ɦɿj² /
old-friend-buy-thing-ever-long-have-polite
(The old friend who comes to shop is always polite.)
15. / p'ɔ:ɿ² m'ow² ɦɿ² k'eɿ² /
I-not-pay attention-him
(I ignore him.)
- T6: 16. / h'ɔ:ɿ² k'ɛ² h'a:w² k'ɿn² c'ɿ:ɿ² w'ɿt² toŋ² ta:ɿ² l'ek² j'ɿ:ɿ² p'eɿ² /
study-school-electric-watch-active-move-big-strength-prepare-prepare
(Prepare well for the television activity in school.)
17. / ta:n² ɦɿj² ha:ɿ² p'ɿn² m'eɿ² ɛn² ɦɿ² p'ɿn² c'ɿ:ɿ² /
but-is-below-side-not-to the best-strength-work-thing
(But the people at the lower level do not do their best in the work.)
18. / ɦɿj² j'ɿ:ɿ² p'ɿ² ɔw² w'a:ɿ² c'ɿ:ɿ² /
the-second-day-do bad-thing
(Committing an offence on the next day.)

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Towards an understanding of Meroitic phonology*

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0 Introduction

This paper seeks to address certain aspects of Meroitic phonology, primarily the seemingly random omission of the nasal syllable sign. The Meroitic script exhibits considerable variability in the spellings of the same words, apart from the irregularity of vowel placement, this variability is most apparent in the seemingly random omission of word final coronal consonant graphemes when postpositions, determiners and adjectives are suffixed to the stem nouns where the initial consonants of these suffixes are lateral coronal.¹ These inconsistencies pose serious problems, not only to a standard transliteration of words but also towards any insight into the pronunciation of the Meroitic language. The ability to discern dialectal variation, diachronic change, morphophonemic alternation or simply orthographic errors from each other is wrought with difficulties for any analysis of the Meroitic script. In light of these irregularities, this paper seeks to investigate whether phonological theory in particular a Government Phonology (henceforth GP) analysis is able to propose a working hypothesis of Meroitic phonology, namely (i) the vocalisation of the schwa graphemes and (ii) the assimilation process of nasals and liquids and its exceptions. It is hoped that this study can go towards enhancing the understanding of the Meroite's language.

This paper is organised as follows: §0 presents the background to the script and its grapheme to phoneme correspondence along with an overview of the system of writing and the methods of transliteration and transcription. §1 briefly discusses the typology of the script and the Universalist's approach to script typology. §2 gives an overview of the Meroitic vowels and vowel space taking into consideration universals of vowel inventories. §3 investigates the vowels within GP's elements representation with §4 analysing the constituent structure of Meroitic. The nasal omission is investigated in §5 with a discussion on the failure of Lexical Phonology when applied to Meroitic. A GP analysis is given in §6 of final empty nuclei and its implications in Meroitic with a proposal on the morpho-phonological interface, finally, §7 concludes the paper.

0.1 Historical background

The Kingdom of Kush 900BC – 320AD, was one of the most important early civilisations of sub-Saharan Africa. The civilisation, also known as the Kingdom of Napata and Meroe, stretched from the third cataract to the sixth in present day Sudan. The Kushites used a script² consisting of 23 distinct graphs for writing their language. The Meroitic script has two forms – (i) a hieroglyphic (monumental) form with characters borrowed from the Ancient Egyptian inventory and (ii) a cursive³ (handwritten) form similar to Ancient Egyptian Demotic. The hieroglyphic form was used monumentally carved onto temples and in usage is less common compared to the

* I would like to thank Monik Charette and Alex Bellem for their insightful comments and advice.

¹ It is observed that other phonemes trigger another assimilation process inherent within the Meroitic script such as Hesterman's Sound Law (Folia Ethnographica 1925) where $s \rightarrow t' _ \#\#1$.

² The script of the Kushites is termed Meroitic.

³ Cursive is an erroneous term for the handwritten form as the signs (bar one) are not ligatured to one another, but as this is the traditional term it is adhered to.

ursive script. The cursive form is found written on stelae,⁴ ostraca,⁵ temples and monuments. From archaeological evidence it seems as if the Meroites were more familiar with using the cursive form of the script than the hieroglyphs as Griffith (1911) acknowledges that texts which start written in hieroglyphs finish in cursive as if the Meroites were not as competent in the hieroglyphic form. The direction of the script also runs right to left, as does Ancient Egyptian (AE) but the hieroglyphic characters face the opposite direction from AE. Even though the dominant influence on the kingdom and on its script was AE, the language does not seem to be derived from AE.⁶

The Egyptologist scholar Griffith (1911) brilliantly established the phonemic values of the graphemes by using a textual analysis; however, apart from a handful of lexical and grammatical items, the language as a whole remains unknown. Various scholars have worked for many years on Meroitic to find a cognate language that would verify the language of the Meroites, but so far very little progress has been made.⁷

0.2 Meroitic grapheme to phonemic correspondences⁸

An example of the Meroitic cursive script with its transliteration values is given in (1). Since Griffith's initial assignment of phonemic values Macadam (1950) and Hintze (1971) have proposed revisions for the phonemic values for a few of the graphemes which have been accepted and followed within the field of Meroitic studies.

(1) ⁹	5Ϛ	initial a	ⲛ	q
	ϣ	i	ω	r
	ϥ	e	ϥ	p
	ϧ	o	ϧ	t
	ϩ	w	⊂	h
	ϥ	i	ⲃ	h
	Ⲉ	k	ⲉ	s
	ⲉ	m	Ⲏ	n ^e
	Ⲋ	y	Ⲏ	s ^e
	ⲋ	d	Ⲏ	t ^e
	Ⲍ	n	Ⲏ	t ^o
	ⲍ	b	:	word divider

It should be pointed out that the phonemic values are not the same as the method of transliteration and this can cause confusion when analysing the script. Apart from the

⁴ Slabs of rock or granite.

⁵ Pottery.

⁶ Ancient Egyptian is a Semitic language belonging to the Afro-Asiatic family. What is known of the Meroitic language is that it is agglutinative and lacks gender from this and through lexico-grammatical cogate analysis. Meroitic does not seem to belong to the same language family as AE (Griffith 1911).

⁷ For discussions on the state of research on Meroitic see Hintze (1989), Tröckl (1997).

⁸ The investigation into a revision of the phonemic correspondences is forthcoming.

⁹ My thanks are due to Claude Carrier and Claude Rilly of the Group d'Études Méroïtiques de Paris, Académie des Inscriptions et Belles-Lettres for the use of the fonts. For consistency, in this paper I use the late period cursive fonts.

following graphemes, all other transliterations, at present, are thought to have a close approximation of their phonemic values.

- i) 5Ϛ initial a This grapheme is only found word initially and so Meroitic scholars transliterate it as 'a' but they have followed that the transliteration of 'a' can stand for any of the vowels in the Meroitic inventory.¹⁰
- ii) / o Hintze (1971:322) believed that for ease of presentation this grapheme was better transliterated as 'o'. He proposed that this grapheme denotes /o/ or /u/ but when giving the vowel inventory he only posits the high back vowel /u/ for this grapheme. This discrepancy is possibly due to Hintze's uncertain exact positioning of this vowel. Section 2.2 investigates this vowel placement.
- iii) ⲛ d Originally Griffith believed this grapheme to represent 'z' but Macadam (1950) revised its equivalence as being phonemically nearer to a voiced alveolar stop. Hintze (1971) proposes that it is more likely to be an alveolar retroflex.
- iv) ⊂ h and ⲃ h These graphemes show the standard transliteration but the phonemic assignment is unstable as they are thought to be either fricatives (velar or pharyngeal) with Hintze proposing that ⊂ h could be a velar nasal.

0.3 Syllable graphemes

The syllable graphemes phonemic correspondences were attributed because:

- a) Ⲏ n^e this grapheme is never followed by a vowel.
ⲏ n is only followed by the vowels /a/, /i/ and /u/ but never /e/.
- b) Ⲏ s^e this grapheme is never followed by a vowel.
ⲏ s is only followed by the vowels /a/, /i/ and /u/ but never /e/.
- c) Ⲏ t^e this grapheme is never followed by a vowel.
ⲏ this grapheme is never followed by a vowel.
ⲏ t is only ever followed by the vowels /a/ or /i/.

This means that these 'special' syllable signs¹¹ are used for this class of coronals to denote vowel or the absence of a vowel (except ⊂ t^o). The implications for their use are important for the analysis in §4.

¹⁰ The sign for 'initial a' I argue elsewhere (forthcoming) that in actual fact is more likely to be a consonant and so is not relevant to this point.

¹¹ The analysis of ⊂ t^o at this time is not included because the change on the quality of the vowel.


0.4 The system of Meroitic writing

The Meroitic system of writing, even though it looks as though it is using the principles of an alphabetic script (distinct signs for consonants and vowels), is in fact based upon a syllable type system (signs representing consonant plus vowel). The proposals put forward by Griffith and expanded by Hintze for the understanding of the Meroitic script show an inherently syllabic structure where each consonantal grapheme represents a consonant and an inherent unmarked vowel (CV sequence) a change of vowel following the consonant grapheme is represented by the positioning of a distinct vowel grapheme. The unmarked vowel was assigned as /a/ as Griffith transcribed Meroitic names with the vowel *a*, where no vowel is marked in the script. He justified this because of the spellings of certain places such as 'Napata'. Griffith stated further on that 'the writing indicates that the words consisted mainly of open syllables commencing with a consonant. There were also closed syllables, as is shown by the Greek transcriptions:....but there is no evidence that two vowels sounds followed each other without a consonant between' (1911:22). Hintze (1971:322) revised the work done by Griffith and summarised that 'every consonant, which is written without a vowel sign, signifies Consonant + Vowel /a/. Hence t is /ta/, b is /ba/ etc.' Hintze also concluded that geminate consonants could not be represented in the script as two identical consonants together 'it' would have the transcription /ala/, therefore if geminates are present in the language there is no indication of them as 'it' could be /ll/ and /lll/. The indication of long vowels and diphthongs is also not represented in the script and so it has followed that no proposals have been forthcoming for evidence in the language of these, although, it is possible that the language does contain them.

0.5 Meroitic transliteration and transcription

As the system of transliteration can cause confusion, this paper will follow the system of representing the Meroitic data in the following way:

- Meroitic examples are given in the Meroitic script:


- The traditional method of transliteration is given in italics:

khi
- The phonemic transcription of Meroitic is given in slanted brackets: /kadi/
- The phonemic transcription of the four syllable graphemes is indicated with the vowel in superscript:

/kadi^a/

The Meroitic examples in this paper are transposed to read from left to right (even though the writing system is read in the opposite direction) this is for ease of presentation. The traditional transliteration shows that the inherent unmarked /a/ vowel is not given. This unmarked /a/ is indicated in the phonemic transcription and all instances of the /e/ grapheme will be represented in their closer form of schwa /ə/ and the transcription of the 'o' grapheme is represented by /u/.

1 Meroitic script typology

The script is often erroneously termed *alphabetic*¹² even though it also notates the seemingly confusing four graphemes that represent syllables. Meroitic, under Griffith's and Hintze's proposals, could be classified as a syllabic script of the 'neosyllabary' type. Daniels (1992) uses this term to designate scripts that assign a consonant plus *a* to each basic symbol but one in which the symbol is modified in a systematic fashion to denote the other vowels or absence of vowels usually through the use of diacritics. The Ethiopian and Devanagari scripts are primary examples of Daniels' *neosyllabaries*, but even though Meroitic seems to encode the consonant signs with an unmarked *a* it does not modify the consonant signs to denote the other vowels but actually includes a separate grapheme for the vowels, in this sense Meroitic deviates from Daniels' model but is not alone in its organisation as it is similar in structure to Old Persian Cuneiform.¹³

1.1 The Universalist approach to script typology

This section briefly summarises a study conducted into script typology. Justeson (1976) incorporated the study of writing into the Universalist theory of language¹⁴ in that as languages themselves writing systems are also subject to universal linguistic constraints. The typological-universalist approach was conducted through an empirical analysis where Justeson published a study on fifty language/script pairs. This work aimed to establish a number of universal regularities and statistical tendencies that govern how writing systems represent their languages.¹⁵ Justeson divided these scripts into two distinct, but crude categories, a summary of his criteria is:

- A script is classified as *syllabic* if and only if many signs represent multi-phonemic units, at least one phoneme in each unit being a syllabic nucleus.
- A script is classified as *alphabetic* if single signs only represent consonants only or only vowels. Also if a diacritic is used in differentiating the syllabic nucleus then and is regularly used with a single meaning.

On the surface, Meroitic exhibits distinct graphemes for vowels and consonants that could classify the script as *alphabetic*. However, once the system of Meroitic writing is understood this classification has to be revised. The Meroitic consonant graphemes all contain an unmarked /a/ vowel (y *m*-/ma/) thereby representing a CV sequence with the /a/ being the syllabic nucleus and accordingly the script should be classified as syllabic. The three other vowel graphemes (i, u, ə) can be seen as a deviation or exception to the syllable based principle of the script as they are not of a CV sequence

¹² Davies (1990:133) states that 'although it [Meroitic script] looks alphabetic, Meroitic is in fact a syllabic system'. Shimite (1967) refers to the script as alphabetic. Jensen (1970:79) believes the two forms of script are 'pure alphabetical scripts (apart from two syllable-signs)'. The mistaken classification of Meroitic as alphabetic is seen in the literature that predates Hintze's accepted reanalysis of the principles of the Meroitic script. For more work on the typology of scripts see Bright (2000), Galb (1963), DeFrancis (1989), Coulmas (1989, 2003), Sampson (1985), Daniels & Bright (1996).

¹³ See Jensen (1970:106-114).

¹⁴ See Greenberg (1963, 1966a, 1966b 1975).

¹⁵ This theory has wider implications when used for reconstructing 'dead' languages. See Jakobson (1962) on the importance of synchronic universals in validating reconstructed phonological systems. See Justeson & Stephens (1978) on the reconstruction of Minoan phonology using language universals.

but only V. However, as they always follow a consonant grapheme¹⁶ (and thereby change the quality of the unmarked /a/ to their own specification) they keep the CV type sequence and hence syllabic. Furthermore, Old Persian Cuneiform being one of the sample scripts in the study also follows the same organisation principles as Meroitic and which Justeson positions in the syllabic category.

1.2 Meroitic within the Universalist approach to script typology

Meroitic complies with the unrestricted universals that were without exception in Justeson's sample study:

- (i) All writing systems distinguishing any phonemes contain signs distinguishing some consonantal phonemes.
- (ii) No writing system represents either long or geminate consonants.
- (iii) Few writing systems distinguish all their phonemes.
- (iv) Most writing systems over-represent some of their phonemes.

Meroitic contains consonantal phonemes as in (i), it does not represent long or geminate consonants (ii), it has to be debated whether the Meroitic graphemes do cover the full phonemic inventory (iii) and Meroitic over-represents some of its phonemes (/n/, /s/ & /l/) by utilising a consonantal sign with an inherent unmarked vowel and a syllabic sign. The over-representation of phonemes is seen in certain types of scripts. As Justeson points out 'over-representation is presumably discouraged less in scripts with few signs than in those with many' (1976:61).

Justeson's study largely substantiates his main premise that there is a direct correspondence between universals in speech and linguistic universals of writing. He found that overall 'a constraint on co-occurrence of phonemes in speech also corresponds directly to a constraint on the representation of phonemes in scripts in any language' (Justeson 1976: 78). Further investigations into this line of research may elicit a deeper understanding of the organisational principles of the Meroitic language that underlies the script.

2 Meroitic vowels

The vowel inventory of Meroitic as initially proposed by Griffith (1911) and revised by Hintze (1971, 1974)¹⁷ exhibits a four-vowel system:

- (2) Unmarked a - *not transliterated*

ɣ	i
ʃ	o
ɤ	e

2.1 Meroitic a as a vowel and a no vowel indicator

A very important part of understanding the functioning of the script is the ambiguity of the schwa sign (ɤ). The Meroitic script was seen initially by Griffith (1911) to

¹⁶ In earlier texts it is found that the vowel signs ɣ /s/ and ɣ /l/ can stand word initial without being preceded by a consonant grapheme. Griffith (1911) proposed that in early writings these graphemes could have also had a consonantal value.

¹⁷ As pointed out in section 0.2 (ii) in his vowel inventory Hintze gives only the high back vowel /u/ and not /o/.

denote the omission of a vowel following a consonant by the grapheme ɤ e /a/. This grapheme has the ambiguous task of indicating a vowel or no vowel.¹⁸ This convention has further complicated proposals into the vocalisation of Meroitic, as there is no surface indication of when the vowel is realised or when it is not. Millet (1974:6) tends to limit this practice to the Meroitic inscriptions of Egyptian personal names and words. This is, he believes, because 'when a consonant cluster occurred in Egyptian names of the type that the Meroitic script (and presumably their language) made no provision for, it was their custom to insert the symbol for the weakest of their vowels between the two, since its omission would have involved the tacit expression of a stronger vowel.'¹⁹

However, Hintze (1971) gives a stronger argument in support of this grapheme's ambiguity as part of the Meroitic system of writing as he believes that the custom of writing ɤ e /a/ for a vowel or no vowel was not restricted to the transcription of consonant clusters of foreign words. Strong evidence for his proposal comes from the analysis of phonemic transformation. An often occurring phenomenon in the Meroitic script is that of Hestermann's Sound Law²⁰ where the combination of /s/ + /l/ results in /l/.²¹ This is only possible if /s/ and /l/ are adjacent (in immediate contact) without an intervening vowel. Therefore, the vowel e /a/ on the syllabic sign would in this context denote no vowel. When this occurrence is found it is the syllabic sign transcribed as *se* that is adjacent to the liquid /l/. Therefore, this is always /sʔ + /l/ > /l/ but /sə/ + /l/ remains unchanged.

2.2 The Meroitic vowel space

Hintze (1974:74) revised the Meroitic vowel inventory and described it by utilising the SPE²² rectangular vowel system, and gives the following forms:

- | | | | | | |
|------|---|---|------|---|---|
| (3a) | i | u | (3b) | i | u |
| | ɔ | | | ɔ | a |
| | a | | | | |

This paper proposes a revision to Hintze's vowel inventory in that vowel inventories are better characterised as triangular. Studies of the typology of phonological systems (Crothers 1978, Maddieson 1984) show that the opposition between high vowels is greater than the opposition between low vowels on the front-back dimension. This leads to the typologically marked category of languages that have two low vowels opposed for the front-back dimension (as in fig. 3b above). Hintze's inventory in fig. 3a is closer to the triangular vowel space dimension and is expanded upon in fig. 4 using the tridirectional vowel dimension:

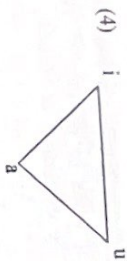
¹⁸ The indication of this grapheme's ambiguity comes from Egyptian loanwords where it is known a vowel is not present but where the Meroitic position /a/ cf. Griffith (1911)

¹⁹ This point refers directly to the system of the Meroitic script in that each consonant sign has an inherent unmarked /a/, to change the vowel quality the graphemes representing the other three vowels of their inventory follow the consonant. Therefore, Millet believes the stronger vowel is the unmarked /a/.

²⁰ Folia Ethnographica 1925-26.

²¹ This process is apparent with the suffixation of certain grammatical morphemes onto an item.

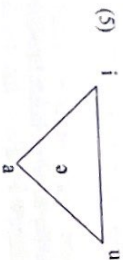
²² Chomsky & Halle (1968).



Further support for the proposal of using the tridirectional vowel space dimension is that all languages contain the vowels /i/, /a/ and /u/ and they also occur with greater frequency than any other vowel. These are also the vowels that can be predicted for languages that only have a three-vowel system. They are variously described as being 'corner, peripheral or 'quantal' (Stevens 1972) – the vowels that are particularly 'stable' acoustically. These vowels are maximally distinct both acoustically and articulatory and as such are phonologically basic. The peripheral vowels are also seen as the first vowels that children acquire. Greenberg (1966) showed that these vowels also have a frequency hierarchy of the pattern $a > i > u$. Typologically, vowel patterns frequently obey the principle of maximal perceptual differentiation as stated by Ewen and van der Hulst (2001) in that /i/, /u/ and /a/ are 'perceptually maximally distinct.'

2.3 The positioning of schwa

This paper positions the schwa vowel (represented in the Meroitic script as - *S*) at a mid-central placement in (5):

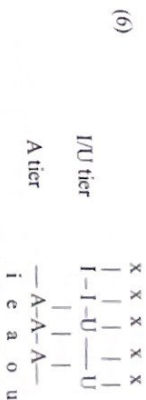


Crothers (1978:116) asserts that all languages that have four or more vowels have /a/, /i/, /u/ and /ə/ or /ə/. The fourth (schwa) vowel shows variation on positioning because of the available interior space and so can exhibit a range of phonetic qualities from openness, backness and roundness. It is evident that central or mid vowels have less well-defined acoustic properties than the corner or peripheral vowels. This paper uses the common symbol for the schwa - /ə/ as this symbol represents the neutral quality of this vowel and as such a definite placement (of this Meroitic vowel) cannot be assumed. However, in light of the investigations into universals of vowel systems and research on vowel typology it is ascertained that vowel phenomena tend to pattern evenly in the available phonetic space – the vowel space is used so that vowels are not bunched up into certain areas with other parts of the space being left empty. The placement of the schwa as mid-central in this paper shows the available interior vowel space used to its full availability in consideration of the above points.

3 Government Phonology elements theory

Within GP element theory (KLV 1985, 1990; Harris, 1990) the vowel space is defined as being of a 'tridirectional' (Ewen & van der Hulst, 2001) dimension, in compliance with the discussion given in §2. This theory is able to capture the internal representation of vocalic expressions by the certain combination or isolation of the three melodic primes or elements [i], [u] and [a].²³ The combination (or fusion) of

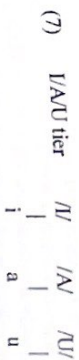
the element [A] with the element [i] results in the vowel *e*, the isolation of the element [A] gives the independent interpretation of the vowel *a*. These melodic primes each reside on their own autosegmental tier and allow the vowel systems found in the world's languages to be captured. An example of which is the vowel system for English where we do not find front round vowels. This is encapsulated by the parametric conflation of the [i] and [u] tiers:



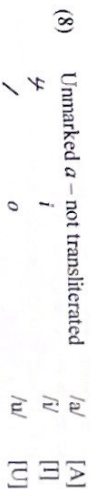
The distinction between tense and lax vowels in English such as /i/, /u/ etc. is explained by the incorporation into the theory of an asymmetrical governing relationship (that is language specific) between the elements that make up the vocalic expression. The governing relationship attributes headship (or status of governor) to one of the elements, and if a combination of elements is expressed, the role of operator or dependents to the governed elements.²⁴

3.1 Element representation of the Meroitic vowels

The Meroitic vowel system can be accounted for through the parametric conflation of the [i], [A] and [u] tiers prohibiting the fusion of all three elements. This conflation is in accordance with three-vowel system found in languages such as Classical Arabic.



Therefore, the Meroitic vowel system is defined in element terms as simple expressions:



Finally, this leaves the schwa vowel *S* *e* /ə/ represented in element terms as the realisation of the empty element [i]. This vowel has variously been described as 'cold' [v] (Kaye *et al.* 1985), 'neutral' [ə] (Harris, 1994) and 'centrality' (Anderson and Ewen, 1987).

In element theory the empty element covers the area that is non-palatal, non-open and non-labial. Languages differ with regard to the phonetic property of the schwa vowel. The specification for the varying placement of schwa in the world's languages can be accounted for by the combination of one of the elements [i], [A] or [u] with the

²³ [i] defines palatality, [u] labiality and [A] openness.

²⁴ See Harris (1990) for more on head/dependent asymmetry. See Charrette & Goksel (1998) for licensing constraints on vowels in Turkic languages.

empty element to describe the varying position this vowel can take in the available vowel space. The positioning for the Meroitic schwa in this paper is kept to the mid-central placement and as such no combination of the elements in association with the empty element is supported. This gives the vowel inventory of Meroitic with their element representation in (9):

(9)	Unmarked <i>a</i> – not transliterated	/a/	[A]
	<i>ɜ</i>	/ɜ/	[ɪ]
	<i>o</i>	/u/	[U]
	<i>e</i>	/ə/	[]

It can now be proposed that the Meroitic vowels /a/, /ɜ/ and /u/ are lexical vowels with the schwa as the realisation of an unlicensed empty nucleus. This assignment has repercussions on the vocalisation of the language and its implementation is expanded upon through the analysis of the constituent structure in section 4 onwards.

3.2 Meroitic vowel-zero observation

As discussed in §2.3 the Meroitic script uses the grapheme *S* transliterated as *e* that represents the schwa vowel /ə/ and which also stands for the absence of a vowel. What is striking about this usage of the apparent schwa grapheme and its implementation as a vowel-zero indicator is that throughout languages that show syncope/epenthesis phenomena mostly do so with a schwa vowel.²⁵

4 Government Phonology

Government Phonology (KLV 1985, 1990, Charitte 1990) is based upon the notion of principles and parameters where principles are inviolable and parameters express a system of language-specific facts. GP is primarily concerned with representations and follows the tenet that *processes apply whenever the conditions that trigger them are satisfied*, which stipulates that phonological processes which apply at different stages of a derivation are prohibited (as in Lexical Phonology). Kaye states that 'derivations are assumed to be 'blind' in the sense that no process is aware of the history nor the future of any derivation in which it is involved' (1995:290). Representations are assigned into their constituent structures where the phonological information is positioned on a skeletal tier that consists of timing slots. The skeletal tier is assigned governing and licensing relations that build into the constituent structure of onsets and nuclei. Each nucleus is dominated by a rhyme. These constituents may or may not branch depending upon the parameter setting for a given language. The governing relations between constituents are strictly local and strictly directional thereby

²⁵ Vowel-zero alternation in Moroccan Arabic involve the high central schwa [ɪ]:

- (i) tan kitb '1 lie'
 (ii) tan kitbu 'we lie'

Whereas Dutch uses the mid central schwa [ə] in vowel-zero alternations. One instance of this process is optional schwa epenthesis in the following forms:

- (i) help [help] – [hɛləp] 'help'
 (ii) balk [balk] – [bəlk] 'beam'

[Ewen & van der Hulst 2001:191]

See Charitte (1990) for an in-depth analysis of vowel-zero alternation and its explanation through GP.

allowing only maximally binary branching constituents. The principles and parameters that are relevant to the investigation of Meroitic are covered in this section.

4.1 Meroitic syllable²⁶ structure

The proposal that Meroitic syllables are mainly open was put forward by Griffith (1911:7)²⁷, who also assumed that the language contained closed syllables because 'the only two Meroitic names preserved by the Greek writers, Ἐπυαμῆρπς and Κανόακῆν seem to prove that closed syllables existed in Meroitic.'

This paper proposes that Griffith's argument for closed syllables in Meroitic was essentially correct but the evidence does not come from the Greek transcriptions but through the Meroitic script itself.

4.2 Word-internal closed syllables

*Kavóakῆn*²⁸ is the Greek transcription of a Meroitic loan word which is thought to mean 'king's sister' and has been retained as a cross-linguistic title for 'queen' – *Candace*.

- (10) *Kavóakῆn* Greek written form of Meroitic loan word
*Kandake*²⁹ phonemic transcription

$3\gamma 3\zeta 5 \sim 3\lambda 2\lambda 3$ Meroitic written variant forms³⁰
k i k e ~ k d k e transliteration
*Katakə/ ~ /Kadaka/*³¹ phonemic transcription

In the Greek loan-word there is a nasal segment preceding the stop, but in the Meroitic forms from where the Greek form was obtained, there is no nasal segment. We know that there is a nasal syllable sign (λ η) that contains the schwa vowel, and as Griffith, and Hintze have outlined, the Meroites implemented the use of the schwa grapheme *S* to indicate the absence of a vowel – so why is the Meroitic word not

²⁶ The syllable does not have a formal theoretical status in GP, however, it is a convenient informal label for what is in GP an onset-rhyme sequence.

²⁷ Griffith (1911:7) 'Vowelless consonants also are frequent both at and before the end of words, and not infrequently collections of three or more consonants are seen.' At the time of writing this description, the syllable based structure of Meroitic was not investigated thoroughly and so the collections of three or more consonants would contain the unmarked inherent /a/ vowel as proposed by Hintze (1971, 1974).

²⁸ It is noted that in loanwords the consonant cluster 'vr' /nv/ becomes /d/ in Modern Greek, however the transcription is given by Griffith not as *Kavóakῆn* but with 'vð' as the written cluster using the grapheme for delta and not tau.

²⁹ The phonemic transcription of this word is slightly tentative here as it is a query as to what period this Greek loan-word is written. The delta sign is pronounced closer to the coronal stop /d/ in Classical Greek pre 300 BC, thereafter in Modern Greek, it is an inter-dental fricative. There is the same unstable phonemic assignment with the final eta sign, in Classical Greek the vowel is central but has raised in Modern Greek cf. Allen (1987). At present, I am unable to investigate further the approximate dating of this word to clarify the exact phonemic transcription.

³⁰ Another variant spelling which does not concern this present discussion is $3\gamma 3\delta 5$ *Kne*, this is because it is the first two syllables of the word which are important for the above analysis.

³¹ The vocalisation of the seemingly word-final schwa grapheme does not concern this present analysis but is important to the discussion in section 6.5.3.

written with the nasal syllabic sign that should indicate no vowel between the nasal and the coronal stop as in (11)?

- syllabic sign used to indicate no vowel
- (11) $\begin{array}{c} \downarrow \\ * \alpha \lambda \gamma \xi \varsigma \sim \xi \lambda \alpha \xi \varsigma \\ k n^e i k e \sim k n^e d k e \\ /kan\alpha k a/ \sim /kan\delta a k \alpha/ \end{array}$

To reiterate this point, it must be remembered that the syllabic signs (bar one) indicate a coronal consonant followed by the schwa vowel (i) and so the single consonant signs are never used with a separate schwa grapheme (ii) for /s/, /n/ and /l/:

- (i) $\lambda \quad n^e$
 (ii) $*\lambda \xi \quad n e$

The script is capable of indicating a closed syllable for this word but the Meroites did not represent this; therefore, we can speculate that this closed syllable did not exist in the language *at the synchronic period of the language being assigned a writing system*. Consequently, an analysis of the constituent structure of the Meroitic word must be proposed.

4.3 Kavoðkɣ constituent structure in GP³²

The lexical representation of the Greek transcription would have the following constituent structure in GP:

- (12) $\begin{array}{ccccccc} & R & & R & & R & \\ & | & & | & & | & \\ O & N & \backslash & O & N & & O & N \\ | & | & | & | & | & | & | & | \\ x & x & x & x & x & x & x & x \\ | & | & | & | & | & | & | & | \\ k & a & n & d & a & k & e & \\ \uparrow & \text{---} \downarrow & & & & & & \end{array}$ Kavoðkɣ /kandakɣ/ 'king's sister'
- trans-constituent gov.*

The nasal consonant attaches to the branching rhyme which is trans-constituent governed by the following coronal stop in onset position.³³ To explain the Meroitic lexical form, which does not show the nasal segment, a stipulation of the syllabic structure has to be proposed:

³² This analysis is taken directly from Griffith's (1911) discussion, as Alex Bellem pointed out to me. Modern Greek shows the feature [+voice] on stops by a preceding (orthographic) nasal segment, it could therefore be the case that the nasal does not surface in rhyml position but is there to indicate the quality of voicing on the stop. The analysis of Griffith's Greek loan word needs further investigation into dating to determine a definite period. As such, there is further evidence that there could be a nasal segment in rhyml position in this word as Boidy (1989) notes in the modern day area of Merce the word is still used and pronounced as 'kandesa'. This loan word in Greek needs further investigation and so this is a tentative analysis at present.

³³ The coda licensing principle states that 'a rhyml adjunct position must be licensed by an onset position.'

Meroitic branching rhymes parameter³⁴ OFF

Why is this nasal element manifested in the Greek transcription in a consonantal position but not in Meroitic? It is proposed here that the nasal segment in Meroitic is attached to the first nuclear position rather than violating the parameter setting by attaching to the branching rhyme level. This produces a nasalised vowel on the initial syllable:

- (13a) $\begin{array}{cc} O & N \\ | & | \\ | & | \\ x & x \\ | & | \\ k & a & N \end{array}$ (b) $\begin{array}{cc} O & N \\ | & | \\ | & | \\ x & x \\ | & | \\ k & a & N \end{array}$

- (c) $\begin{array}{ccccccc} O & N & O & N & O & N & \\ | & | & | & | & | & | & \\ | & | & | & | & | & | & \\ x & x & x & x & x & x & \\ | & | & | & | & | & | & \\ k & \tilde{a} & t & a & k & [\alpha] & \end{array}$ Meroitic /kainka/ ~ /kaidaka/³⁵

Compare the nasal segment attaching to the rhyml position in the Greek forms:

- (14a) $\begin{array}{ccc} O & N & \\ | & | & \\ | & | & \\ x & x & \\ | & | & \\ k & a & N \end{array}$ (b) $\begin{array}{ccc} R & & \\ | & & \\ O & N \backslash & \\ | & | & | \\ x & x & \backslash \\ | & | & | \\ k & a & N \end{array}$

The nasalised vowel is not apparent in the Meroitic script because nasalisation was not notated. The nasal segment resurfaces in the Greek transcriptions as Greek does not contain nasal vowels and therefore it would attach to the branching rhyme in consonantal position.

This analysis can still support Griffith's proposal of closed syllables (word internally) but it is possible that they belonged to an earlier phase of the language before the writing system was implemented. This is possibly where evidence can be adduced that in a much earlier phase of the language the nasal was a consonantal feature, as if nasal

³⁴ This stipulation also has an implicational relationship on the occurrence of branching onsets within the language. See §2.1 on the Meroitic schwa insertion between consonant clusters in Egyptian loanwords thereby indicating that the language has the parameter set to OFF for branching constituents and rectifies loanword syllabic structure by vowel epenthesis.

³⁵ The variant form could be explained by the intervocalic voicing of the coronal stop. Another possible theory for the Meroitic variant form is the spontaneous voicing of the nasal could spread onto the stop and not the vowel thereby changing the voicing quality of the stop from /t/ to /d/ and the vowel remains oral. Further investigation is forthcoming in this area.

The two phonemic transcriptions of the data exhibiting the word-final syllable sign show the ambiguous indication of a vocalised schwa vowel or no vowel.

This section focuses on the omission of the final nasal syllable sign and its vocalisation, the vowel-zero analysis of the other schwa graphemes in the above data is discussed in section 6.5.3.

It can be seen that the final syllable sign λ /n/ is omitted when followed by the liquid-initial suffix when comparing (15a) and (b). This phenomenon lead Hintze to argue that the sign for the schwa is also used for no vowel and was part of the structure of the Meroitic language and not just for the transcription of foreign names. He believes that the omission of /n/ is because the schwa in these cases is realised as null and therefore the nasal is adjacent to the liquid (16). It is well attested through sonorancy sequencing that the nasal and liquid are too near on the sonority hierarchy to make a well-formed consonant cluster. However, here we have a case of morphological concatenation at the word-level. This level 'introduces segment sequences not found in un-derived and root-level forms' (Harris 1994:22).

(16) /salaqano||la/

It is now investigated as to how GP can account for these data.

6 A GP analysis of Meroitic final empty nuclei

We would expect an epenthetic schwa to be present in the forms of (15) to break up consonant clusters as the Meroites did for clusters in Egyptian names; if this is the case there would be no violation of the sonority⁴¹ hierarchy or Meroitic constituent structure (no branching constituents) as proposed in section 4.2. However, there is distinct omission of the word-final nasal syllable sign in certain suffixed forms. A GP analysis of these data can explain both the apparent omission of the final syllable in certain forms and its non-omission in others. This analysis can support Hintze's argument that in the assimilated forms the syllable sign's vowel is realised as zero and explain the non-omission of the nasal syllable sign in other forms where we would expect assimilation.

6.1 Nasal syllable sign with realised vowel

The lexical forms in (15a) are given below in (17) with their GP constituent structure showing the final syllable sign with a possible realised vowel and therefore the final nucleus is filled:

(17) O N O N O N O N O N 3 ʃ ʃ ʃ ʃ ʃ ʃ ʃ ʃ
 | | | | | | | | slegent
 x x x x x x x x /salaqano/
 | | | | | | | |
 s a l [ɔ] q [ɔ] n [ɔ]

⁴¹ Sonority is replaced in GP with segmental complexity.

When the definite article is suffixed the form will be (18):

(18) O N₁ O N₂ O N₃ O N₄ O N₅
 | | | | | | | | | |
 x x x x x x x x + x x
 | | | | | | | | | |
 s a l [ɔ] q [ɔ] n [ɔ] l a

As there is a filled nucleus (N₄) between the nasal and the liquid this will block any assimilation or deletion of the nasal segment as they are not adjacent. This structure gives the incorrect written form as:

(i) *3 ʃ ʃ ʃ ʃ ʃ ʃ ʃ ʃ
 slegent
 /salaqano/

Not only does this analysis give the incorrect hypothesised form as in (i) but it would contradict the proposal in section 3.1 that the schwa is not lexical but derived through unlicensed empty nuclei. We can now propose (following Hintze) why there would be no filled nucleus between these two segments to allow the deletion of the nasal to be notated.

6.2 Nasal syllable sign with unrealised vowel

The forms in (15a) are now analysed as having no vowel on the syllable sign resulting in a consonant final structure:

(19) O N O N O N O N O N
 | | | | | | | |
 x x x x x x x x
 | | | | | | | |
 s a l [ɔ] q [ɔ] n [ə] ← no vowel on the syllable sign - 'dull syllable'

Through the analysis of the Greek transcription it is already proposed that the parameter for branching rhymes is OFF in Meroitic. We can discount the possibility for a branching rhyme for the final consonant through the coda licensing principle⁴² as there is no filled onset position strictly adjacent to license the rhyme to branch in (19), if we propose that there is no vowel following the final onset. Even if we analyse these forms with their suffixes this last onset can still not become the coda as this will constitute a resyllabification and this is a violation of the projection principle⁴³ as in (20):

⁴² Kaye (1990) Post-nuclear rhyml positions must be licensed by a following onset.

⁴³ KLV (1990) Governing relations are defined at the 'level' of lexical representation and remain constant throughout a phonological derivation. As Brockhaus (1995:192) points out 'this principle allows for governing relations to be added in the course of a derivation while changing or deleting existing governing relations is prohibited.'

(20) *

	R	R	R	R
O	N	O	N	\
x	x	x	x	x
s	a	l	[a]	q [a] n l a

Not only does the above structure violate the projection principle but also the complexity condition⁴⁴.

The segmental element compounds of the nasal and the liquid would be:

- (i) n – {A, ?L}
 (ii) l – {A, ?l}

The complexity condition requires governors to be no less complex than their governees, here we have a violation of this condition as the governor /l/ in a trans-constituent governing position is less complex than its governee /n/, thereby making this constituent structure invalid.

How can we explain these forms and the constituent structure of Meroitic?

We can invoke the GP version of the Empty Category Principle (ECP):⁴⁵

Empty Category Principle

- (a) A p-licensed empty nucleus has no phonetic realisation.
 (b) An empty nucleus is p-licensed if (i) it is properly governed or (ii) it is domain-final in languages which parametrically p-license domain-final empty nuclei:

Proper Government

A nuclear position a properly governs a nuclear position b if

- (a) a is adjacent to b on its projection,
 (b) a is not itself licensed, and
 (c) no governing domain separates a from b.

GP recognises empty skeletal positions and their distribution is very tightly constrained by the ECP where only properly governed positions may remain empty and parametrically licensed domain-final positions. We are now in the position to propose a parameter setting for Meroitic:

Licensed domain-final empty nuclei YES⁴⁶

⁴⁴ KLV (1985, 1990), Harris (1990) initially proposed this condition on the theory of charm and government. In light of recent revised work on limiting the elements inventory which disposes of the theory of charm (due to its ability to over-generate) cf. Backley (1993), Jensen (1994).
⁴⁵ KLV (1990:219).

As proposed in section 3.1 that schwa is only realised as the phonetic interpretation of an unlicensed empty nucleus, we now have a nucleus that is p-licensed by being domain-final and therefore should have no phonetic content. This gives the following structure:

(21) O N O N O N O N O N
 | | | | | | | | | |
 x x x x x x x x x
 | | | | | | | | | |
 s a l [a] q [a] n

← p-licensed domain-final empty nuclei

This stipulation accounts for languages that only allow vowels in word-final position such as Italian where the parameter is set to NO so domain-final nuclei are always filled, and languages such as English that allow vowels and consonants in word-final position and so the parameter is set to YES.

This parameter setting allows us to account for the omission of the written nasal segment. However, two other factors have an implication on the omission of the nasal, these being: vowel-zero alternation due to sibilisation and morphological concatenation. In 6.3 vowel-zero alternation is now analysed where follows in 6.4 morphological concatenation.

6.3 Vowel-zero alternation

Vowel-zero alternation is meant here as the process where vowels are syncretized or epenthesized and in its most extreme form show 'alternating succession of syncretized and non-syncretized vowels that is iterated across the word domain' (Harris 1994: 191). GP is able to account for this phenomenon by invoking the phonological ECP as discussed in section 6.2.

The structure in (22) shows that when the suffix is attached the last nucleus N₁ is not itself licensed by being a filled (lexical) domain-final category, as it is adjacent to N₂ on the nuclear projection and there is no governing domain separating them, it is therefore properly governed N₂ and as the ECP states a properly governed nucleus is p-licensed and therefore receives no phonetic interpretation, the stem word is already p-licensed by being domain-final and so this nucleus receives no phonetic content and hence, is inaudible. The structure in (22) supports the theory that there is no vowel following the nasal:

(22) O N O N O N O N O₂ N₂ O₁ N₁
 | | | | | | | | | | | |
 x x x x x x x x x x x
 | | | | | | | | | | | |
 s a l [a] q [a] n ←→ l a

↑ proper government

adjacency of onsets 1 & 2

⁴⁶ The two parameter settings of branching rhymes OFF, domain-final empty nuclei YES is in accordance with the four-way setting of the classification of languages' syllable typologies such as Luo a Nilo-Saharan language which shares this classification with Meroitic see Kaye (1990).

The structure now shows that there is an adjacency of the onsets (O_1 & O_2) containing the liquid and nasal and consequently the nasal deletes. The reasons into why the nasal deletes is given in section 6.4.

As the form in (22) is distinct in the data of (15) as having consecutive schwas that would also be subject to proper government, we will now see in (23) how this process can apply across the word:⁴⁷

As this form contains schwa vowels leftwards of the properly governed nucleus and we have stated that schwas are only realised as the interpretation of an unlicensed nucleus, they are also applicable to proper government:

(23)	O	N	O	N ₄	O	N ₃	O	N ₂	O	N ₁	
	x	x	x	x̄	x	x	x̄	x	x	x	
	s	a	l	q	[ə]	n	l	a	l	a	

↑-----↑-----↑-----↑-----↑ *proper government*

As N_2 is properly governed (therefore inaudible), it cannot license N_3 and so N_3 receives phonetic interpretation, N_1 being unlicensed is able to properly govern N_4 , which receives no phonetic interpretation. This would lead to the form having the vowel placement of /salqanla/ where only the schwa of N_3 has phonetic content. We are now in a position to account for the omission of the nasal segment.

6.4 Morphological concatenation

The Merotic forms now have to be analysed to see whether the morphological structure is visible to the phonology. Two types of morphology are relevant to this present analysis⁴⁸ these being *analytic* and *non-analytic*. An analytic form will carry domains to the phonology whereas non-analytic will not:

Analytic⁴⁹ - [[A]B]
Non-analytic⁵⁰ - [AB]

The lexical item and its suffix of (23) analysed as an analytic form has the following structure [[A]B]:

⁴⁷ Cf. Nikiema (1989) and Charate (1990) for discussion on this process in Tangale but where lexical vowels are subject to proper government. See Charate (1991) for licensing accounting for French data.

⁴⁸ For more information on the morphology/phonology interface see Kaye (1995).

⁴⁹ This morphology is seen as being stress neutral, productive, no lexical selectivity and no closed syllable shortening which explains forms in English such as [[re-]p[e]d]. Lexical Phonology terms this stage as Level 2.

⁵⁰ This morphology shows that primary stress is affected, lexical selectivity and closed syllable shortening takes place, consider the word [pæntɪl] with its non-analytic suffix [pæntɪl] showing the movement of the primary stress. Within Lexical Phonology this is Level 1.

(24)	Analytic form	<i>analytic domain barrier</i>	↓									
	[[O	N	O	N	O	N	O	N	|	O	N]
	x	x	x	x̄	x	x	x̄	x	x	x	x	x
	s	a	l	q	[ə]	n	l	a	l	a	l	a

The final nucleus in the first domain is still domain-final p-licensed but the onset preceding this nucleus is not adjacent to the onset of the suffix because of the domain that separates the two forms.⁵¹ If the Merotic morphology was analytic we would expect to find no omission of word final /n/ as the analytic domain is a barrier to the assimilation and the form should be /salqanla/, however, we do see this omission of the nasal and therefore a non-analytic morphological form can account for this omission:

(25)	Non-analytic form	<i>adjacency of onsets</i>									
	[O ₁	N	O ₂	N	O ₃	N	O ₄	N	O ₅	N]
	x	x	x̄	x	x	x	x̄	x	x	x	x
	s	a	l	q	[ə]	n	←→	l	a	l	a

Because there are no internal domains the non-analytic morphology will be invisible to the phonology. What happens now is that we have an adjacency of the two onsets 4 and 5 this causes an OCP⁵² violation. The two onsets both share an alveolar place of articulation specification. As Harris points out 'the OCP...remains active during derivation. In this guise, it intervenes in a language-particular manner to block processes which would violate it or to set off processes which repair such violations. In the latter function, the convention triggers coalescence of identical melodic expressions, which accidentally become juxtaposed as a result of morphological concatenation.'⁵³ This affects so-called 'fake' (i.e. non-lexical) geminates, such as the *mm* in *hammered*:⁵⁴ (1994: 173)

It can be proposed that there is regressive assimilation⁵⁵ of the segmental material from onset 5 to onset 4 /n-/ resulting in /l-/ which gives the following structure⁵⁶ which is in compliance with the hypothesised form given by Hintze (1979:62) and

⁵¹ This analysis is in some way contradictory to the analysis of *unreal* or *unlawful* in Kaye's (1995) discussion where he proposes that the reason why *un-* is insensitive to what consonant follows it is because 'they are separated by an empty nucleus' and not that they are of the domains [[A]B]].

⁵² Obligatory Contour Principle (initiated by Lehben 1973) but here following Harris (1994:172) 'at the melodic level, adjacent identical units are disfavour'd.'

⁵³ Rilly (1999b) discusses the theory that there is a process of assimilation in Merotic due to adjacent segments sharing a labial place specification.

⁵⁴ Kiparsky (1985:97-98), Avery and Rice (1988) argue that coronals are more prone to undergo assimilation processes than other places of articulation.

⁵⁵ This type of regressive assimilation is evident in languages such as English: in-logical - illogical, Kiamah (Barker 1964): honlina -hollina and Ponapean (Reing and Sobl 1981:57): nan-feng -naling.

also Millet (1971) who also proposed assimilation.⁵⁶ This phonological analysis is now able to explain why in the written form we find omission of /h/ but the stability of /l/:

(26)	[O ₁	N	O ₂	N	O ₃	N	O ₄	N	O ₅	N]
	x	x	x	x	x	x	x	x	x	x
	s	a	l	q	[a]	l	a			

The structure in (26) gives us the correct written form (as of 15b)⁵⁷ in (27) below:

- (27) **355/355**
slēqel-l
 /salqql-hl/ - the schwa in bold should therefore be unrealised.

However, because the structure in (26) shows that the skeletal position has not deleted⁵⁸ but is now associated with onset 5, the word should be vocalised with a 'fake' geminate of the liquid⁵⁹ along with the correct realisation of the schwa vowels as in (28):

- (28) /sɪlqɪl-hl/

The reason why we don't see this assimilation resulting in the 'fake' gemination of the liquid is because of the nature of the writing system. Hintze (1971, 1974) already observed that the transcription of geminates in Meroitic could not be indicated.⁶⁰ We can hypothesise the following Meroitic word exemplifying why geminates were unwritten:

- (29) *355/355
slēqel-l
 /salqqla-hl/

This would lead to the erroneous vocalisation of the inherent unmarked /al/ vowel surfacing on the first liquid, and so the geminate is omitted from the script and only one segment position is written.

⁵⁶ These proposals were put forth by Hintze and Millet without a phonological analysis but through evidence from the script.

⁵⁷ The analyses presented here go somewhat towards a reformation of Aubin's (2003) proposal that the grapheme /l/ could have been a VC sequence through letter repetition, where the inherent vowel is assimilated before the consonant rather than following. If her proposal is correct we would see no subject to the ECP and therefore does not alternate with zero.

⁵⁸ This would constitute a violation of the Projection Principle (Kayne 1995).

⁵⁹ 'fake' geminates are formed across a morpheme boundary and 'true' geminates are internal to a single morpheme.

⁶⁰ See also Rilly (1999b) for a discussion on the haplography of geminate consonants and the schwa sign in Meroitic.

The analysis of the above forms leads us to conclude that the /n/ grapheme (X) could be a 'dull syllable' that there is no vowel on the syllable signs in these forms, also following Harris's discussion that in more ancient 'eastern' traditions a word-final consonant occupies the onset of a 'dull' syllable – one that lacks an audible nucleus and this is characteristic of all syllables (1998:141). This analysis supports Griffith's observation that Meroitic did contain closed syllables but the evidence comes from the script itself rather than from the Greek transcriptions.⁶¹ This section concludes that the forms in (15a) and (15b) should have the phonemic transcription as in the square brackets:⁶²

(i)	355/355X	(ii)	355/355
	<i>slēqenⁿ</i>		<i>slēqel-l</i>
	/salqan ⁿ /		/salqql-hl/
	[salqan]		[salqqla]
	≤ wξ ≤ 5X		≤ wξ ≤ 554
	h r p h e n ⁿ		h r p h e-l
	/harapahn ⁿ /		/harapaha-l/
	[harapahn]		[harapahlh]
	≤ l ≤ X		≤ l ≤ 5
	h b h n ⁿ		h b h-l
	/habahan ⁿ /		/habaha-l/
	[habahan]		[habahala]

6.5 No omission of word-final/n/

The forms in (15c) show no assimilation of the word-final nasal segment when a liquid-initial suffix is attached. How do we account for this? Rilly (1999a) in his analysis of the word for 'ruler' *gore* proposes that there were two levels of the script functioning: one is the colloquial language that notes an assimilation that is evident with this lexeme and the other is the official language which retains the root segment which is a valuable consideration on why there are disparate forms between the same lexical items.

The analysis of the form below (i) needs further investigation into whether it is due to the morphology of the suffix, as this is written on a stèle and as such following Rilly is an official document which should not show the assimilation as this example complicates with:

- (i) **355/355X5/**
slēqerⁿ-hl
 /salqanⁿ-hl/ noun + suffix
 REM 0510

⁶¹ In the case of the syllable signs it is proposed that in actual fact they form a class of closed syllable indicators, ones that *do not* contain a vowel, as they belong to the coronal class, this theory, as Monik Charlet pointed out to me, has comparisons with languages such as Chinese, Mandarin, Finnish etc. which also have only closed syllables drawn from a set of coronal consonants. Further research into this area is forthcoming.

⁶² The lexical vowels are not subject to the ECP and proper government.

If we move onto the two other forms of (15c) that do not show assimilation we can see that they are liquid-initial adjectival suffixes:

(i) ⁶³	ʃʃ/ωʃʃʃʃ	(ii)	ʃʃʃʃʃʃ
	<i>qur e n² lh</i>		<i>t t n² lh</i>
	/quran ² -lahal/		/atan ² -lahal/
	noun+adj.		noun+adj.
	REM 0521		REM 1065

We could say that there is no assimilation in these cases with adjective suffixes because of the forms having analytic domains (a barrier to the assimilation), this proposal is discounted straightaway as we find the following form in (30a) with the omission of the nasal syllable grapheme when this adjective is suffixed (30b):

(30a) ⁶⁴	ʃʃʃʃʃʃʃʃʃʃʃʃ	(b)	ʃʃʃʃʃʃʃʃʃʃʃʃ
	<i>y e t me n¹ me t² l</i>		<i>y e t me t¹ lh l</i>
	/y ³ -tamtanθ- <i>met²-la/</i>		/y ³ -tanmata-laha-la/
	prefix+noun+adj. + suffix		prefix+noun+adj. + suffix

If we analyse the forms in (30a) and (30b) with proper government, we can see again that it disallows the nucleus from being realised after the nasal (31), whereby when it comes to be adjacent to a liquid-initial suffix (32) the assimilation takes place:

(31) ⁶⁵	O	N	O	N	O	N	O	N	O	N	O	N	O	N
	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	t	a	m	t	a	n	e	←	e	m	[a]	t	a	a

no assimilation of nasal + stop
[y³-tamtan-met-la]

(32) ⁶⁷	O	N	O	N	O	N	O	N	O	N	O	N	O	N
	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	t	a	m	t	a	n	e	←	e	m	[a]	t	a	a

assimilation of nasal + liquid

⁶³ This form is also found with an assimilation of the word-final nasal syllable sign. Rilly (1999a) investigates this as evidence for two levels of the script functioning: one that notates the assimilation and the other that does not.

⁶⁴ Data taken from Hintze (1971: 330) though no REM number given.

⁶⁵ REM 0217.

⁶⁶ Schwab on affixes are discussed in section 6.5.3.

⁶⁷ In this example we have evidence again that the syllable signs could be closed syllable indicators - /y- /e /t/ in this form has a properly governed empty nucleus and so no vowel is realised.

The structure in (33) through proper government shows an adjacency of the nasal and liquid triggering the OCP where the resulting form is one where the nasal has deleted and this timing slot is replaced by the regressive assimilated liquid:

(33)	O	N	O	N	O	N	O	N	O	N	O	N	O	N
	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	t	a	m	t	a	a	h	a	h	a	l	a	a	a

[y³-tamta-laha-la]

As this paper has investigated the assimilation is not due to the grammatical status of the suffixes (and therefore the analytic morphological domains) but because of domain-final p-licensed and properly governed nuclei being unrealised and so allowing an adjacency of nasals and liquids, it has to be explained why this assimilation is not apparent in the forms of (15c) or in those of (34):

(34)	ʃʃʃʃʃʃ	ʃʃʃʃʃʃʃʃʃʃʃʃ	ʃʃʃʃʃʃʃʃʃʃʃʃ
	<i>l q n¹ l</i>	<i>a r e n¹ l</i>	<i>m k s h n¹ l</i>
	/aqaṅ- <i>la/</i>	aren- <i>la/</i>	/maka-sahaṅ- <i>la/</i>
	noun+def.	noun+def.	noun+noun+def.
	REM 1044	REM 1044	REM 1044

	ʃʃʃʃʃʃʃ	ʃʃʃʃʃʃʃʃʃʃʃʃ	ʃʃʃʃʃʃʃʃʃʃʃʃ
	<i>t r u n¹ l</i>	<i>w n¹ l i</i>	
	/arun- <i>la/</i>	wan- <i>li/</i>	
	noun+def.	noun+def.	
	REM 1003	REM 0278	

What these forms have in common with the two forms in (15c) is they are all disyllabic and monosyllabic words.

Does Meroitic impose a minimal word constraint whereby no assimilation of the consonant final segment and the consonant initial suffix can take place?

6.5.1 The OCP and haplology

Investigations into morphological haplology might indicate the reasons behind these forms. Plag (1998: 199) cites recent approaches to haplology have stressed that it is best described as the avoidance of identical phonetic or phonological material in morphologically complex words and 'Haplology in one form or another, seems to occur in almost any language with enough morphology to create phonetically identical sequences.' As Meroitic is an agglutinative language and as such has a rich morphological structure we should definitely find cases of haplology. The Meroitic forms in (34) comply with research into haplology that reveals disparateness between

⁶⁸ I argue elsewhere (forthcoming) that the initial grapheme ʃʃ actually represents the /h/ phoneme and not a vowel initial sequence as has long been transcribed, thereby it is a consonantal grapheme including the unmarked /a/ vowel.

polysyllabic and disyllabic words. Dressler states 'thus haplology is rare in disyllabic words' (1976:45). It presupposes at least three syllables. De Lacy (1999) also discusses haplology having a constraint on words that are too small (or of only one mora) and so there is no haplologising of adjacent segments. He also sees haplology as coalescence rather than deletion of segmental material and Lawrence (1997: 382) gives evidence from Japanese that haplology also occurs in cases where the elements involved are not segmentally identical.⁶⁹

This paper has invoked the phonological OCP 'at the melodic level adjacent identical units are disfavoured' in the morphologically complex forms of Meroitic, Plag's (1998) definition of haplology correlates it as functioning in the same manner as the phonological OCP, it can therefore be proposed that there is a constraint on the OCP in Meroitic that disallows its application when words are of minimal length.

6.5.2 Domains as a barrier to the OCP⁷⁰

What could be a barrier to the occurrence of this type of OCP in Meroitic? It can be proposed that the minimal word⁷¹ has to be made up of at least three onset-nucleus pairs and any item of this length or under prohibits the application of the OCP and therefore no assimilation takes place:

(35) O N O N O N

This proposal can be discounted when we analyse an item (of three onset-nucleus pairs) that does not show the assimilation with a hypothetical assimilation when the liquid-initial suffix is attached:

(36) *O N O N O N O N
 | | | | | | | |
 x x x x x x x x
 | | | | | | | |
 t a r u n ←→ l a

 p-licensed empty nucleus

OCP adjacency of nasal & liquid

This structure would result in a process of regressive assimilation whereby the liquid spreads into the nasal's onset position:

(37) *O N O N O N O N
 | | | | | | | |
 x x x x x x x x
 | | | | | | | |
 t a r u | a

⁶⁹ In Japanese the segments /si/ and /ji/ haplologise, they differ with regard to their place of articulation but share manner specification.

⁷⁰ This section is part of an ongoing investigation see Rowan (forth - Meroitic Phonology, PhD thesis) and as such is work in progress.

⁷¹ Systems that impose minimal length restrictions typically allow deviations in the non-lexical vocabulary. McCarthy and Prince (1990) note that the major deviations from bi-moracity in Arabic include mono-moratic particles (*wa* 'and', *bi* 'in') and a handful of nouns such as *ʔab* 'father', *ʔax* 'brother', *dam* 'blood' etc. They believe that the nouns are restricted to kinship and body part terms possibly reflecting an obligatory possessive affix at an earlier stage in the language.

The erroneous structure in (37) shows there would be no violation of the minimal word structure as the liquid assimilates into the nasal's onset position and therefore does not disrupt the minimal number of onsets. It now therefore has to be declared that there is a barrier to this assimilation process in words of three and under onset-nucleus pairs. Following Charrette's (2004)⁷² definition of domains (where her investigation is applied to Turkish), she proposes that domains refer to the structure of words and that their phonological structure is fixed.⁷³ This paper proposes that the phonological structure of Meroitic words is made up of three onset-nucleus pairs within the domain:

(38) O₁ N₁ O₂ N₂ O₃ N₃
 | | | | | | | |
 [x x x x x x x]
 | | | | | | | |
 t a r u n

This domain structure now allows us to account for the non-assimilation seen in words that are of three or less onset-nucleus pairs. The word-final nasal is unable to assimilate with the liquid-initial suffix as there is a domain and it therefore forms a barrier to this process.⁷⁴

(39) O₁ N₁ O₂ N₂ O₃ N₃ O₄ N₄
 | | | | | | | |
 [x x x x x x x] x
 | | | | | | | |
 t a r u n ←→ l a

no assimilation

This ongoing investigation can, at this stage of the analysis, allow an account for the non-assimilation of the words in (34).

6.5.3 Can schwa be word-final?

This paper has stated that schwas in Meroitic are only realised as the manifestation of an unlicensed empty nuclei, it therefore follows that we should never find them word-finally as this position is p-licensed and as such they are inaudible (unrealised). In section 4.1 the Meroitic word *ʔjʔjʔ* *ʔke* /katak/ was analysed into its constituent structure (the nasalsation of the initial vowel is not relevant to the discussion here) where it was seen there is a schwa word-finally. As the parameter setting was set to yes for word final empty nuclei being p-licensed and hence inaudible, this schwa

⁷² Charrette's (2004) analysis of Turkish develops Denwood's (1998) account of Turkish words as having a template structure, (following an initial proposal made by Goh (1996) that Beijing Mandarin words are formed of a template).

⁷³ The reader is referred for more on Charrette's (2004) discussion in this volume where she proposes template as referring to the morphology and domains to the structure of words and the fixed phonological structure of Turkish words which are composed of two onset-nucleus pairs.

⁷⁴ This domain structure is not an analytic domain morphological form but a fixed phonological structure.

should be unrealised as well. If this is the case, the organisational principles of the script would be perplexing.

There is strong evidence from the analysis presented in this paper that the three syllable signs transliterated with the schwa ($/\gamma/$, $te/\tau/$, $\nu/\nu/$, $se/\zeta/$ and $\lambda/ ne/\eta/$) could be indicators of a 'dull' syllable, ones that do not contain a vocalised nucleus. As these syllable signs are drawn from the class of coronals and the script contains these same coronals as single signs with the inherent unmarked $/a/$ ($\gamma/\tau/\nu/$, $3/\zeta/$ and $\lambda/\eta/$) it is plausible that the Meroitic language has closed syllables drawn from this class only. What we should not expect to find is the other classes of phenomena closing a syllable such as $/k/$ or $/s/$ as in *ake* if it follows that the schwa is unrealised by being word final p-licensed, if so, we would expect all single signs with the inherent unmarked $/a/$ to then have a correlative 'dull' syllable sign which they do not. What are the implications of this proposal when (apparent) words ending in a schwa are present in the Meroitic script? When single signs followed by schwa are found word-finally, could they be indicative of a morphological item?⁷⁵ The form *ake* in section 4.1 could be analysed with *kr* as the stem word and *ke* as a morpheme:

(40)⁷⁶ Meroitic /kākaka/ ~ /kādaka/ 'king's sister'

Domains	Phonological	Morphological
	[k ā t a]	+ [k e]

The investigation into this area is ongoing where it is hoped that an analysis of word-final consonantal signs followed by the schwa sign will elicit a deeper understanding of its ambiguous use as a vowel and vowel-zero indicator and further research into the morphological boundaries of Meroitic.

7 Concluding remarks

This paper has sought to address certain aspects of Meroitic phonology within the framework of a current phonological theory (GP). An investigation into Meroitic loanwords in Greek has predicted that nasalised vowels are to be found in Meroitic (and not just from Egyptian transcriptions) whereas the Greek form notes the nasal in consonantal (branching rhyme) position, from this the proposal that Meroitic contains no branching constituents has been put forward. This theory has also been able to explain the omission of the nasal segment in comparative suffixed forms through setting the domain-final p-licensed parameter to *yes*, the result of this is (in accordance with Hintze) that a geminated form results from regressive assimilation. The hypothesis initially proposed by Hintze and Millet is encapsulated within a phonological framework. Where this process does not take place in the expected environment further forthcoming research hopes to elicit an understanding of the domain of the minimal word as a barrier to this OCP type constraint and to the audibility of schwa when found word-finally in Meroitic.

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⁷⁵ In the same way they can be found word-initially as in $ye/\nu/\tau/$.

⁷⁶ This structure is very tentative at present and is given here as a rough indication of how the word cannot end in schwa by having the p-licensing parameter set to yes.

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Root infinitives in Modern Greek: new evidence and analysis from child Greek

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0 Introduction

In this paper, we will try to assess some of the new evidence about Root Infinitives (RI henceforth) and RI analogues from the data in Modern Greek. The outline of the paper is roughly as follows: in the first part there is a brief literature review which will give the reader some basic information about the state of art of RI from the most recent research papers. In the second part there is the analysis, which consists of the following to analyse and look at through the Greek data:

- agreement distribution
- *-i* form 3sg and other 3sg; *-i* form. in non-3sg context
- overuse of the *-i* forms
- distribution of [+past] verbal forms across all 3sgs
- null subjects in *-i* forms
- use of perfective vs. imperfective form in *-i* forms
- use of non-finite forms and the omission of clitics
- correlation between determiner drop and use of RIs

From all the above, we will try to give some new information and evidence in what concerns the status of RIs in child Greek and consequently some of the implications of the same phenomenon in other languages.

Finally, in the last part of this paper, there are some of the conclusions of the analyses with some proposed solutions and consequences from this research and a brief outline of further research from this piece of work.

1 Root infinitives – the state of art

A particular area of grammar where children seem not to converge immediately on the adult target concerns the requirement that matrix clauses are finite. Children acquiring various languages, including German, Dutch, French, and Swedish show a robust RI effect. The age at which the phenomenon occurs is roughly between **2;0 and 2;6**. During this time RIs constitute 30% - 70% of the children's verbal utterances. The remaining verbal utterances are adult-like finite clauses. Thus, RIs occur side-by-side with well-formed finite.

Interestingly, the RI phenomenon is not a universal property of child language. Children acquiring Italian, Spanish, Portuguese and Catalan do not show an RI stage; in other words we could say that RIs do not occur in languages with syntactically strong agreement. Although children acquiring the rich AGR/null subject languages do not exhibit an RI stage, they do produce bare participles (i.e. participles unsupported by an auxiliary).

On the other hand, English-speaking children also go through a stage, analogous to the RI stage, in which we find a very high percentage of bare forms, i.e., uninflected verbs.

However, the early English bare verb structure does not typically have a modal interpretation like the other RI/RI equivalents do. The English bare verb has either a present tense meaning or, less frequently, a past tense meaning.

There are two important properties regarding the RI stage. First, during this stage children produce both finite and non-finite verbs in root clause. In fact Wexler (1994) argues that children know the difference between finite and non-finite clauses, i.e. in terms of movement, children know that finite verbs raise and non-finite verbs do not. A second important property related to the RI stage is that when finite forms are used they are used correctly, i.e. despite the rather limited agreement paradigm, there are no agreement errors (Poeppel & Wexler, 1993). Both of these facts indicate knowledge of the adult grammar despite the unproductive use of agreement at this stage. The idea of early knowledge of inflectional morphology is formalised by Wexler (1998) as the hypothesis of *Very Early Knowledge of Inflection (YEKI)* and by Hoekstra & Hyams (1995) as the hypothesis of *Early Morphosyntactic Convergence (EMC)*.

One of the most important findings emerging from the investigation of RIs in early grammar is that the subjects of these sentences are typically null, while the subjects of finite clauses occurring during the same period are typically overt. The high rate of null subjects in RI contexts supports the claim that RIs are indeed non-finite. As non-finite clauses they provide a licensing context for the null subject, analogous to the situation in the respective adult languages, which license PRO in embedded infinitival clauses.

Moreover, various studies have dealt with the semantic properties and meaning of RIs across the different languages and their similarities. It has regularly been observed that there is a constraint on the aspectual nature of RIs in languages such as Dutch and French, which is that only eventive verbs show up as RIs, while stative verbs typically require finiteness. In Hoekstra & Hyams (1998) this is referred as the "eventivity constraint" on RIs. A second finding is that RIs typically receive a modal interpretation.

In what follows, we will look closer at the various studies related to RIs. Such papers and research give different aspects of the phenomenon and they will constitute the base of argumentation for this paper.

2 A prefunctional child grammar

Tsimpili's (1992) theory about the prefunctional stage in a child's language is very important for the present work, because it suggests the absence of functional projections in the child's grammar. Within this framework was embodied the first attempts to analyse the RI phenomenon in Greek and namely from Varlokosta, Vainikka and Rohrbacher (1996, 1998) (henceforth VVR), suggests that the IP layer and other connected functional projections are not present in the RI stage.

¹ Both the words "unproductive" and "limited" in what regards the distribution and use of agreement in child's language are controversial terms, as we can see in following parts, since not all researchers suggest the same. In our study, in fact, the results suggest the exact opposite of the above claim.

Tsimpili assumes that functional categories determine linguistic variation in terms of parameterisation. Within the grammatical model presented, the total of functional categories constitutes an independent module, independent in the language faculty. This is the Functional Module (FM), distinct from the lexical module, which includes lexical categories like noun, verb and adjective.

According to Tsimpili, UG principles are always available, but the functional module is subject to maturation and hence not available initially (18-24 months of age). The fact that the FM is subject to maturation explains why initially children omit functional categories, like articles, auxiliaries etc. This stage is referred as the prefunctional stage where the children do not use functional categories.

The notion of Maturation within the language acquisition theory has been supported by various researchers, namely Felix (1984), Borer & Wexler (1987), (1988), Guitiolye & Noonan (1988), Radford (1988), (1990). The hypothesis that there is a maturation process which effects the language development is plausible. The fact that certain properties of a biologically determined programme have to be available in specified timing conforms to the general idea that biologically determined development processes are restricted by maturation. The conclusion, in which the Maturation hypothesis about functional categories arrives, with respect to the structure of phrases during the prefunctional stage, is that the later one consists only of projections of the substantive categories.

Moreover, according to Tsimpili, children's phrases include only a VP. The subject is generated with the VP projection since the IP projection doesn't exist yet. Consequently, the elements associated to the IP projection, in particular modals, auxiliaries, are absent from the children's speech production. The absence of functional categories in the phrasal structures has a number of consequences regarding the linguistic availability of null subjects, the absence of movement as substitution processes, the absence of case assignment and the possibilities associated with the word order properties.

To summarise, the principal assumptions of the above-presented theory, are the availability of the UG principles via the language acquisition processes and the non-availability of functional categories, due to maturation relations. The notion of such prefunctional stage is important to this study since it has been proposed in various studies, as we show below, that the deficiency of agreement and null-subjects characteristic of the RIs, have as immediate consequence the lack of functional categories in the children's speech. Being more specific, in the first early attempt to explain RI the assumption was that RI is due to the lack of functional categories in the infantile grammar, which undergoes maturation in order to be adjusted according to the adult model. Such lack of functional categories was explained within the prefunctional grammar theory as well as other theories, e.g. small clauses theory. We will discuss in more detail the implications and consequences of such theories and debates.

3 The first approach in the analysis of RIs

One of the proposed views, made by Varlokosta, Vainikka & Rohrbacher (1996-1998), concerns the use of non-finite forms in infantile Greek. Modern Greek is a language without the infinitive option. According to VVR there are some verbal forms, which could

represent the Greek analogue of infinitive of the other child languages. Such candidates could be the following:

1. A verbal form combined with the "na" particle, which corresponds to the Greek subjunctive.
2. A verbal form con -i suffix, in both forms, namely, either with the perfective or the imperfective stem.

The first alternative has been immediately abandoned. VVR specifically argue against identifying the perfective as a child version of the subjunctive/future structure. On the other hand, the second option seems to hold the comparison with the infinitives of other languages, being (with the perfective stem) a participle² form, and hence less marked. VVR propose two stages of acquisition about -i forms:

1. Stage 1 (Spiros 1:9, Janna 1:11): where the -i form is used more than the half of the cases. A high rate is used in a non-3sg context. Verbal forms different from 3sg are rarely used and without over generalisation; this is a small evidence for AGR. There are no evidences for Tense or Modals.
2. Stage 2 (Janna 2:5, Mairi 1:9) (Maria 2:0 - 2:8): -i forms are used less than the first stage. Most of them are used in appropriate context of 3sg. The AGR paradigm is used productively. Modals and Future Tense are acquired.

(Varlokosta, Vainikka & Rothacher)

One of the major pieces of evidence in favour of the non-finiteness of the -i forms comes from the distribution of null and realised subjects across the corpora. Within Spiros' data (Varlokosta 1996) the over generalisation of the -i forms, occur mostly with null subject (without subject). The correct occurrences of the -i forms, 66% occur with null subject and 34% with realised subject, while in the incorrect occurrences the null subject rate arrives up to 86%. Realised subjects are predominantly used with correct agreement. Thus, a realised subject implies correct agreement, while incorrect agreement or non-agreement implies null subject use. The idea that Stage 1 is related with the absence of subject (and non agreement³) is confirmed from Janna's data, in which the percentage of null subjects is high up to 91%⁴ of all cases, either correct or not.

At this point, it would be useful to quote the following citation from Hyams, according to which:

² Such "participial" analysis has been the theme of a debate between VVR and Hyams in what concerns the analysis of RIs.

³ The question we address is: is there indeed evidence for two stages in the acquisition of Greek, in particular for an early stage during which children do not have agreement? We will deal with this question in the following section.

⁴ The percentage presented here regards both correct and incorrect cases; VVR do not propose any distribution with separated instances in their study.

The analysis of VVR's data does not seem to support the breakdown into stages or the claim that there is an early stage without agreement. The low error rate in early Greek is consistent with the agreement facts of most of the languages that have been examined, and argues strongly that the early grammar contains AGR. The agreement data also fail to support the claim of two distinct stages.

(Hyams 2002)

Since the over generalisation of the -i forms, occur rarely with a realised subject, unlike the situation presented in the finite verbs, the immediate consequence is another argument, i.e. treat the -i form like an early non-finite form, equivalent to the infinitive of other languages.

As a conclusion we can note that VVR argue that Greek children (and by extension, children acquiring other languages) go through a prefunctional stage, namely a stage during which the grammar lacks INFL related elements (Radford 1990, Tsimpli 1992). During this stage children only project the lower "lexical" part of the tree (VP, NP) and this gives rise to RIs and BPs (bare perfectives), which they take to occupy VP and ASPP respectively (Hyams 2002). VVR thus conclude that during Stage 1 the early grammar does not project Inflectional categories, such as AGRP and TP, in other words, that the grammar is prefunctional.

4 Bare perfectives

Children have essentially correct morpho-semantic mappings. The bare perfective (term due to Hyams 2002), like the RI, typically expresses the child's wish, need, and intention with respect to some eventuality. In other words, it has a modal or irrealis interpretation. Thus, the meaning is closest to what in adult Greek is expressed by the *na/itha* clause, i.e. the subjunctive mood except that it lacks the modal particle.

The obvious candidate for the bare perfective within this hypothesis is the adult's *na/itha* clause. In other words, the bare perfective is an irrealis clause that lacks a modal. The most valid argument against this hypothesis is firstly the fact that it obliterates the distinction between finite and non-finite clauses. Secondly, as proposed in all studies, there is the "trade-off" that occurs between bare perfectives in the child grammar and overt modals in the adult grammar. VVR note that during the bare perfective stage *na/itha* occurs very infrequently and they increase as the rate of bare perfectives decreases. Moreover, in the adult grammar, the verb embedded under *na/itha* can be either perfective or imperfective. In the child's grammar, in contrast, the irrealis form is overwhelmingly perfective as shown in VVR. Finally, in the adult language the verb inside a *na/itha* clause agrees with the subject, whereas in the child's grammar, the bare perfective is an invariant, i.e. non-agreeing form.

According to Hyams, the BP, like the RI, shares the following properties:

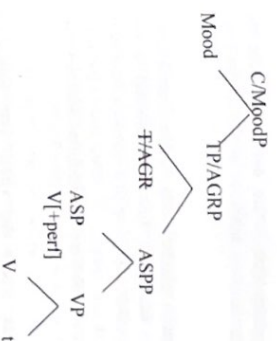
- It is arguably non-finite, as evidenced by the lack of productive agreement.
- It has a modal or irrealis meaning, that is, it is volitional, directive, or intentional.
- It is restricted to eventive predicates.
- It co-occurs with finite clauses.

(Hyams 2003)

The irrealis interpretation of the bare perfective is provided by an active MoodP. Hyams adopts Roussou's proposal (2000) who argues that *na* and *tha* are both generated in a lower C head that is specified for mood $-C_{\text{Mood}}$. MoodP may be licensed by a modal element merged in its head or through checking by "appropriate" features in the verb. In the adult phrase structure, MoodP is licensed through merge with the presence of the modal particle. The child's structure though, is different in that *na/tha* particles are not contained in the clause. What Hyams proposes for the child's structure is a phrase structure based on an aspect-mood feature connection, combined with the underspecification of T/Aggr. Hyams proposes that aspectual features such as "perfective" (FPerf) "matches" both Aspect and Mood, and hence, may license either Asp or Mood heads. In other words, the child grammar of Greek has the same adult clause structure, as above, and it is the aspectual feature in the bare perfective (FPerf), that is responsible for the licensing of Mood in the child's grammar.

Returning to the suggested differences between adult's and child's structures now, the diversity in the two grammars reduces to whether Mood is licensed by the merging of a modal particle *na/tha* or through checking by the aspect feature in the verb. This explains at the same time the trade-off between bare perfective and use of the *na/tha* particles. Moreover, the productive use of modals correlates with the use of both perfective and imperfective verbs in modals contexts. Finally in what concerns the Agreement issues discussed above, the lack of agreement on the bare perfective follows as a direct structural consequence of the aspect-mood relation discussed above, namely that T/Aggr layers need to be unspecified in order for the FPerf to license the MoodP, according to the locality condition (Chomsky 1995). The mechanism adopted in the following structural representation proposed in Hyams, is a checking mechanism, namely Attract F that incorporates this locality condition (the Minimal Link Condition). In the early grammar of Greek, Mood attracts the [+perfective] feature in the verb, and is in that way licensed.

Returning to the phrase structure it follows from the locality condition that there can be no features intervening between Mood and the perfective verb. In other words, T/Aggr must be unspecified:



(Hyams, 2003)

Given the structural constraints on Attract/feature checking, the bare perfective is necessarily a non-agreeing form, with the unmarked $-i$ affix emerging as the default where AGR is unspecified. Thus, the availability of bare perfectives and RIs in early grammar is thus plausibly related to the lack of modals and not to any specific differences between adult and child grammars.

5 New evidence for the non-finite Greek forms

In Varlokosta (2003) there is some new evidence for the correlation between $-i$ form and RIs. Such new evidence supports further the idea, proposed back in the 1960/1998, that $-i$ forms in early Greek equals RIs in other languages, i.e. they are the Greek RI analogue.

First of these evidence, is the correlation between the use of infinitival forms and the omission of clitics; for Greek, the correlation holds between the use of verb forms with perfective aspect with the suffix $-i$ and clitic object omission. Indeed, based on the coding in the Stephany corpus, Varlokosta found 31 cases of clitic object omission in the speech of Spiros (out of 33 contexts with an obligatory object or clitic) and only 6 in the speech of Janna (out of 7 contexts with an obligatory object or clitic).

The second set of evidence is the poor tense verbal paradigm in this stage. What is suggested is that children do not use [+past] verbs in their speech production during the RI stage, and their occurrences of [+past] verbs are very poor in examples.

Finally, the third evidence suggesting the similarity between $-i$ forms and RIs, is the correlation between determiner drop and use of RIs. Based on Marinis (1997), Varlokosta suggests that all instances of determiner drop occur in this context, namely $-i$ forms and no-agreement. We will analyse and discuss further this new evidence in the second part of the paper through the analysis of Maria's corpus.

6 Semantic interpretation and modal properties of RIs and BPs

RIs, as a total, received often a modal interpretation, which entails reference to a likely future event. It has been suggested in previous studies that the temporal reference in these constructions is essentially free. The majority of RI constructions are eventive predicates, whereas finite constructions allow both eventive and stative predicates.

Hoekstra & Hyams (1998) draw upon the predominant future interpretation of RIs observed in the above studies and argue that the temporal reference of RIs is fixed to a modal irrealis interpretation.

Hyams (2001), as mentioned above, proposes that the children's use of non-finite forms is not an optional process in the early grammars but results from their attempt to map different meanings onto specific inflectional elements according to a semantic hierarchy: The Semantic Opposition Hierarchy, i.e. in which the category of Mood and in particular the realis-irrealis opposition is the most primitive one (RIs are irrealis forms whereas finite forms are realis).

Giannakidou (2002), as reported in Varlokosta, argues that Greek verb forms are unambiguously eventive or stative depending on whether they have perfective or imperfective aspect. Thus, perfective verb forms are always eventive. Based on Giannakidou's assumptions, Varlokosta reports that indeed, a proportion 87% of *-i* forms with no agreement involves eventive predicates, as expected.

Varlokosta reports that there is a future or modal interpretation involved in the majority of *-i* forms and hence she concludes that there is indeed a restriction regarding their temporal reference, namely the modal interpretation. The eventivity constraint as well as their modal/irrealis interpretation shows that these forms have parallel semantic interpretation to RIs in other child languages. As a result, this evidence provides further support for the non-finite status of these forms.

Finally, Hyams (2003) identifies the relations between perfectivity and modality with regard to the BPs. The relationship between modality, perfectivity and eventivity is as follows:

deontic modality > perfectivity > eventivity

(Hyams 2003)

Given the association between deontic modality and perfectivity and eventivity it follows that the bare perfective will be restricted to eventive predicates according to the eventivity constraint discussed above.

7 Strong continuity, maturation and RIs

According to the Strong Continuity or Full Competence Hypothesis (FCH), all functional categories are present from the beginning. There are two flavours of this hypothesis. According to one of them, functional projections are not only present from the beginning but also fully specified (Boser et al. 1992, Poeppel & Wexler 1993). Despite the absence of functional material, the presence of syntactic movement in early language is taken as an argument for the presence and full specification of functional categories.

A second variant of the FCH claims that functional categories are present but underspecified for their features (Hyams 1992, Hoekstra & Hyams 1995, Schutze & Wexler 1996). The underspecification approach explains thus the absence of the full range of a paradigm in the early language. Within this view, RIs are the result of the

underspecification of some functional category. Rizzi's (1994) view is also a version of the underspecification hypothesis. According to his analysis, RIs are the result of truncation of the syntactic tree below the TP.

According to the second view, the Maturation or Structure Building Hypothesis (SBH), functional categories are not available in the early grammar but mature according to a programme prescribed by UG (Radford 1990, Tsimpli 1992/1996).

What Tsimpli takes to be crucial evidence for her position (against the presence of functional projections), is precisely the cases where the agreement morpheme on the verb does not agree with the subject, i.e. *-i* forms. This shows, according to Tsimpli, that the two elements are not in the proper configurational relation of Spec-Head agreement. The apparent agreement errors observed in child Greek are not in fact agreement errors but instances of non-agreement. Children do not make agreement errors; they either use agreement correctly or avoid it altogether. However, the only agreement mistakes observed are in reference to the 3rd singular person. Thus, we conclude that *i*-forms are instances of non-agreement and not wrong-agreement.

Consequently, we take the fact that when agreement is used it is used mostly correctly as a strong indication that children project the full functional structure and thus as evidence for the FCH. The existence of the non-agreeing non-finite forms in early child Greek represents presumably a strategy on the part of the child to avoid agreement errors by using "that well-formed item of the verbal paradigm that allows them to use as little of the functional hierarchy as possible".

There are weaker versions of this hypothesis: Clahsen 1991, Clahsen & Penke 1992. The absence of morphological material associated with functional projections is taken as a strong argument for the Maturation or SBH. However, it is not the case that morphological material is totally absent from early language. Under the Maturation or SBH, RIs are taken as evidence for the lack of a functional category, namely the Inflection Phrase.

8 Analysis of the data

In what follows I am going to analyse the different types of evidence for the RI stage proposed in the various studies examined in the first part of this paper, in Maria's speech production. Through this thorough examination I will try to check how Maria's speech can be positioned in regard to these findings, how her speech behaves within the proposed theories of RI and in what stage Maria's speech development is found. Finally, I will try to give a new account for all the proposed theories of RI through the new findings from Maria's corpus and establish what the exact status of the RI stage is in child Greek.

As suggested in the first part of this paper, Greek has been proposed to have a RI equivalent, which is a verbal form *con -i* suffix corresponding to the 3sg person of the verbal paradigm. Greek has a modal construction consisting of a subjunctive particle "na" or a future particle "tha" preceding the verb, which occurs with the *-i* suffix in the 3 singular person. The verbal form of such construction (without the particles) corresponds to the proposed RI equivalent in child Greek. *Kathla* have been analysed as functional elements occupying a position within IP.

In the first attempts to analyse the RI phenomenon in child Greek it has been suggested that there is a severe omission of the particles during the RI stage a proposition that has been abandoned subsequently in favour of other hypotheses (VVR 1996, 1998). Later on in the literature (Hyams 2002, 2003) and within the framework of modal interpretation of the Greek equivalent of RI, it has been proposed that there is a trade off between the RI stage and the emergence of modal particle *na/tha* in children's speech.

To summarise, the three main arguments for the non-finite status of the *-i* form are as follows:

1. They occur with incorrect agreement i.e. in non-3sg contexts
2. Overuse of the *-i* form is more prominent with the perfective than with the imperfective stem.
3. They mostly occur with null subjects contrary to finite verbs, where both null and overt are observed.

I will examine the evidence for these generalizations starting with the agreement issue first.

9 Agreement

During the Root infinitive stage children produce both finite and non-finite verbs in root clauses. Wexler (1994) argues that children know the difference between finite and non-finite clauses, i.e. children know that finite verbs raise and non-finite verbs do not (German).

Evidence for the above claim comes first from finite and non-finite verb positioning in French, namely before the negation *pas* or after respectively and secondly from German where finite verbs are positioned in V2 position in main clauses, as opposed to final position in embedded clauses.

There are essentially no agreement errors in early child Greek, a pattern observed in other child languages too. This observation provides further support for the hypothesis that correct agreement features, on verbal inflectional morphology, are known to children very early in the course of acquisition.

In the following table, we can see the distribution of agreement in Maria's corpus. It is obvious that the agreement error is indeed very low in the various persons of the verbal paradigm, as suggested above for other languages, a fact that supports further the idea that children have knowledge of agreement features:

	1SG	2SG	3SG	1PL	2PL	3PL	Total	
Age	C	I	C	I	C	I	C	
2;0	9	-	3	16	4	6	-	39
2;2	32	-	25	12	1	7	-	83
2;3	44	2	17	59	4	9	-	140
2;5	38	-	18	63	1	13	-	148
2;5	32	-	12	64	-	5	-	122
2;7	28	1	10	42	1	3	-	93
2;8	28	1	20	14	2	1	-	70
2;8	41	-	9	64	1	-	-	119
Total	252	4	114	334 ⁵	14	44	1	814
%	98	2	100	96	4	98	2	100

Table 1. Distribution of all persons' verb forms (C= correct, I= incorrect agreement)

The general conclusion is that, correct agreement features on verbal inflectional morphology are known to children very early in the course of acquisition (VEKI: Very Early Knowledge of Inflection, EMC: Early Morphosyntactic Convergence).

10 Overuse

There is an overuse of a verbal form that involves the suffix *-i*, referred to as the 3rd singular person. This form involves predominantly the perfective stem. The following are examples of 3sg with *-i*⁶ suffix:

- | | | | | | | | | | | |
|-----|------|--------------------------------|-----------------|-------------|-----|-------------------------|-------------------|------------------|-------------|----------|
| (a) | na | katharisi | ti | miti | tu | (b) | ta | petisi | to | matstari |
| | SUBJ | clean | the | nose | his | | will | fall | the | pillow |
| | | <i>he/she is going to blow</i> | <i>her/his</i> | <i>nose</i> | | | <i>the pillow</i> | <i>will fall</i> | <i>down</i> | |
| (c) | tha | k(i)lisi | tin | porta | (d) | tora | tha | diavasi | ti | kuala |
| | will | close | the | door | | now | will | read | the | koala |
| | | <i>he/she will close</i> | <i>the door</i> | | | <i>he/she will read</i> | <i>the koala</i> | <i>(book)</i> | <i>now</i> | |

Variokosta et al (1996, 1998) proposes two stages in the use of *-i* form:

1. First Stage (Spiros 1;9, Janna 1;11): the *-i* form is used over half the time and approximately 40% of the time incorrectly in non-3sg contexts.
2. Second Stage (Janna 2;5): the *-i* form is used much less and moreover appropriately in 3sg contexts.

⁵ The total of 3sg persons in the distribution given in this table is 348, which contains copula "be" within the results. Note, however, that the same copula is excluded in the following distributions, namely tables 2, 3, 4.

⁶ The other suffix of 3sg person is usually *-e*.

In order to check the suggested evidence above in Maria's corpus we need first to see the distribution of the 3sg *-i* form across her corpus. In Table 2, we can see the distribution of the *-i* forms from the entire 3sg person verbal paradigm. In Table 3, there is the distribution of the various stems across the *-i* forms form Maria's speech production.

	Maria(2;0-2;8)
<i>-i</i> form 3sg	173(66%)
other 3sg	91(34%)
TOTAL	264

Table 2. Distribution of the *-i* form in sentences with verbs

	Maria(2;0-2;8)
<i>-i</i> imperfective stem	51(29%)
<i>-i</i> perfective stem	52(30%)
<i>-i</i> both (ambiguous)	70(41%)
TOTAL	173

Table 3. Distribution of the various stems across the *-i* forms

From the above tables the following are observed:

- 91 out of 264⁷ concerns 3sg with another suffix, namely *-e* and not *-i*
- From the 173 3sgs with *-i* suffix 70 involves verbal forms in which there is no difference between the perfective and the imperfective form⁸. Thus, these verbs present exactly the same form in both cases and hence it's impossible to disambiguate the form, unless used with one of the particles *na/tha* in which case they are perfectives.
- Then from the 103 remaining 51 are imperfective forms while 52 are verbs with the perfective form.

The conclusion so far is that there is indeed an overuse of the *-i* form 3sg, namely 66% of the total 3rd persons of the entire verbal paradigm. On the other hand, as a result of our analysis, such overuse is not really prominent with the perfective form, as we can see in Table 3 (29% vs. 30%).

⁷ Copula "be" is excluded.

⁸ In Modern Greek there exist some verbs which lack perfective root, in other words they are used in both contexts with the same form (kano/exo).

Though what is vital in the Greek equivalent of the RI phenomenon, is that such 3sg *-i* form, overused during stage 1, it has been suggested to be without agreement (or with incorrect agreement). To sum up so far, the RI equivalent for child Greek is the 3sg *-i* suffix form, used without the modal particles *na/tha*, predominantly with the perfective stem, and finally without agreement. Such RI analogue with these characteristics altogether, is referred as the Bare Perfective form (BP henceforth). Bearing this in mind then, a further step in the examination of RI evidence in Maria's corpus would be to check which of the *-i* form 3sg, with perfective form, lacks agreement and most importantly lacks the modals. We can see this in the following tables:

Maria(2;0-2;8)	
<i>-i</i> form perfective stem	Total
Correct	Incorrect/BPs
47(90%)	5(10%)
	52

Table 4. Distribution of correct and incorrect use of *-i* form with perfective stem (agreement errors)

Maria(2;0-2;8)	
<i>-i</i> form (all cases)	Total
Correct	Incorrect/BPs
168(97%)	5(3%)
	173

Table 5. Distribution of incorrect *-i* forms out of all the *-i* form 3sg paradigm of the corpus

From Tables 4 and 5 the following facts can be observed:

- From the 52 cases of *-i* 3sg forms with perfective stem, only 5 have no agreement and lack the adult-like modal construction. These cases are the BP forms. The rest of them all have the particles *na/tha* according to the adult grammar model, or when no particles are presented (one case) something else indicates the grammaticality of the sentence (conditional sentence).
- The same number of incorrect cases compared to the entire range of *-i* forms from the corpus, gives a percentage of 3%, which is indicative for this study, as we will see below.
- In what concerns BPs in Maria's corpus, this small number of BPs, namely the 5 cases found above, are all with the perfective form and hence the percentage of such distribution would be 100%. In brief, we could say that there is indeed a prominence with the perfective stem as opposed to the imperfective one, in BPs,

but because the available data is only few cases the entire issue becomes quite irrelevant. The distribution of perfective and imperfective forms across all the *-i* forms in the rate of use of the two different stems, namely 50% for perfective and 50% for imperfective, which means that verbs can stay without each of the stems.

Finally, a balance in the rate of use of the two different stems, namely 50% for perfective and 50% for imperfective, which means that verbs can stay without each of the stems.

Agreement is calculated in all the forms, according to the ungrammaticality of the sentence, since Greek is a null subject language, which means that verbs can stay without each of the stems.

Null subjects
I finally the third point to examine in what concerns the RI equivalent in Greek is the Null subject distribution across the RIs. It has been suggested that such non-finite forms occur with null subjects contrary to finite verbs where both null and overt are observed.

In relation to the results presented above in what concerns the incorrect use of *-i* forms and in what concerns the distribution of null and realised subjects across these forms, we can say that the above mentioned 5 cases of non-finite occurrence in which analysed the null subjects are all with a null subject as predicted from the theories of the only 5 cases here. Thus, the percentage of null subjects in the corpus is 100% of the examination of the phenomena. Thus, the percentage of null subjects in the corpus altogether.

However, this seems to be largely irrelevant for the examination of the phenomena. Thus, the percentage of null subjects in the corpus altogether. We found in the corpus that there are so few cases of IBFs in the corpus altogether. In what concerns the rest of the *-i* forms as well as the rest of the data (finite forms) the presence of null subjects in Maria's corpus presents normal rates (65% approximately of presence of null subjects) which is the same as in adult grammar for a null subject language (null and 35% realised) as predicted from the theories of the only 5 cases of null subjects in another distribution in Doukas (1999). We can see that the average distribution of null subjects in an adult's speech production (both positions for realised subjects) for subjects in an adult's speech production (both positions for realised subjects) is as follows: 62% for null and 38% for the rest. Thus, the adult results correspond to Maria's results for finite verbs.

12. New evidence for RIs
In the following part we will be examining some of the new evidence suggested for the Greek equivalent of RI from more recent studies about RI such as Varlokosta 2002, Hyams 2002, 2003 and others.

12.1 Tense
A further observation regarding early child Greek is that during Stage 1, which is characterised by the absence of the *-i* forms (the proposed RI stage), tense distinction tends to be absent (Table 7, Varlokosta). The relevance of the *-i* past feature across the 3sg forms has to do with the eventive vs. non-eventive interpretation of RIs. However, the connection of this evidence with the eventive interpretation and RI is not fully clear, but for the sake of research, we are going to analyse this piece of evidence through Maria's corpus as well.

Root infinitives in modern Greek: new evidence and analysis from child Greek

The distribution of [+PAST] in Maria's corpus is 81 (10% of the total verbs in the corpus) cases of all persons (of which 34 cases of 3sg and hence 41% of the total +PAST verbal forms). The examples of the variation of past tense follow below:

- (a) *libhike, epese, vrachike, irthe, eplase, evale, exise, megulose, potise, livhike, dionase, pelakse, skupise, ejfaje, telose, amevike, jelase, emhite, dionase, pelakse, skupise, ejfaje, telose, amevike, jelase, emhite*

Maria is clearly positioned in a more advanced stage (II) following the distribution made by Varlokosta, since the +past forms of the total of the verb production.

12.2 Clitic object omission

In other languages with RI phenomena a correlation has been observed between the use of non-finite forms and the omission of clitics during this stage. A correlation might be expected of verb forms with perfective aspect and the suffix *-i* and clitic omission might be expected in Greek too.

Below are examples of clitic objects in sentences from Maria's corpus:

- tora *t'* agapal mu *ta* patai i jaja
now it he/she loves on them she is stepping the granny
- now *ti* he/she loves *ta* pai sto saloni
now she/he is loving it them brings to the living room
- ala den *ti* theli *ta* them takes the girl and
but not her he/she want them takes them and brings them to the living room
- but she/he doesn't want her *ta* the girl takes them and brings them to the living room
- tora, ato tha *ti* (V)gali *ti* bala *ta* na *ta* vali *i* mama
now, this will her put out, the ball SUBJ them should put in the mum
and now this will put it out, the ball and mum should put them in

	3sg-all	All persons-rest	Total
Maria (whole)	98 (28%)	184 (39%)	
Obligatory contexts	12 (4%)	12 (4%)	
Non obligatory context	238 (68%)	268 (57%)	814
Total	348	466	

Table 6. The proportion of clitic object omission in 3sg vs. other persons

From table 6, we can see the distribution of clitics across the entire corpus of Maria. In regards to the 3sg persons as well as the rest of the verbal paradigm, an initial observation would be that the rate of omission in obligatory contexts (i.e. where the clitic needs to be present compulsory) is very small, namely 4%. Nevertheless, the correlation has been proposed to hold for verbal forms with perfective aspect and the suffix *-i* (BPs), and hence we need to examine this distribution as well which is presented in the following table:

	Perfective Stem		Total
	3sg -i form	BPs	
Maria (whole)			
Obligatory contexts	Present 14 (30%)	3 (60%)	
	Omitted 2 (4%)	2 (40%)	
Non obligatory context	31 (66%)	0	
Total	47	5	52

Table 7. Distribution of clitic objects in 3sg -i forms vs. BPs all with perfective stem

From the above distribution we can see that what concerns the 3sg -i forms things are much the same as those presented in the table 6, namely in only 4% of the cases where a clitic object is obligatory it is omitted while in the rest it is placed properly. On the other hand in the BPs distribution, we can see that 40% of the cases show clitic object omission indicating that the suggested evidence for clitic object omission in BPs can apparently hold in Maria's data. Nevertheless, the amount of data presented here is too small and this gives rise to serious doubts about the distribution and as such cannot give firm support for the questioned piece of evidence.

Vartokosta, in her study reports Marini's (1999) results for the clitic object omission which are different from her results, explaining in a footnote that the divergence is due to "calculation differences". On the other hand, Tsakali & Wexler (forthcoming) share the view that there is no high rate of clitic omission in Maria's data. Their results for the entire corpus (all files, all verbs and clitic omission in obligatory contexts) add up to roughly 4%, which is in absolute conformity with the results presented here. What Tsakali & Wexler propose for this piece of evidence is that there is a correlation in between RI stage and the clitic object omission stage is that practically the two stages overlap. So far, Maria (as stated above) appears to be in a more advanced stage of language acquisition in which no RI phenomena are observed and no clitic object omission as well.

12.3 Determiner drop

Another suggestion for the RI stage is that there is a correlation between determiner drop and use of RIs. Vartokosta, based on Marinis (1997), suggests that there is a proportion of definite articles missing in obligatory contexts in child Greek. All instances of determiner drop occur in contexts with -i forms and no agreement rather than in other contexts, and hence with BPs.

Marinis' distribution refers only to definite articles missing in obligatory contexts during both Stage 1 and Stage 2. The results given for the determiner drop are the following: 77%-83% for Stage 1 (Spiros and Janna) and 7% for Stage 2 (Janna). Let's see how things are for Maria's speech production in the following table:

Age	"Isolated" NPs	IN PHRASE		Omission In obligatory context (def+indefinite)	Total
		+article (def+indefinite)	-article ⁹		
2;0.24	6	12	0	7	25
2;2.8	5	9	5	8	27
2;3.18	5	25	12	9	51
2;5.4	6	57	11	6	80
2;5.24	13	59	24	4	100
2;7.1	14	23	15	0	52
2;8.3	8	20	10	0	38
2;8.27	7	46	16	0	69
Total	64(14%)	251(57%)	93(21%)	34(8%)	442

Table 8. Distribution of DPs and NPs in Maria's speech production

In the above table all DPs and NPs in Maria's speech have been calculated. Unfortunately, for reasons of time, it was impossible to calculate separately definite from indefinite articles. In any case the percentage of determiner omission is indicative even if it contains indefinite articles also within the distribution. From the results of the table seems that there is no obvious DPs omission in Maria's speech production. In fact, Maria as claimed before seems to be in Stage 2 presenting nearly the same percentage as the equivalent Stage 2 in Vartokosta's data, namely 8% vs. 7% (Janna, Stage 2).

Vartokosta observes that the proportion of determiner drop is lower in contexts with -i form and no-agreement (BPs) than in other contexts. In our study on the other hand, a part of the fact that that already Maria is classified in the second stage, as proposed above, the BP forms presented in her corpus (as already mentioned) are only in 5 cases. The determiner

⁹ The column under the title "-article" regards NPs without the presence of an article. Note that these cases are not incorrect and neither can we talk about determiner drop, since Greek allows to some NPs to stand without a Determiner. The following column under the title "omission" concerns indeed the omission of determiner in obligatory contexts.

drop evidence becomes irrelevant in this case then since there is not any DP drop in these 5 cases of BIs and finally since Maria is already classified in the second stage.

To sum up, the evidence for a correlation between the use of *-i* forms with no agreement and clitic or determiner omission in child Greek is not very firm.

13 Conclusion

In the above analysis, we examined old and new pieces of evidences for the status of RI analogue in child Greek. What is important to remember is that all the studies which we have considered in this paper as well as the analysis of the present paper have examined only small pieces of data in order to arrive at these conclusions. As a consequence, the analysed data is not really sufficient for any firm conclusions both in the literature and in the current research paper regarding the RI stage in Modern Greek.

From Maria's database we do not have evidence that there is an RI stage at this age of language acquisition. This could mean either that Maria is in a more advanced stage of language development compared to other children's data or that the RI stage is indeed optional as proposed for other languages as well.

Some general remarks and conclusions from the above research are as follows:

- Children go through a RI stage in their language development.
- The proposed age of such stage is from 2 years old until 2;6 – 3 years old
- Maria being taped recorded within the same range of age presents the following results:

- (a) no agreement errors in her relatively rich verbal paradigm
- (b) no overuse of such forms proposed to be the equivalent of RIs
- (c) consequently, null subjects are not excessive in these forms
- (d) perfective forms equally presented with imperfective ones
- (e) tense features and paradigm in place and richly represented
- (f) no clitic object omission with the above forms
- (g) no determiner drop with the above forms

Finally, the questions we need to raise at this point are:

- Is there indeed an equivalent of RIs in Modern Greek, and if there is, at what range of age do children go through it and what are the characteristics?
- Does the patterning observed with Maria support the idea of Optionality proposed by Wexler (1994) for German?

The arguments so far for an equivalent of the RI in Greek are not very firm nevertheless there is good evidence in the recent studies that does support this idea leaving the ground open for further research and investigation into this issue.

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Aspect and tense in the Swahili dialect of KiNgome¹

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0 Introduction

This short paper has two primary objectives: the first one is to respond to a call² for a continuation of a monographic description of possible living Swahili dialects as spoken along the south-east coast of Tanzania and its offshore islands. The area is estimated to cover a 500 km of coastline stretching between the Rufiji estuary and the River Ruvuma at the border of southern Tanzania and northern Mozambique. The second objective, in tandem with the first one, is to offer my modest contribution to a seemingly lacunae (lack of field data from the area) in the study of Swahili and Sabaki by Nurse and Hinnebusch (1993).

I begin here with the description of aspect and temporal marking (henceforth AT) of a little known dialect of Swahili known locally as KiNgome³. The data presented in this paper is based on the fieldwork I conducted in the extreme northern part of Mafia archipelago between 1999 and 2002. The dialect of KiNgome (a sub-dialect of Mafian Swahili⁴) is spoken by approximately 8,000 speakers in six isolated villages in the Northern Division of the main Mafia Island. Despite being an active tongue of the majority of Wangome, it has escaped the attention of Swahili descriptivists. My preliminary analysis of KiNgome data shows that it shares many of the phonological and morpho-syntactic traits with other rural Southern Swahili dialects (SD), which are not necessarily found in the Northern Swahili dialects (ND), or Standard Swahili (SSW) in general.

My description of AT system of KiNgome will follow, in principle, the matrix-based framework set up by Nurse and Muzale (1999) and Hewson et al (2000) as applied in Ruhaya and Swahili (with some slight changes). I have altered their original framework by adding the completive aspectual category and omitting the perfective category. However, the classical distinction between perfective and anterior (perfect) aspects will surface in the course of discussion of the anterior aspect. The paper is organised as follows: section 1 describes an overview of the verb structure of KiNgome. Section 2 will primarily demonstrate the broader category of aspect marking. Section 3 describes the temporal marking. Section 4 will briefly describe other categories that fail to adequately fall in either of the two categories above. Conclusions are made in section 5.

1 KiNgome verb template

Aspect and tense along with mood and polarity are among the inherent grammatical categories that find expression in the KiNgome verbal template by means of overt bound affixes along with paradigmatically contrastive but unmarked slots signalled in this paper by a putative null element /Ø/.

¹ I am grateful to Dick Hayward, Pat Caplan and Lutz Marten for their unwavering support and advice. All errors are my own responsibility.

² Hill (1973:17) made the first call. Later Nurse & Hinnebusch (1993:14) reiterated the need for an extensive linguistic research on the area.

³ This paper forms part of a more detailed study of both synchronic and diachronic phonological and morphosyntactic features of KiNgome dialect.

⁴ See Nurse and Hinnebusch (1993: 12) and Nurse and Spear (1985: 64).

Before we move further into the analysis of KINgome aspect and tense formatives and the meaning they can express, I find it necessary to present the concatenative ordering of aspectual and temporal markers in relation to the affirmative verb stem as follows:

- (1) SM- T(A) -(REL) (OM) -VB -A- FV/A
 1 2 3 4 5 6 7

Examination of the template architecture relevant to the aspect and tense inflections reveals that the Tense (T) occurs at the second slot after the Subject Marker (SM). Tense (T) may also be collapsed with aspect (A) in the same pre-stem slot, a typical phenomenon in most Bantu languages. This second slot may consist of one of the following discrete forms: a progressive (PROG) morpheme *na/a*, a future (FUT) morpheme *ta*, a past (PAST) morpheme *ri-*, a morphologically unmarked anterior (ANT) perfective (PREV) \emptyset , a situative (SIT) or 'potential' affix *ki-* a consecutive (CONS) dependent morpheme *ka-*, a completive (COMP) marker *-ka-*, none of which can precede an SM. There could also occur a habitual (HAB) prefix *hi-* with a null SM. Additionally, this slot could also be occupied by a composite AT form that consists of either a past *ri-*, a conditional *nge-*, or a situative *ki-* combined with a completive aspect *-ka* to form *ri-sa*, *nge-sa*, and *ki-sa* respectively. Although combined elements are two distinct markers on their own, we proposed them to be treated as a unitary AT form.

The third slot is occupied by the optional category of relative marker. The fourth is the optional object marker's category. The fifth slot contains an obligatory verb root plus optional derivational affixes which forms the verbal base. The verb base denotes the major event, state or action crucial for expressing contrasting tense and aspect meanings. The sixth slot is the regular (non-terminal) position for 'the iterative' Habitual (HAB) aspect suffix *-ag* or *-g*. The seventh slot, which is regularly occupied by the final vowel *-a* or the subjunctive suffix marker *-e*, may be occupied by the suffix vowel variant or 'VI suffix' that typically expresses anteriority aspect.

In general, tense categories precede aspect categories in synthetically one-word forms. Similarly, in a periphrastic construction, tense occupies an auxiliary part, while aspect occupies the pre-stem slot in the main lexical verb. Interestingly, as we noted earlier, tense and aspect categories may occur cumulatively with a tense form preceding an aspect form as in the case of a past completive *ri-sa-*.

Let us look at the matrix of tense and aspect in affirmative forms that will reveal the full picture of how aspect and tense work in KINgome verbal structure. I have avoided embedded clauses, infinitives and imperatives:

(2) AT formatives in the verbal paradigms of KINgome

Aspect \Rightarrow Tense \Downarrow	Performative	Anterior (\emptyset ... a/VH)	Completive ($\$a-$)	Habitual (<i>hu-</i> , <i>-ag</i>)	Progressive (<i>a-/na-</i>)
Far past (<i>ri-</i>)	<i>-ri-VB-a</i>		<i>-ri-sa-VB-a</i>	<i>-ri-VB-ag-a</i>	<i>-ri-'be'+</i> <i>-na-VB-a</i>
Recent past (\emptyset)	<i>-\emptyset-VB-a</i>	<i>-\emptyset-VB-VH</i> <i>-\emptyset-VB-a</i>	<i>-sa-VB-a</i>	<i>hu-\emptyset-VB-(ag)-a</i>	
Present (<i>a</i> , <i>na-</i>)	<i>-a-VB-a</i> <i>-na-VB-a</i>		<i>-ka-sa-VB-a?</i>	<i>-na-VB-ag-a</i>	<i>-a-VB-a</i> <i>-na-VB-a</i>
Future (<i>ta-</i>)		<i>-ta-VB-a</i>		<i>-ta-VB-ag-a</i>	<i>-ta-'be'+</i> <i>-na-VB-a</i>

The table above shows 18 affirmative verb forms indicating the intersection of tense paradigms (horizontally) and aspect paradigms (vertically). In contrast to Hewson and Nurse's (2001) framework, I have treated a completive aspect *sa-* under a separate category. I have not included the 'underspecified' dependent form *ki-* and consecutive form *-ka-* in the matrix, which I partly assumed to be a subcategory of far past tense *ri-*.

Formally, KINgome distinguishes five aspectual constructions (performative, anterior, completive, progressive, and habitative) and four tenses (far past, recent past, present and future). Comparatively, KINgome (and the rest of SD) has fewer degrees of remoteness distinctions in both the past and future when compared to certain Bantu languages such as gikuyu (Mugane 1997) and Rundi. Haya and Bemba (Hymans and Waters 1984), which among other things exhibit a plethora of tense markers.

Although the aspect category is semantically and morphologically tied up with that of tense, I present the core of my analysis of the AT system in KINgome by examining each category separately, beginning with the broader aspectual system, and followed by the tense system.

2 Aspectual marking in KINgome

By definition, tense is a category of morpho-syntactic properties distinguishing a finite verb's temporal reference i.e. before, simultaneous with, or subsequent to a reference time. A reference time is usually the utterance time, but may also be a past or future time. Aspect is a category of morpho-syntactic properties distinguishing the various senses in which an event can be situated at a particular time interval. Usually, we defined aspect in terms of the beginning, duration, completion, repetitive, resulting, etc. of a verb without reference to its position in time. From another viewpoint, tense can be considered to refer to Universal Time while aspect is considered to refer to Event Time (Hewson et al. 2000:38). We discuss each aspectual category in the following order: performative, anterior, completive, progressive, and habitative.

2.1 Performative

This is a basic form by which other forms within the paradigms are to be interpreted. It is typically segmentally marked by *-a* in the present tense form, but is marked with *-ri* to denote a simple past form and with *-ta* for a simple future form.

- (3) (a) *tu-a-bini* *ngina*
 1pSM-PRES-cultivate rice
 'We cultivate rice'
 (b) *tu-ri-bini* *ngina*
 1pSM-PAST-cultivate rice
 'We cultivated rice'
 (c) *tu-ta-bini* *ngina*
 1pSM-FUT-cultivate rice
 'We will cultivate rice'

The form *-a* carries an equivocal meaning. It tends to invoke a generic meaning when applied in the context of a general question such as 'what do you do for a living?' In the context of 'what are you doing?' the same form will express the present progressive meaning. Both questions can invoke the following identical responses:

- (4) (a) *tu-a-uv-a* *lh'amba*
 1pSM-PST-fish-FV 9-fishsticks
 'We fish lobsters'
 (b) *tu-a-suk-a* *rukiri*
 1pSM-PST-make-FV 11-palm fond material
 'We make palm fond material'

The answers for the present performative will reflect a daily undertaking and not a current event or present progressive expression. The form *-a* may also be drawn to denote habituality. It is a situation that holds at all times but which is not necessarily occurring at the time of speaking as we see in:

- (5) (a) *difu r-a-kwer-a* *majini*
 rher 5SM-PST-float-FV 6-water-LOC
 'Fiber leaf floats in the water'.

2.1 Anteriority

One striking area in KINgome aspectual categories which when compared to SSW proves to be distinct is the anterior marking. SSW regularly marks an anteriority with *me-* while KINgome expresses anteriority with a null element i.e. \emptyset .

- (6) (a) *ki- \emptyset -j-a* *retu*
 1sgSM-ANT-come-FV today
 'I have come today'

- (b) *ka- \emptyset -ri-tum-u*
 3sgSM-ANT-5OM-pick-VH
 'She has picked it'

Two ways of marking anterior: \emptyset ...*a* and \emptyset ...*VH* emerge in (6a&b). Here anterior refers to an earlier action, which produced a state, which either lives on, or whose consequences or relevance live on. In other words, it is a past event with present relevance. Let us now turn to each of this form in turn:

2.1.1 \emptyset ...*a* formative

KINgome corpus has the following examples:

- (7) (a) *hi- \emptyset -nu-on-a* *ni'oro*
 1sgSM-ANT-2sgOM-see-FV 1-child
 'I have seen a child/I saw a child'
 (b) *maji* *ya- \emptyset -aruk-a*
 6-water 6SM-ANT-rise-FV
 'The water/tide has risen/rose'
 (c) *tu- \emptyset -rim-a* *vuvu* *retu*
 2pSM-ANT-cultivate-FV 5-farm our
 'We have cultivated /cultivated our farm'
 (d) *tu- \emptyset -zingiz-a* *niego*
 2pSM-ANT-set-FV 3-trap
 'We have set /set a trap'
 (e) *kisu* *ki- \emptyset -h-anguk-a*
 7-knife 7SM-ANT-2sgOM-drop-FV
 'I've dropped/dropped the knife'
 (f) *ki- \emptyset -j-a* *retu*
 1sgSM-ANT-come-FV today
 'I have come/came today'
 (g) *tu- \emptyset -ceng-a* *pori*
 2pSM-ANT-clear-FV 5-bush
 'We have cleared / cleared the bush'
 (h) *ka- \emptyset -tandawar-a* *ponje* *piano*
 3sgSM-ANT-reign-FV all over here
 'S/he has reigned/ reigned all over here'

The pre-stem \emptyset and the final *-a* in (7a-h) are used to express present perfect and recent past interpretations. In all examples above, the events took place earlier than the time of reference. This feature of collapsing an anterior and a (near) past is not idiosyncratic to KINgome, for a somewhat similar situation is obtained in closely related Coastal Sabaki members such as KiVumba, Pokomo, Mwani, and Comorian. Northern Swahili dialect of KiVumba and Lower KiPokoiko display the following

examples:

- (8) (a) *ka-Ø-fu* or *ka-Ø-fwi*
 3sgSM-ANT-die
 'S/he has died/she died'⁵
- (b) *ni-Ø-dz-a*
 1sgSM-ANT-come-FV
 'I have come/ came recently'⁶
- (c) *hu-Ø-gw-a*
 2plSM-ANT-fall-FV
 'We have fallen/ we fell'⁷

SSW and other major dialects of Swahili have a *me-* marker for present perfect and a *ri-* for simple past tense (see Mazrui (1976:18) and Drole (1992: 83)).

2.1.1.1 Ø...a stative anterior.

Bantu usage of stative verbs entails the use of anterior event. KiNgonje is no exception, the form Ø...a (except in *-fu die*) is used with stative verbs to portray a static meaning such as:

- (9) (a) *wa-Ø-rar-a*
 3plSM-ANT-sleep-FV
 'They are sleeping'
- (b) *ka-Ø-potek-a*
 3plSM-ANT-strand-FV
 'S/he is stranded'
- (c) *ya-Ø-aruk-a*
 6SM-ANT-raise-FV
 '(Tide) is raising'
- (d) *mu-Ø-ranuk-a?*
 2plSM-ANT-awake-FV
 'Lit. How are you awakening?' (used as 'good morning?')
- (e) *ka-Ø-fu*
 3sgSM-ANT-die
 'S/he is dead'

Both stative verb and dynamic verb such as *dau ri-Ø-f-a* 'a boat has arrived' employ Ø...a form.

⁵ See Lambert (1953: 19)

⁶ See Nurse and Hinnebusch (1993: 424)

⁷ See Nurse and Hinnebusch (1993: 428)

2.1.2 Ø...VH formative

The second most striking fact about the KiNgonje anterior is the presence of a pre-stem zero and final vowel variant (as governed by a verb root vowel) both in positive and negative forms⁸.

- (10) (a) *ka-Ø-ri-ćum-u*
 3sgSM-ANT-5OM-pick-VH
 'S/he has picked it'
- (b) *ki-Ø-mw-on-o kaeni kwake*
 1sgSM-ANT-2sgOM-see-VH 9-home-loc. his
 'I have seen him/her at his/her home'
- (c) *ku-Ø-mu-ibir-i nani?*
 2sgSM-ANT-3OM-steal-VH who
 'Who have you stolen from?'
- (d) *ki-Ø-r-i kwangu*
 1sgSM-ANT-eat-VH my place
 'I have eaten at my place'
- (e) *ki-Ø-wa-on-o woñčekyana*
 1sgSM-ANT-2plOM-see-VH terrified
 'I have seen them terrified'
- (f) *kate ka-Ø-ri-pik-i nani?*
 5-bread 3sgSM-ANT-5OM-cook-VH who
 'Who has baked the bread?'
- (g) *ka-Ø-n-ćom-o hong'o*
 3sgSM-ANT-1sgOM-sing-VH 9-back
 'It has stung my back'
- (h) *ka-Ø-rwar-a tumbo*
 3sgSM-ANT-feel ill-FV 5-stomach
 'S/he has suffered from stomachache'
- (i) *ka-Ø-rwar-a tumbo*
 3sgSM-ANT-feel ill-FV 5-stomach
 'S/he has suffered from stomachache'

Noted here are patterns of Ø--VH suffix that express perfect action as seen in the affirmative form. Swahili scholars have attempted to offer explanations on the environments to which VH suffix seems to be associated: Maganga 1990:152 asserts that speakers of Kitiunbaru 'may opt to use either the long verb which involve the tense marker or the short verb forms which make use of vowel harmony'. He cites the following examples to support his claims:

⁸ All five vowels appear as VH suffix in nonpast negatives in KiNgonje (as indeed other rural SD):

- si-Ø-rw-a* 'I am not going/ do not go'
si-Ø-fag-u 'I am not keeping animals'
si-Ø-nwon-o 'I don't/ never see him'
si-Ø-pik-i 'I am not going to cook/ I don't cook'
si-Ø-wen-e 'I don't/ never see them'

(11) (a) *si-na-kwimb-a*
NEG-PST-to sing-FV
'I do not sing'

but

(b) *ni-O-jimb-i*
1sgSM-ANT-sing-VH
'I sang/have sung'

Is it really a question of shorter vs longer verb stems? The following cases counterexamples the above claim (ibid:219-21):

(12) (a) *si-na-ya-k-a*
NEG-PST-get-FV
'I do not get'

(b) *si-na-sunk-a*
NEG-PST-run-FV
'I do not run'

but

(13) (a) *ni-O-val-a*
1sgSM-ANT-get-VH
'I got/have got'

(b) *ni-O-sunk-u*
1sgSM-ANT-run-VH
'I ran/have run'

It is not the length of the stem that determines the occurrence or non-occurrence of the VH suffix vs. overt AT marker + a suffix as evident in (11a & b) vs. (12, 13a & b). Rather his data suggest the other way round, i.e., if you use an overt AT marker, you have to use –a suffix, and can't use the VH suffix. Interestingly, though such argument may seem convincing, the following KINgome data object such constraint:

(14) (a) *u-ta-zi-on-o*
2sgSM-FUT-100M-see-VH
'You will see them'

(b) *ha-ku-ni-čim-u*
NEG-3sgSM-SOM-pick-VH

(c) *ku-ni-ñong-o*
INF-SOM-twist-VH
'to twist it'

Presumably, KINgome case in (14) may be considered as 'development's', nevertheless, they disclaim both arguments on overt AT markers and length of the verb stems. A plausible argument for the occurrence of the VH suffix is provided by Nurse and Hinnebusch (1993:390-1). They suggest that VH suffix may be associated with 2/3 sg SM *ku-*, *ka-* or other singular SM other than *ni-*. This brings us to the

question of the existence of the two sets of affirmative singular SM (human beings only) in non-SSW⁹. I present Set A (similar to SSW) and Set B for singular SM in KINgome as follows:

(15)

	SET A	SET B
1 st Person singular	<i>ni-</i> or <i>ni-</i>	<i>ki-</i>
2 nd Person singular	<i>u-</i>	<i>ki-</i> , <i>ku</i>
3 rd Person singular	<i>a-</i>	<i>ka-</i>

Subject markers in Set A co-occur with both overt and null AT forms whilst SM in Set B are restricted with null AT form. This implies that the *O--VH* will definitely appear with SET B SM and optionally in SET A. Again the shape of the SM offers slightly explanation on what exactly motivate VH suffix. Further research is required to establish the environment that motivates *O--VH* (and indeed *O--ele*) in Bantu languages.

Historically, the *O--VH* is an old inherited Bantu feature. Along with –ele suffix is used for Past/Perfect reference. KINgome has only VH suffix but no –ele suffix. It displays all five variable vowels including –a suffix. Its appearance in synchronic data signifies an areal feature that groups KINgome along with other SID (excluding Kitlangua/SSW), and other peripheral Sabaki members such as KIPokomo, Comorian and Kimwani.

A more vivid picture of an areal feature of VH suffixation that expresses perfectivity is presented by Whiteley (1959: 58-59) for KIMakunduchi and KITumbatu:

- (16)
- | | |
|--------------------|--------------------------------|
| <i>m-vi-i</i> | 'I have climbed' |
| <i>ni-val-a</i> | 'I have obtained' |
| <i>ni-iz-u</i> | 'I have sold' |
| <i>ni-okor-o</i> | 'I have come across something' |
| <i>ni-fugu-u</i> | 'I have opened' |
| <i>n-kwel-e</i> | 'I have climbed (T)' |
| <i>ni-m-tafu-u</i> | 'I looked for him' |
| <i>ka-yon-o</i> | 'Have you seen?' |

Although Whiteley (ibid.) has not indicated zero anterior form at pre-stem slot, we are aware that between SM and VB there is a null element for AT (anterior) expression. In addition, all Sabaki members except SID and Comorian have the –ele/-ile suffix, but no VH suffix. SID and Comorian have only the VH suffix and no –ele/-ile for the anterior suffix. Just across the Indian Ocean on the mainland, the neighbouring Bantu of KIMwera¹⁰ (Harriss 1950: 79) shows the reflexes of *-ile anterior aspect:

⁹ I adopt Kristina Riedel's (2001/2002: 13) presentation of similar sets of (singular) SM from her report of the Northern Unguja Swahili dialect of KINgome.

¹⁰ Despite the fact that the prehistoric inhabitants of Mafia have been identified in the Kiwa Chronicles as Wambwera, my observation of KINgome dialect shows minor influences of KIMwera on KINgome speech.

(17)

lienden-e 'they are alike'
inemet-e 'they are stuck'
indim-ede 'they are crooked'
legen-e 'they are stuck fast'

This feature has not crossed over to the island of Mafia.

2.1.3 Future anteriority

So far we have discussed present anteriority alone. KINgome has no discrete form for future anteriority. In such case, KINgome has to use a periphrastic construction to express such a reference as provided by the following examples:

(18) (a) *tu-ta-kuj-a tu-ki-fik-a*
 1pISM-FUT-come-FV 1p1 SM-SIT-arrive-FV
 'We will come to you if we have arrived'

(b) *n-ta-kwit-a n-ki-fik-a*
 1sgSM-FUT-call-FV 1sg SM-SIT-VB-FV
 'I will call you when I arrived'

Closer to such a meaning is provided by the following case that involves a conditional *nge-ll* and a completive *ša-*

(19) (a) *kama si juwa, tu-ngeša-bini* *ponte pano*
 if Neg 9-sun 1pISM-COND-COMP-cultivate- all over here
 'were it not for the sun, we would have cultivated all over here'

(b) *Muda huu, ki-ša-fik-a Kisiju*
 This time, 3sg-COMP-arrive-FV Kisiju
 'at present he has already arrived at Kisiju'

For the present state that is related to the imminent future event, I have heard the following expressions using *hi-0-ja* 'I have come':

(20) (a) *ni-0-ja ku-perək-a madafari*
 1sgSM-ANT-come-FV INF-send-FV 6-note books
 'I have come to bring note books'

(b) *ni-0-ja kukutweša*
 1sgSM-ANT-come-FV INF-2sgOM-cause to carry-FV
 Lit: 'I have come to say goodnight to you'

2.3 Completive

Another widespread feature of KINgome aspectual marking is the use of *ša-* that encodes the completion of an event. Although this category best fit as part of the anterior aspect, I find it suitable to place it in a separate category. This distinction is synonymous with the use of the adverbial 'just' vs. 'already', which have been elsewhere noted to denote different aspectual functional meanings (see Cinque 1997).

¹¹ The conditional *Nge-* is regular in KINgome: *tu-nge-rima tu-nge-pat-a nga kidogo* 'If we had cultivated we could have got at least a bit'

Marten (1998: 160) regards *ša-* as a new member of the Swahili AT system that is used as completive aspectual auxiliary to signal anteriority. It can combine with the situational tense marker *-ki* or past form *li-* (in our case *ri-*). When *ša* is used as the only AT marker it acquires both temporary and aspectual information. I also consider *ša-* as a completive aspect that expresses an event that has recently finished and still has a relation to another subsequent events as the following examples from KINgome illustrate:

(21) (a) *ka-ša-rim-a*
 3sgSM-COMP-cultivate-FV
 'S/he has already cultivated'

(b) *mu-ša-ravy-a?*
 2pISM-COMP-eat-FV
 'Have you already eaten?'

(c) *juwa ri-ša-zam-a uka u-fene-ko!*
 9-sun 9SM-COMP-set-FV 2sgSM-stand 2sgSM-go-CLIT
 'The sun has already set, get up and go there then!'

The completive formative *ša-* in the form of *kisa/rika/ngeša* within a one-word form is found in the following cases:

(22) (a) *mu-kiša-ravy-a mu[r]uke*
 2pISM-SIT-COMP-eat-FV 2sgSM-go-SUBJ
 'once you finish eating go away'

(b) *mu-riša-ravy-a*
 2pISM-PAST-COMP-eat-FV
 'you had already eaten'

(c) *mu-ngeša-ravy-a*
 2pISM-COND-COMP-eat-FV
 'you would have already eaten'

It should be borne in mind that by considering the complex form *kisa/ngeša* and *rika* as a unitary AT form we are about to regard *rika* as a discrete form for a pluperfect in KINgome and indeed in SSW in the form of *riša*. This is against a popular belief that SSW has no distinct form for pluperfect notion as assumed in literature.¹²

2.4 Progressive

I have collected the following examples to mark the progressive aspect that stands for an ongoing or progressive action.

(23) (a) *a-na-rim-a*
 3sgSM-PST-cultivate-FV
 'S/he is cultivating'

¹² See Comrie (1985: 80).

- (b) *lw-a-rim-a*
 2plSM-PST-cultivate-FV
 'We are cultivating'
- (c) *plaka-a-na-yug-a*
 9-cat 9SM-PST-cry-FV
 'The cat is crying'
- (d) *tu-ri-kuwa lw-a-rim-a*
 1plSM-PAST-be 1plSM-PST-cultivate-FV
 'We were cultivating'

The use of *na-* or *a-* in (23) has a present progressive interpretation. However, *na-* or *a-* may denote a habitual or continuous situation when a temporal adverbial is added:

- (24) (a) *a-na-rim-a* *kira siku*
 3sgSM-PST-cultivate-FV every day
 'she cultivates every day'
- (b) *lw-a-rim-a* *kyaka hadi kyaka*
 2sgSM-PST-cultivate-FV year after year
 'We cultivate every year'

However, some use of *na-* in KIPemba, KIMiang'ara and Rural Zanzibar Swahili (both SD members) differs from the use of *na-* in KINgome and indeed SSW.

- (25) (a) *ka-na-uk-a*
 3sgSM-PERF-return-FV
 'S/he has returned'
- (b) *ku-na-ondok-a*
 2sgSM-PERF-go-FV
 'you have gone out'
- (c) *ka-na-kuLy-a*
 3sgSM-PST-eat-FV
 'he is eating'

In (25a & b) the formative *na-* is used to express the perfective rather than progressive. As for (25c), in Rural Zanzibar Swahili, the formative *na-* is denoting a progressive aspect but in the environment of a preceding 3sg SM *ka-*. KINgome like SSW disallows the co-occurrence of the progressive *na-* along with the 3sgSM *ka-* as seen in (25c). Typical cases in KINgome (when 3sgSM *ka-* or *ku-* are involved) are exemplified below:

- (26) (a) *ka-o-rudi*
 3sgSM-ANT-return
 's/he has returned'

- (b) *ku-o-rudi rini weye?*
 2sgSM-PAST-return you
 'when did you return?'

Parallel to other Swahili dialects, the progressive aspect in KINgome may refer to the past and future time as well. In those cases, tense and aspect expressions require a periphrastic construction which adds the auxiliary 'be' encoding past *ri-* or future *la-* tense followed by the lexical verb marked with an aspect *na-* in the pre-stem slot.

- (27) (a) *ni-ri-kuwa na-rima daweni*
 1sgSM-PAST-be 1sgSM/PROG-cultivate 5 meadow land-LOC
 'I was cultivating at the meadow land'
- (b) *ni-ta-kuwa na-rima daweni*
 1sgSM-FUT-be 1sgSM/PROG-cultivate 5 meadow land-LOC
 'I will be cultivating in the meadow land' (so, when you come, you will know where to find me).

2.5 Habitative

The prefix *hu-* and a suffix *-og* typically expressed habituality in KINgome. They may denote an event occurring regularly, iteratively or expressing timeless truth or facts.

- (28) (a) *sive hu-rim-a afaa*
 we HAB¹-cultivate-FV afaa
 'We (used to) cultivate afaa'
- (b) *yeye hu-rim-ag-a faya*
 him HAB¹-cultivate-HAB²-FV faya
 'S/he used to cultivate faya'
- (c) *lw-a-rim-ag-a afaa*
 1plSM-PST-cultivate-HAB²-FV afaa
 'We cultivate afaa regularly'
- (d) *wa-ri-rim-ag-a*
 3plSM-PAST-cultivate-HAB²-FV
 'They cultivated repeatedly'
- (e) *tu-na-rim-ag-a*
 2plSM-PST-cultivate-HAB²-FV
 'We cultivate habitually'
- (f) *tu-ta-rim-ag-a*
 2plSM-FUT-cultivate-HAB²-FV
 'We will cultivate habitually'

Noted above are various examples containing habitual *hu-* and *-og* in one-word forms. The form *hu-* may stand on its own (28a) or co-occur with the habitual suffix *-og* (28b). It should also be noted that in KINgome, unlike in KITUngujaSSW, the form *hu-* is restricted in its use. Semantically the form *hu-* refers to timeless events

while *-ag* may have a range within a specified time, i.e. it may denote 'habituality' or 'iterativity' in the past, present or future. In Kingome *hu* may be replaced by subject concord modified with a temporal adverbial as in *boi i-0-ja kira sika* 'the boat comes every day'. The standard form would be *boi huja kila sika* 'the boat comes every day'.

The *-ag* aspect may appear with other tense markers as seen in (28c-f). In imperatives the form *-ag* follows the root and ends with the final indicative *-a* or the subjunctive *-e* (in a polite imperative):

- (29) (a) *rim-ag-al*
cultivate-HAB²-FV
'cultivate then!'
- (b) *pand-ag-a!*
climb-HAB²-FV
'climb then!'
- (c) *fung-ag-a!*
close-HAB²-FV
'close then!'
- (d) *mu-rim-ag-e*
2pSM-cultivate-HAB²-FV
'cultivate then!'

Surprisingly, neither a 'habitual' sense nor an 'iterative' sense is present in the above imperatives expressions. Similarly, KIMakunduchi (Whiteley 1959:62), another rural SD, displays *-g* (imperative) form without 'a habituality or repeating sense' as the following examples illustrate:

- (30) (a) *onja-g-a!*
taste-HAB-FV
'taste then!'
- (b) *njo-ni-g-a vano*
come-PL-HAB-FV here
'come here then!'
- (c) *m-lol-e-g-a uyoko*
2sgOM-see-SUB-HAB-FV here
'see that fellow there!'

As not in (29) and (30), KINgome and KIMakunduchi use *-ag* in imperative forms to express a sort of polite command without necessarily requiring the addressee to resume the activity s/he has been doing previously. This may speculate the diachronic discussion that probably an *-ag* that refers to habituality is different from the one that refers to a polite command. Further cross-linguistic evidence is needed to validate this proposition. Whiteley (ibid: 56) further reported that KIMakunduchi has a *-ga* form appearing at pre-stem slot as the following cases show:

- (31) (a) *na-ga-tend-a*
1sgSM-PST-HAB-do-FV
'I'm working'

- (b) *si-na-ga-tend-a*
1sgNEG-PST-HAB-do-FV
'I'm not working'

It seems this is idiosyncratic to KIMakunduchi and not such case is present in my KINgome corpus or SD in general. There is no clear indication that this particular *ga-* stands for habituality.

3 Tense marking in KINgome

A two-fold opposition of past vs. non-past is found in KINgome. The non-past is an incomplete action, either present or future. We have seen that KINgome has two primary forms of reference to past time: *ri-* for a far past and *O* for a near past which extends and overlaps with reference to anterior. For non-past, KINgome has only one discrete future tense *-ia* and a general present tense *-a-*, which speakers freely alternate with *na-* to convey present or habitual expressions.

3.1 Pasts

The basic past tense distinctions for KINgome are between two past reference forms: *recent* and *far* past. Recent past (similar to perfective aspect) is unmarked in KINgome See section 2.1.1 for exemplification.

3.1.1 Recent past and far past

- (32) (a) *tu-O-ceng-a* vava
1pSM-ANT-clear-FV thicket

- 'we cleared /have cleared the thicket'
- (b) *tu-ri-ceng-a vava*
1pSM-PAST-clear-FV thicket
'we cleared the thicket'

The forms *O-* and *ri-* express distinct grammatical categories that posit the degree of remoteness of the past tense reference in KINgome. As can be seen the typical cut-off point in KINgome (and indeed other SD except for KILingua/SSW) is that between 'today' and 'before today'. The *ri-* far past in KINgome represents an event which occurred before today. The zero form represents a near past and refers to an event which occurred very recently or today, which leads one to expect its current relevance for the present.

3.2 Non-pasts

As we have seen non-pasts are represented by present and future tenses.

3.2.1 Present tense

The present tense is used to express simultaneity of a situation with the present moment. The combination of this tense and various aspect categories are realized in the following in KINgome: simple present, present progressive, and present perfect. In simple present, we have *tu-a-rya nondora* 'we eat leftover (food)' (SM-a-VB-a) which is different from *tu-O-rya* 'we ate/have eaten' (SM-O-VB-a), which expresses

a general fact and is not necessarily reporting an event occurring at the time of utterance. Here we speak of an act of eating which holds at present and may have begun before and may well continue beyond the present moment. In the present progressive, we have two alternating patterns in the shape of SM-*na*-VB-*a* and SM-*Q*-VB-*a*, which basically express an ongoing action at the time of utterance. Examples are: *tu-na-rima /tu-a-rima* 'we are cultivating'. The present anterior is associated with the pattern SM-*Q*-VB-*a* VH and even extended to completive SM-*ša*-VB-*a* as exemplified below:

- (33) (a) *tu-Q-rim-a*
1pISM-ANT-cultivate-FV
'We have cultivated'
(b) *ki-Q-mwon-o*
1sgSM-ANT-see-VH
'I have seen him'
(c) *tu-ša-rim-a*
1pISM-COMP-cultivate-FV
'we have already cultivated'

Ways of expressing present time are not solely based on the forms we have described above. For instance, when we have the following question and answer forms:

- (34) (a) *mu-na-rar-a-?*
2pISM-PST-sleep-FV
'are you sleeping?' (spending the night?)
(b) *tu-na-rudi*
1pISM-PST-return
'we will return' (i.e. we are not spending the night)

The *na*-form in (35 a & b) is expressing the imminent futurity and not something that is going on at that time of speaking. This makes it hard to exactly equate the form and meaning it can always convey in every context.

3.2.2 Future tense
KiNgame, like other SD, displays a morphologically discrete future form with *ta-* (*ta-* for KiMakunduchi). It expresses events in future time.

- (36) (a) *tu-ta-rim-a* peka etu
1pISM-FUT-cultivate-FV our selves
'We will cultivate ourselves'
(b) *n-ta-kwend-a* Kidakuri
1sgSM-FUT-go-FV Kidakuri
'I will go to Kidakuri.'
(c) *n-ta-rim-a* n-ki-flk-a
1sgSM-FUT-cultivate-FV 1sgSM-SIT-arrive-FV
'I will cultivate if I arrive'

As an exception to the common form above, I found one case of expressing future reference without a discrete morpheme *ta-*, which may sound awkward to the SSW speakers.

- (37) *kešo a-Q-ñi-flk-a hapa*
tomorrow 1sg SM- O-1sgOM-VB-FV here
'the will come to me here tomorrow'

There is no discrete *ta-* form above. The future expression is here portrayed by a zero form, the combination of the adverbial temporal expression and indicative mood marked by final vowel *-a*.

The subjunctive construction marked by a suffix *-e* at the FV slot may also be associated with some future reference without including the form *ta-*.

- (38) *u-je-kešo*
2sgSM-come-SUBJ tomorrow
'come tomorrow'

4.0 Formatives *ki-* and *ka-*
We now look briefly at *ki-* and *ka-* AT forms. We treat them separately due to their characteristic of failing to exactly fall into the two categories we have specified in our matrix in (2).

4.1 *ki-* 'situational' tense

The form *ki-* at the AT slot in KiNgame (and indeed SSW) commonly marks 'if' conditional with future interpretation.

- (39) (a) *n-ki-rim-a* n-ta-vun-a
1sgSM-SIT-cultivate-FV 1sgSM-FUT-harvest-FV
'If I cultivate, I will harvest'.
(b) *n-ki-flk-a* keso n-ta-kup-a pesa zako
1sgSM-SIT-arrive-FV tomorrow 1sgSM-FUT-give-FV your money
'if I arrive tomorrow I will give your money'
(c) *a-ki-i-a* m- p-e
1sgSM-SIT-come-FV 2sgSM-give-SUBJ
'when she comes, give to her'.
(d) *k^huku a-ki-kuñcor-a* u-ta-po haraka
9-chick 9SM-SIT-peck-FV 2sgSM-FUT-heal quickly
'when a chick pecks you, you quickly get better'
(e) *viñagi vi-ki-ñi-kumbuw-a* na-tetem-a
8-drizzle 8SM-SIT-1sgOM-soak-FV 1sgSM-tremble-FV
'when drizzle soaks me, I tremble'.
(f) *vire u-ki-ñi-on-a* ñi-kinw-a
when 2sgSM-SIT-1sgOM-see-FV 1sgSM-get angry-FV
'(that time) when you saw me, I was angry'.

- (40)
- (a) *ni-ni-mw-on-a* *a-ki-end-a* Bweni
 1sgSM-PAST-2sgOM-see-FV 1sgSM-SIT-go-FV
 'I saw him going to Bweni.'
- (b) *ni-ni-kuon-a* *u-ki-ry-a*
 1sgSM-PAST-see-FV 2sgSM-SIT-eat-FV
 'I saw you eating'
- (c) *ni-ni-mw-on-a* *a-ki-rar-a*
 1sgSM-PAST-3sgOM-see-FV 3sgSM-SIT-sleep-FV
 'I saw him sleeping'
- (d) *ncana* *u-ta-kuwa-pi?*
 3-afternoon 3SM-FUT-be-where
 'Where will you be in the afternoon?'
- (e) *n-ta-kuwa* *dawe-ni* *n-ki-ring-a* *mnpunga*
 1sgSM-FUT-be 5-farm-LOC 1sgSM-SIT-see-FV 3-rice paddy
 'I will be in the farm (watching) guarding rice paddy'

ki- in (39 a-d) gives the sense of 'if' and 'when' and all this is considered to have referential meanings. Here *ki-* occupies tense slot. Whilst in (40 a-d) shows what is regarded by Marten (1998:149) as a temporally underspecified form, *ki-*. The formative *ki-* is now in a subordinate position and fully depending on the preceding matrix clause for its contextual information. *ki-* forms in (32 a-d) denote progressive sense similar to *ni-* / *-i-* forms.

It is evident in our data that the function of *ki-* form in KINgome matches that of SSW (See Nurse and Hinnebusch 1993: 367).

4.2 Consecutive *ka-*

KINgome displays *ka-* form in the following contexts:

- (41) (a) *nend-e-ni* *mu-ka-ry-e*
 go-SUBJ-PI 2plSM-CONS-eat-SUBJ
 'go and eat'
- (b) *ka-ry-e* *mačaza*
 2sgSM-eat-SUBJ 6-rice
 'go and eat rice'
- (42) (a) *tu-ri-kury-a* *tu-ka-šib-a*
 SM-PAST-VB-FV SM-CONS-VB-FV
 'we ate and we got full'
- (b) *ni-ni-čeng-a* *pori,* *ni-ka-hini* *harafu* *ni-ka-vun-a*
 1sgSM-PAST-clear-FV 5-bush 1sgSM-CONS-cultivate then harvest-FV 1sgSM-CONS-
 'I cleared the bush, cultivated and then harvested.'

The form *ka-* in (41 a & b) displays what is known as 'go and V(erb)' function (Botne 1999: 476-477) in Bantu languages whilst in (42 a & b) the form *ka-* is associated with the notion of consecutiveness. It gives narrative meaning to single observations that are recounted. In such narratives, the first verb establishes the time framework, which normally is far past *ri-*. The sequencing is then represented by the form *ka-*.

5 Conclusion

This preliminary description of AT system in KINgome, though sketchy and rudimentary, is an important addition to the study of SD features, which essentially contrast with NID and SSW in general. AT marking in KINgome consolidates a typical rural SD feature of *Ø...* Vh/a suffix and lacks of *-ete* suffix. To some extent, I believe, I have offered missing data in the study of Sabaki and Swahili in general as pioneered by Nurse and Hinnebusch (1993). More in-depth discussion of semantic extension and pragmatic interpretation of AT formatives are needed. I have simply attempted to present in this paper the association between AT formatives and the meanings they can express.

Abbreviations

AT	Aspect and tense system
CLIT	Clitic
COMP	Completive aspect
COND	Conditional marker
CONS	Consecutive
FUT	Future tense
FV	Final vowel
LOC	Locative marker
ND	Northern Swahili dialects
PAST	Past tense
PI	Plural marker
PST	Present tense
SD	Southern Swahili dialects
SIT	Situational marker
SM	Subject marker (concord)
SSW	Standard Swahili
SUBJ	Subjunctive
VH	Vowel harmony

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The passive in Persian

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1 Introduction

In his typological study of passive constructions, Keenan (1985) states that if a language has any passives, it has 'basic passives'; that is, passives formed with a past participle and auxiliary. This paper analyses the occurrence of such constructions in Modern Persian. It provides an overview of the syntax of passive formation from the perspective of Lexical Functional Grammar (LFG), before going on to identify some of the semantic and pragmatic issues involved.

2 LFG and the passive in Persian

Bresnan (1982) argues that the systematic relationship between actives and their corresponding passives can be expressed by a universal lexical rule: for any active lexical entry for a stem which mentions SUBJ and OBJ functions, a passive construction based on the same stem will replace SUBJ with an oblique-object function, and OBJ with SUBJ. This process can be demonstrated with the following active and corresponding passive sentences in Persian:

- (1) Hasan sag-hā-rā košt-0
 Hasan dog-PL-DO killed-3SG
 'Hasan killed the dogs.'
- (2) sag-hā tavassot-e Hasan košt-e šod-and
 dog-PL by.means-of Hasan killed-PTC became-3PL
 'The dogs were killed by Hasan.'

Note three pieces of evidence that the OBJ has become subject: it has lost its *-rā* accusative marking; gained zero marking¹; and got agreement on the verb. On an LFG analysis, the agent *Hasan* is effectively demoted from subject position, an impression strengthened by the fact that it can be omitted entirely:

- (3) sag-hā košt-e šod-and
 dog-PL killed-PTC became-3PL
 'The dogs were killed.'

However, although the agent may be omitted, it is still implicitly present; so, for example, it cannot be explicitly denied, nor can it be replaced by a phrase such as *xod be xod* 'gratuitously':

- (4) * sag košt-e šod-0 bedun-e inke kasi
 dog killed-PTC became-3SG without-EZ that someone
- in kār-rā kard-e bāš-ad.
 this task-DO did-PTC SBJ.be-3SG
 'The dog was killed without anyone doing it.'

¹ Indefinite or non-salient objects may also receive zero-marking in Persian; but the object in this example is definite and salient.

- (5) * sag xod be xod koš-e šod-0
 dog self to self killed-PTC became-3SG
 'The dog was killed gratuitously.'

If therefore seems to make more sense to speak of suppression rather than deletion of the agent, an intuition reflected by the Persian name for this passive construction, *siqe-majhul* 'unknown agent'.

In simple terms LFG, which adopts a relational rather than configurational approach to universal grammar, could characterise the remapping of such predicative relations as follows:

- (6)
- | | | | | |
|---------------|--|-------------------|--|----------------|
| <i>active</i> | $\text{PRED} < x \quad y >$ | \leftrightarrow | $\text{PRED} < x \quad y >$ | <i>passive</i> |
| | $\left \begin{array}{c} s \\ 0 \end{array} \right $ | | $\left \begin{array}{c} s \\ 0 \end{array} \right $ | |
| | | | (OBL) s | |

This shows that the active and passive verb forms share the same predicate argument structure; but the roles may be mapped to different sets of grammatical functions. Hence the fact that the actor and undergoer are in different positions in their respective active and passive sentences in Persian is not a result of their being subject to movement rules in between some abstract 'deep structure' and the surface structure; rather, the apparent movement is an epiphenomenon of the configurational structure of Persian interacting with principles of completeness (every function designated by a PRED must be present in the f-structure of that PRED) and coherence (every argument function in an f-structure must be designated by a PRED).

In Lexical Mapping Theory, these principles are restated in terms of the restrictiveness and objectiveness of thematic roles. We set out below some relevant rules and conditions, taken from Bresnan (2002:307-311):

- (7) *Thematic Hierarchy*
 agent > beneficiary > experiencer/goal > instrument > patient/theme > locative
- (8) *Logical Subject, θ*
 θ designates the most prominent semantic role of a predicator.
- (9) *The Subject Condition*:
 Every predicator must have a subject.
- (10) *Passive*:
 θ |
 |
 \emptyset

² This symbol signifies that the most prominent semantic role (θ) cannot be mapped onto a syntactic argument in the f-structure; it is, however, still linkable to an argument adjunct (e.g. PPP).

Together, these principles help to explain the formation of the passive in terms of the features of the various arguments involved: [\pm], determining whether a syntactic function is *unrestricted* (subjects and objects) as to its semantic role; and [\pm], determining whether a syntactic function is *non-oblique* (subjects and obliques) in that it may complement intransitive predicators such as N or A. It follows that a [\pm] role cannot be mapped onto an object, whereas a [\mp] role can be mapped onto a subject or object. This is developed further in section (4) below.

3 Passivisation: lexical or syntactic?

A structure-preserving rule may exist between two constructions if both can be generated by the rules of the base; one's morphological forms are predictable from those of the other; and the co-occurrence restrictions in one are predictable from those in the other. A number of linguists have argued on this basis that derivational rules such as dative shift and the 'basic passive' in English are lexical in nature. Wasow (1976) lists a number of criteria which, if fulfilled in combination, provide strong evidence that a given rule is lexical. In particular, and relevant to the process of passivisation in Persian, he notes that:

- Lexical rules may relate items of different grammatical categories, whereas transformational rules cannot change node labels.³*

'May' is an important word here: lexical rules do not have to change node labels either. For example, one instance of causative formation in Persian is a morphological process ascribable to a lexical rule which changes an active verb into a causative verb (so involving no change in grammatical category):

- (11) mi-res-ad
 PROG-arrive-3SG
 'He arrives.'
- (12) salām mi-res-ān-ad
 greetings PROG-arrive-CAUS-3SG
 'He brings greetings.'

However, there is good evidence that for past participles with a passive sense, a change of grammatical category is involved:

- (13)(a) (i) pirāhan-e šik
 shirt-EZ trendy
- (ii) mard-e besār biadab
 man-EZ extremely rude
- (b) (i) pirāhan-e farsud-e
 shirt-EZ worn out-PTC
- (ii) mard-e besār ašoft-e
 man-EZ extremely disturbed-PTC
- (14) (a) ketāb-e jāleb-tar
 book-EZ interesting-COMPAR

³ Some of the following evidence is adapted from Burjasteh (1983:142-9).

- (b) ketāb-e farsud-e-tar
book-EZ battered-PTC-COMPAR

(13a) and (b) show that, like adjectives, passive participles may appear in the normal post-nominal adjectival position; and may be adverbially modified by (e.g.) *beštār* 'extremely'. (14)(a) and (b) show that, like normal adjectives, some passive participles may be modified by the comparative suffix (this is also true of the superlative suffix *-tārīn*). Hence a change of node label from verb to adjective does seem to be involved.

ii. *Lexical rules may have idiosyncratic exceptions, or be unpredictable in some other way.*

Barjesteh notes a number of verbs from which passive participles may be derived to form nominals with unpredictable meanings:

- (15) *kuffan* 'to beat' → *kuff-e* 'minced meatballs'
kešīdan 'to pull' → *kešīd-e* 'slap'
didan 'to see' → *did-e* 'sight; eye'

Verbs are lexically specified for whether or not they can be passivised⁴, even though they may take two syntactic arguments in their active forms (e.g. (18b)). Where they cannot, an alternative means of 'agent-suppression' must be found, such as an impersonal third-person plural subject:

- (16) *did-e* *šod-0*
seen-PTC became-3SG
'It was seen.'

- (17) **goft-e* *šod-0*
said-PTC became-3SG
'It was said.'

- (18)a *goft-and*
said-3PL
'It was said/They said.'

- b. *ānhā chi goft-and?*
they what said-3PL
'What did they say?'

On the basis of the evidence above it seems reasonable to conclude that the passive is formed by a lexical rule in Persian. However, the passive [participle + auxiliary verb] unit behaves in many ways analogously to compound verb units, and these raise some problems for a lexicalist account.

4 The passive and compound verbs

Sadeghi (1993:241) reports that a maximum of one hundred and fifteen simple verbs are in use in Modern Persian; all the rest are compounds. It is notable that compound

⁴ In section 5 it will also be shown that verbs must admit a [+volition] reading in order to be passivisable.

verb phrases manifest some properties which suggest they are derived via a lexical process, and others which suggest a syntactic derivation.

Key arguments for the former include the fact that compound verb phrases carry a single, primary stress on the final syllable of the preverbal element (excluding inflectional endings):

- (19) *zamtN xord-0*
ground ate-3SG
'He fell down.'

- (20) *xejālAT kešīd-am*
shame drew-1SG
'I was ashamed.'

Secondly, compound verbs may be nominalised and used to form adjectives and adverbs:

- (21) *lebās-nā-ye xošk-šod-e*
dress-PL-EZ dry-became-PTC
'the dried clothes'

- (22) *Hamīd šenākonān be xoški*
Hamīd while swimming to dry land
Hamīd reached land swimming. reached-3SG

Thirdly, compound verbs resist separation by adverbs and (usually) direct objects:

- (23) *nāme-rā bezudi ersāl kon-id.*
letter-DO soon despatch do IMPER-2PL
'Send the letter!'

- (24) **nāme-rā ersāl bezudi kon-id*
letter-DO despatch soon do IMPER-2PL
(25) **bezudi ersāl nāme-rā kon-id*
soon despatch letter-DO do IMPER-2PL

Conversely, key arguments for the process of compound verb formation deriving from a syntactic rule include the fact that inflectional prefixes (negativizer, imperative/subjunctive, progressive and imperative-negative) attach to the verb stem, thereby intervening between the two parts of the compound:

- (26) *motāvāle ne-mī-šāv-am*
understanding NEG-PROG-become-1SG
'I don't understand.'

The auxiliary of the future tense, the progressive auxiliary and a direct object clitic can intervene:

- (27) *pas-eš xāh-am dād*
back-it-DO will-1SG give
'I will give it back.'

Thirdly, and significantly, the verbal part of the compound may take two pre-verbal elements, which can be coordinated or gapped⁵:

- (28) *sāh-hā* *sāsān-rā* *šenkanje* *va* *azāb*
 year-PL Sasan-DO torture and torment **dād-and**
 'They tortured and tormented Sasan for years.'
 gave-3PL

- (29) *natavānest-am* *harānče* *fēkr* *mī-kard-am* *va*
 NEG-could-1SG whatever think PROG-did-1SG and *ehsās*
 reveal give-1SG
 'I couldn't reveal what I thought and felt.'

boruz dah-am
 reveal give-1SG
 'I couldn't reveal what I thought and felt.'

In most of the examples above, a passive [*participle plus auxiliary*] phrase may be substituted for the compound verb, e.g.:

- (30) *single stress*: *nevEŠT-e* *šod-0*
 wrote-PTC became-3SG
 'It was written.'

- (31) *adjectivization* in *kelid* *peydā šodan-i*
 this key found/become-AFF NEG-is 3SG
 'This key is not to be found.'

- (32)(a) *anli-separation*: *tond tond* *sāxt-e* *šod-and*
 fast fast built-PTC became-3PL
 'They were built rapidly.'

- (b) * *sāxt-e* *tond tond* *šod-and*
 built-PTC fast fast became-3PL

- (33) *separation by some elements*: *košt-e* *na-xāh-am* *šod*
 killed-PTC NEG-will-1SG become
 'I shall not be killed.'

- (34) *coordination*: *natavānest-am* *harānče* *did-e* *va* *šentid-e*
 NEG-could-1SG whatever saw-PTC and heard-PTC

šod-0 *tarānf* *kon-am*
 became-3SG description do-1SG
 'I couldn't describe what had been seen and heard.'

At this point we can conclude that passive verb phrases in Persian, like compound verbs, exhibit both morphological and phrasal properties. The maxim of Occam's razor cautions against positing two passivisation rules, one lexical and the other syntactic, where one would do: and none of the evidence provided above forces a conclusion that two separate rules are in operation. This raises the question: is the passive phrase formed in the lexicon or in the syntax?

⁵ Data from Mejerdoomian (2002).

Ackermann and Lesourd (1997:71) argue that taken together, the *Weak Lexicalist Hypothesis* (all morphological derivation is carried out in the lexicon) and the *Lexical Integrity Principle* (syntactic rules neither analyse nor alter word structure) support a 'Hypothesis of Morphological Lexicalism' with two sets of 'Cherished Beliefs':

- (35)(i) *Information about argument structure, valence and case government is associated exclusively with lexical representations (i.e. semantic, argument and grammatical structure information); and*
 (ii) *Only lexical rules may alter or determine information in these domains.*

- (36)(i) *Only morphological objects may be associated with lexical representations (with the possible exception of phrasal idioms); and*

(ii) *Morphological objects exhibit lexical integrity.*

However, as Ackermann and Lesourd point out, these two sets of beliefs combined lead to something of an analytic paradox when it comes to complex predicate formation. As the Persian data above strongly suggests, the derivation of a passive construction involves the manipulation of lexical information, and so seems to be carried out by lexical rules. But the resulting construct does not display lexical integrity (various elements can intervene, and two passive participles may be coordinated with one auxiliary): hence it cannot be classified as a morphological object, cannot be associated with a lexical representation, and so cannot be formed by lexical rules.

In his treatment of Bantu and Romance causatives, Aisina (1997) moves away from (35) and proposes that although the complex argument structure (a-structure) for causatives in both languages is the same, it is formed in the lexicon for Chichewa but in the syntax for Catalan. This analysis appears successful for languages where a complex predicate is either a synthetic morphological object or an analytic non-morphological object. The difficulties arise – as Ackermann and Lesourd note for Hungarian, and as is equally problematic for Persian – when a complex predicate does not fit neatly into either category.

The way out of this paradox which they propose is to weaken the notion of lexical integrity outlined above in (36) and concede that morphological rules may apply to lexically formed analytic expressions as well as to individual words. How would this work for Persian?

Because passive constructions, although syntactically separable, behave like a unit with respect to morphological derivations, we believe it makes sense to treat them as derived by lexical rules. It is not efficient to propose both syntactic *and* lexical rules of passivisation, nor would it be easy to identify specific cases of one or the other since evidence for both is often combined in the same construction. The ability of past participles with a passive sense to change grammatical category, and their idiosyncratic formation, are both strong pieces of evidence; and in addition, the passive seems to feed other lexical processes such as the formation of derived nominals (e.g. *kufīe*).

In terms of argument structure, *sodan* might be taken to form an incomplete, 'passive' predicate:

- (37) *Passive Argument Structure for sodan*
 [PRED *sodan** <[], []>]
 [-o] [-p]
 | |
 (Obl) su

This a-structure is incomplete on its own: it requires a second predicate to provide its arguments, the first of which (the original agent) will be suppressed or move to the periphery of the clause while the second becomes the subject of the passive phrase. But how the argument structure of *sodan* combines with another predicate begs the question of how the passive construction relates to the Persian compound verb paradigm.

5 Is *sodan* a 'light verb' in passive constructions?

The description of the verbal part of Persian compound verbs (CVs) as a 'light verb' (LV) should not be taken to imply that such a constituent is semantically empty. Karimi (1997) moves away from her early position (Mohammad & Karimi (1992)) and argues that although LVs are semantically bleached, they are not semantically empty. Meyerdominian (2002) agrees, while noting that they can carry tense, aspect or negation morphology like simple verbs, and each correspond to a 'heavy' or fully thematic verb. We shall make use of the term 'light verb' here because the distinction with 'heavy verbs' is a useful one to make in contrasting the role of *sodan* with that of LVs.

There are a number of close parallels between CVs and the passive construction with *sodan*:

i. *Exhibition of both morphological and phrasal properties.* This has already been discussed above: both passive constructions and CVs carry a single primary stress, may be nominalized, and resist separation by adverbs and (usually) direct objects; but various morphological and syntactic elements may intervene, and one verbal element may combine with two non-verbal elements, which may be coordinated or gapped.

ii. *Provision of TNS and AGR-marking.* LVs carry this for their compounds; so does *sodan* in passives. The past participle is used in all tense inflections of the passive, and is unmarked for agreement.

iii. *Fixed evolution interpretation.* Karimi (1997:295-6) observes that the volitional force of a heavy verb is not necessarily preserved when it enters a CV construction as a light verb, citing the examples below. Both sentences would be grammatical without the word 'intentionally':

- (38) *Kimia amdan dir be kelas amad-0*
Kimia intentionally late to class came-3SG
'Kimia intentionally came to class late.'

⁶ In the sense of Jespersen (1954)

- (39) **Kimia amdan dir be donyâ amad-0*
Kimia intentionally late to world came-3SG
 *'Kimia intentionally was born late.'

This loss of volitional force contrasts with the passive construction, which Dabir-Moghaddam (1982:81-84) claims is a governed rule in the sense that it only applies to verbs that can express a volitional act. We may add that this volitional force is preserved under passivisation. So [-volitional] verbs, including *psych*-verbs, may not be passivised ((40) and (41) below), while passive constructions may not be modified by adjectives such as accidentally ((42)):

- (40) **badan-eš az in dâru zaiif kard-e šod-0*
body-his from this drug weak made-PTC became-3SG
 'His body was made weak by this medicine.'
- (41) **Armin tavassot-e hame tarsid-e šod-0*
Armin by-EZ everyone feared-PTC became-3SG
 Armin was feared by everyone.
- (42) **sag-e Mahnaz etefagan košt-e šod-0*
dog-EZ Mahnaz accidentally killed-PTC became-3SG
 'Mahnaz's dog was killed by mistake.'

This feature, then, might be argued to point up a difference between *sodan* and LVs. Other significant differences include:

iv. *Specification of Aktionsart/aspectual information.* It is widely observed in the literature that LV alternations affect the event structure of the CV. Compare, for example, (43)a and b below, or the punctual versus durative senses added to the CV by *gereft* (44) and *kešid* (45) respectively:

- (43) a *nafas kešidan to take a deep breath*
 b *nafas zadan to pant*
- (44) *dast-e Daryuš dar yek (sanjve) *sâ-at-hâ dard gereft-0*
hand-EZ Daryuš in one (second) hour-PL pain got-3SG
 'Daryuš's hand (started to) hurt (in one second / *for hours).
- (45) *Daryuš (*dar yek sanjve/ sâ-at-hâ) dard kešid-0*
Daryuš (in one second/ hour-PL) pain pulled-3SG
 Daryuš was in pain ('in one second / for hours).

In passive constructions, on the other hand, alternations of this kind are not possible for the simple reason that passives always select the verb *sodan*. This is not to say that the event structure of all passives in Persian is identical, rather that is predominantly dictated by the event structure of the pre-passivised verb or verb phrase.⁷ Moreover, the normal [+inchoative] sense of *sodan* is absent in passives: *košt-e šod* does not mean 'he began to be killed', but 'he was killed'.

⁷ One of Keenan's (1975) passive universals is that 'if a language has any passives, it has ones which can be used for the perfective range of meaning', and it may well be the case that passivisation in Persian commonly carries with it some notion of perfectivity – certainly passives formed with *sodan* with a progressive inflection are extremely uncommon, and arguably marked. But further exploration is beyond the scope of this discussion.

v. *Compound verbs may themselves be passivised*, providing one of the clearest examples of how, as we have just discussed, the pre-passivised phrase may control the final event structure. So for example the event structure of (48) is highly punctual, and not at all inchoative.

- (46) *sal-hā dar zendān* Esi *šekanje dād-e* *šod-0*
 year-PL in prison Esi torture given-PTC became-3SG
 'For years Esi was tortured in prison.'
- (47) name *ersāl kard-e* *šod-0*
 letter despatch done-PTC became-3SG
 'The letter was despatched.'
- (48) bomb *lavassot-e nasrīn monfajēr kard-e* *šod-0*
 bomb by-EZ Nasrīn exploded made-EZ became-3SG
 'The bomb was detonated by Nasrīn.'

In some instances, a sentence may be ambiguous between a passive and an inchoative reading. Dabir-Moghaddam (1982:79ff) uses the availability of some compound verbs to passivisation to resolve this ambiguity, commenting on sentences such as:

- (49) a. *āb sard bud-0*
 water cool was-3SG
 'The water was cool.'
- b. *āb sard šod-0*
 water cool became-3SG
 'The water became cool.'
- c. *āb (tavassot-e Mahmud) sard šod-0*
 water by Mahmud cool became-3SG
 'The water was cooled (by Mahmud).'
- d. *āb (lavassot-e Mahmud) sard kard-e šod-0*
 water by Mahmud cool made-PTC became-3SG
 'The water was made cool (by Mahmud).'

The verb in sentence (a) is a stative, in (b) a straightforward inchoative, and in (d) a passive. But what of (c)? Dabir-Moghaddam proposes that the optional presence of an agent in such sentences proves that they are actually opaque passives, and have undergone an optional process of '*kardan* deletion' (example (48) would also mean much the same without the participle *kard-e*).

In any case the existence of such examples serves to illustrate that the verb *šodan* is not combining with pre-verbal elements such as *monfajēr* and *sard* to create a compound verb; rather, it is adding passive force to verbs which are already compound, such as *sard kardan* 'to make cool'.

vI. *A primary function of šodan is 'agent-suppression'*. It is worth noting that the past participle in Persian does not necessarily carry a passive sense in and of itself: in combination with auxiliaries such as *budan* 'to be', for example, a transitive verb will continue to have active voice:

- (50) Rahīm Hasan-rā *zad-e* *ast*
 Rahīm Hasan-DO hit-PTC is 3SG
 'Rahīm has hit Hasan.'
- (51) Rahīm Hasan-rā *zad-e* *bud-0*.
 Rahīm Hasan-DO hit-PTC was-3SG
 'Rahīm had hit Hasan.'
- (52) Hasan *zad-e* *šod-0*.
 Hasan hit-PTC became-3SG
 'Hasan was hit.'

It therefore seems logical to treat *šodan* as an auxiliary, not a light verb. Unlike light verbs it is always specified for [+volitional], and has little of any impact on the Aktionsart class of the event described. Like other auxiliaries, it functions to bear tense and subject-agreement; in addition, it suppresses the agent and promotes the undergoer by reducing by one the number of arguments.

6 The passive, inchoative and 'light verbs' – semantic representation

We have seen that *šodan* in its passive use differs from both inchoatives and light verbs in that it must be [+volitional]; it loses its default inchoative sense; and it suppresses the agent through passivisation. In her article on complex predicates in Urdu, Butt (1997) shows how Urdu light verbs contribute semantic information [+conscious choice] and [+inception/completion] to complex predicates. She uses Jackendoff's (1990) theory of Conceptual Semantics to construct an elaborated level of argument structure. In this section the same theory will be applied to the passive in Persian.

Jackendoff's basic analysis of the process of passivisation is straightforward: the external argument-marking index *i* is deleted, and one of the other indices in the verb's conceptual structure is changed to *i* so that this other argument will appear in subject function. Note that the original or 'logical subject' has not been deleted altogether; it is now merely implicit and, as Jackendoff notes, available for binding the subject of the complement in the well-known example 'The ship was sunk to collect the insurance.'⁸

In his terms, a 'heavy' verb with a full lexical specification such as *koštan* 'to kill' might have a simplified lexical conceptual structure (LCS) something like figure (53):

- (53)
$$\left[\begin{array}{l} \textit{koštan} \\ \text{CS}^+ (\text{X}_1, \text{BE/DEAD } [\text{Y}_1]) \\ \text{AFF} (\text{X}_1, [\text{Y}_1]) \\ \text{E} \end{array} \right]$$

This simplified structure shows a basic semantic structure for the verb, whereby X causes Y to be dead. CS⁺ marks successful causation, while the 'i' and 'j' co-indexing shows that the person doing the causing is to be co-indexed with the actor on the action tier (AFF stands for 'affect'), and the person being dead with the patient on the

⁸ This distinction may be made transparent by comparing passive and stative constructions: for example, in Bantu languages, the agent is suppressed in the former but eliminated in the latter (compare 'The house was built (by Jack)' with 'The house collapsed (by Jack)').

action tier. The action tier is not specified for volitionality, since killing may be deliberate or accidental. Finally, the 'E' marks this predicate as complete in its own right; once it has its arguments, it will be fully semantically specified without the need for any additional predicating element.

The verb *sodan* in its passive sense (combined with a past participle) would then have an LCS something like (54):

- (54)
$$\left[\begin{array}{l} \textit{sodan} \text{ (passive)} \\ \left[\dots \right] \\ \text{AFF}_{+vol} \text{ (I, I, [Y]1)} \\ \text{E}_T \end{array} \right]$$

The first level of the LCS is left blank, reflecting the verb's function as an auxiliary. The action tier is specified for [+volitional], and has a blank first argument to show that although there is an implicit actor, it is not the external argument of the verb. The second argument is co-indexed with 'i' to show that the second argument of any predicate with which this verb combines will be both the subject (since no S is specified and every verb must have a subject) and patient (it is the second argument). Finally, the 'E_T' marks the fact that this is a transparent event⁹; *sodan* must combine with some other predicating element before it can be semantically complete.

The LCS for the passive form exhibits clear contrasts with that for the inchoative form:

- (55)
$$\left[\begin{array}{l} \textit{sodan} \text{ (inchoative)} \\ \text{INCH (IS}_{state} \text{X)} \\ \text{AFF (X)} \\ \text{E}_T \end{array} \right]$$

This construction has a clear inchoative (INCH) meaning, and specifies the state of a single argument X. Volitionality does not become an issue in the absence of an actor role (Jackendoff (1990:129)). The event is still a transparent one because the verb usually needs to combine with an adjective to describe its patient.

7 Pragmatic considerations

The passive construction is not the only device available for describing an event without specifying the agent. Persian is one of many languages which may use an impersonal third person plural for this purpose:

- (56) *hasan rā kotak zad-and va az tars panhān šod-o*
Hasan DO attack struck-3PL and from fear hid became-3SG
 '(They) beat up Hasan/Hasan was beaten up, and from fear he hid.
- (57) *u-rā gereft-and*
him-DO got-3PL
 '(They) got him/He was arrested

⁹ Baft's (1997) terminology

An alternative is to use an intransitive verb instead of a transitive one, in the case of those pre-verbal elements for which lexical rules allow this:

- (58) a. *Nimā āb-rā be juš āvard-o*
Nimā water-DO to boil brought-3SG
 'Nimā brought the water to the boil.'
- b. *āb be juš āmad-o*
water to boil came-3SG
 'The water came to the boil.'
- (59) a. *Nimā Homā-rā be gerye andāx-t-o*
Nimā Homā-DO to crying threw-3SG
 'Nimā made Homā cry.'
- b. *Homā be gerye oftād-o*
Homā to crying fell-3SG
 'Homā started to cry.'

Where such alternations as those in (58) and (59) are permitted, the passive does not generally occur. Where it can, three options may be available for agent suppression:

- (i) The third person plural impersonal construction (e.g. (57)). It is suggested that this is used either to give a negative connotation to the implicit agent and/or to imply that the agent is a part of some larger impersonal force, such as a foreign power or a criminal network, which the speaker does not want to name.
- (ii) The passive of a compound verb, with the past participle of that compound verb expressed (e.g. (48)). This construction is described as *sangin* 'heavy, formal' or *sagil* 'weighty, indigestible' by mother-tongue Persian speakers. It is suggested that it is used only in more formal language, and then mostly to avoid ambiguity between a passive and an inchoative reading (see section (5) above).
- (iii) The normal passive, with any past participle of a compound verb unexpressed (e.g. (2)). This construction is used in any situation where the speaker does not want to express the agent, other than those situations delineated in (i) and (ii) above. The other side of the 'agent-suppression coin' is a resulting weak topicalization of the patient.

8 Conclusions

This paper has sought to paint a lexicalist picture of the Persian passive construction, justifying an account which takes predicates to be specified for whether or not they can take a passive auxiliary, and which allows those which can to combine with it through a fusion of argument structures to produce a [+volitional] passive construction in which the agent is suppressed. We have further argued that this construction is to be distinguished both from inchoative constructions with *sodan* and from compound verbs consisting of a pre-verbal element and a light verb, showing that all three contribute different amounts of semantic information to the functional structure of the complete predicate.

These conclusions fit with Keenan's (1985) typological generalisations regarding the passive, which leads us to expect that if a language has passives:

- it has basic passives (such as a past participle + auxiliary);
- it has passives of activity verbs;
- it has passives of transitive; and
- the presence of agent phrases is marked.

One additional typological point: Siewierska (1984) notes that in many languages (including German, Latvian, Kupia, Kolami and Hindi) the word for 'inchoative' 'become' does double duty as the passive auxiliary.

Finally, we have noted some of the different mechanisms available in Persian for agent suppression. Although the boundaries are somewhat blurred, it is possible to identify some general principles for choosing between them.

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From P2-clitic to verb-clitic: three approaches to an explanation

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0 Introduction

The Romance and Slavonic families provide well-documented examples of the change from a second-position (P2) clitic system to a verb-adjacent clitic system.¹ In Latin clauses, for instance, the clitics in question occurred at P2, but in the modern Romance languages; French and Spanish, the corresponding clitics are positioned adjacent to the verb. Similarly, on the basis of Old Church Slavonic, Common Slavonic is assumed to have had a P2-clitic system, and the same type of system is preserved in the majority of the Slavonic languages, but modern Bulgarian and Macedonian position their clitics adjacent to the verb. It is obviously of interest, therefore, to explain how a P2-clitic system changes to a verb-clitic system. This article will briefly consider three rather different approaches.

1 A minimalist generative approach

In their discussion of the Slavonic languages generally, Franks & King (2000:311-30) analyse the P2-clitic languages, i.e. the majority of the Slavonic languages, in the following terms. Pronominal clitics are base-generated as arguments of the verb and, like all NPs in these languages, they are part of a higher KP (case phrase). From their argument positions they raise, as K^0 heads, to Agr, for case-checking purposes. Specifically, dative clitics move to AgrIO; accusative clitics to AgrO; and reflexive clitics to Ref. The majority of the auxiliary-verb clitics (those which precede the pronominal clitics within a clitic cluster) are treated as AgrS heads, but those auxiliaries which occur at the end of a clitic cluster, such as Slovene 3sg. *je* or the Slovene future auxiliary *bom, boš, bo...*, are analysed as heading a Tense phrase. In the verb-clitic languages Bulgarian and Macedonian, on the other hand, pronominal clitics do not occur as arguments but rather are treated as pure agreement markers. As such they are base-generated under Agr. Adjacency between clitics and the verb, in these languages, is achieved by movement of the verb. Verb-clitic languages also exhibit the phenomenon of "clitic doubling", illustrated by the Macedonian sentence in (1):

- (1) Marija go poznavala učenikot [Mac]
 Mary him knows pupil.DEF
 'Mary knows the pupil'

(In P2-clitic languages, where clitic objects are arguments of the verb that subsequently move to Agr, there is no possibility of clitic doubling, since a clitic object in an argument position rules out the possibility of a full NP occupying that same position.)

As regards the history of Bulgarian and Macedonian, Franks & King see the loss of case and the introduction of articles, which are also characteristic of these languages, in terms of the original KP giving way to a DP (determiner phrase), and the K^0 morpheme – instead of moving to Agr – being reanalysed as base-generated in Agr

¹ The clitics with which we are concerned correspond to independent words from a number of categories including, in particular, object pronouns and auxiliary verbs. That the change in question is not limited to Indo-European, is demonstrated by Steele (1977:539) on the basis of Uto-Aztecan data.

(2000:318). Thus they treat the loss of case and the rise of articles as triggering the change from the P2-clitic system of 'Older Bulgarian' [and 'Older Macedonian'] to the verb-clitic system of the present-day languages.

The work of Ritel (1975) and Andersen (1987) on Polish demonstrates that over the last 500 years this language has been gradually undergoing a change from a P2-clitic system to a verb-clitic system (and the further stage at which the verb-clitics become verb inflections). (See also Bennett 2002:180-83 for further discussion.) However, Polish still has a rich case system and it has not developed articles. Polish thus demonstrates that the Franks & King (2000:318) 'diachronic scenario' is not generally valid as an explanation of the shift from a P2-clitic system to a verb-clitic system.

2 A competition-based network-grammar approach

The second approach (Bennett 2002:179-80, 184-5) started from 'functional', as opposed to 'formal', considerations. It was suggested that in a P2-clitic system the clitics are positioned on the basis of discourse structure, including information structure (Halliday 1994), and are specifically 'thematic' and 'given', whereas in a verb-clitic system they are positioned on the basis of their semantic relatedness to the verb.² Three varieties of P2-clitic placement are illustrated by the Slovene, Croatian and Serbian examples in (2) – (3), taken from the respective translations of George Orwell's *Nineteen Eighty-Four*. (The clitics are italicised in the three Slavonic sentences, and hold emphasis in the English original indicates which constituent is the obvious candidate for tonic stress in the discourse context in question.)

- | | | | | | | | | |
|-----|---------------------|-----------|------------|------------|------------|-----------|--|--|
| (2) | [Če ne-] <i>vam</i> | <i>bo</i> | slovar | izročil | moj | služabnik | [Sin] | |
| | if not to-you | will | dictionary | hand-over | my | servant | | |
| | | | | | | | 'If not, my servant will give you the dictionary.' | |
| (3) | a. | moj | če | <i>vam</i> | sluga | dati | ričnik | [Cro] |
| | | my | will | to-you | servant | give | dictionary | |
| | b. | moj | sluga | če | <i>vam</i> | dati | rečnik | [Ser] |
| | | my | servant | will | to-you | give | dictionary | |
| | | | | | | | | 'my servant will give you the dictionary.' |

The main clause of the Slovene example, (2), is a classic case of a clause that progresses (in Hallidayan or Prague-School terms) from what is maximally 'thematic' and 'given', to what is maximally 'rhematic' and 'new', or, alternatively, that exhibits a progressively increasing level of 'communicative dynamism'. As regards the suggestion that the clitics here are 'thematic' and 'given', *vam* 'to-you' is situationally given, in that it refers to the addressee, and the futurity signalled by *bo* 'will' is predictable in the sense that the event of handing over the dictionary necessarily follows the situation alluded to in the subordinate clause *Če ne* 'If not'.

That the clitics in (2) occur in clause-initial position in the main clause depends also on the fact that the Slovene clitics in question are prosodically neutral, i.e. able to be attached to a neighbouring accented word either enclitically or proclitically (Toporišič 1976:58, 535). Sentence (2) would typically be said with an intonational break after *Če ne* 'If not', and the clitics are then attached to the following accented word *služabnik*

² We are concerned here exclusively with the positions occupied by clitic clusters as a whole. The important issue of the order of elements within a clitic cluster is ignored in this article.

'dictionary'. Even though the clitics in this example occur in clause-initial position in the main clause, it is nevertheless appropriate to describe them as P2 clitics. Just as in German, the (non-clitic) verb *gehe* 'go' occurs in second position in both (4) and (5) – since the subordinate clause *Wenn es regnet* 'If it rains', like the adverb *Jetzt* 'now', occupies the first slot within the sentence as a whole – so also in (2) the subordinate clause *Če ne* 'If not' occupies the first slot within the overall structure of this sentence; and the clitics, which immediately follow the subordinate clause, are therefore in second position.

- | | | | | | | | |
|-----|------------------------|-------------|-------------|--------------|----------------------|-------|-------------------------------|
| (4) | <i>Jetzt gehe</i> | <i>ich</i> | <i>nach</i> | <i>hause</i> | [Ger] | | |
| | now | go | I | to | home | | |
| | | | | | 'I'm going home now' | | |
| (5) | <i>Wenn es regnet,</i> | <i>gehe</i> | <i>ich</i> | <i>nach</i> | <i>hause</i> | [Ger] | |
| | if | it | rains | go | I | to | home |
| | | | | | | | 'If it rains, I'm going home' |

The corresponding Serbian and Croatian clitics are strictly enclitic, and may not follow a pause. In (3a) they follow the first word of the (main) clause, even though this entails interrupting a complex clause constituent; and in (3b) they follow this constituent as a whole. Like the issue of the order of elements within a clitic cluster (cf. fn. 2), the important difference between (3a) and (3b) is not our primary concern in this paper.

The notion of 'competition', which features in the title of this section, is relevant here in particular in connection with the shift of clitics from P2 positioning to verb-adjacent positioning. However, it is also relevant in relation to P2-clitic placement itself. Within an Optimality Theory framework (e.g. Anderson 2000), the clitics of examples (2) – (3) would be seen as conforming to a series of conflicting constraints, within which higher-ranking constraints win out over lower-ranking constraints. Assuming that an EDGEWORST constraint applies in Slovene, Croatian and Serbian, and that the clitics ideally occur at the left edge of their domain (because they are thematic in our terms), this constraint is out-ranked in Croatian and Serbian by the fact that the clitics have to be NON-INITIAL in their clause (because they are specifically enclitic).³

In connection with the view that the shift from P2-clitics to verb-clitics involves a change from discourse-oriented positioning to semantically-oriented positioning (Bennett 2002:180), it was suggested that at any given time particular clitics are subject to two different pressures – on the one hand, the pressure to congregate with other informationally non-prominent items near the beginning of a clause and, on the other hand, the pressure to be attached to the word to which they are most closely related semantically, i.e. the verb. It was suggested, in addition, that over time there is a gradual shift in the magnitude of the two pressures, such that particular originally P2 clitics gravitate progressively to the verb. Even in a primarily P2-clitic system such as that of Old Church Slavonic or Old Russian, the (accusative) reflexive clitic frequently occurred immediately after the verb rather than at P2 (Stone 1996:216, And 1975:96-97). Bennett assumed (2002:180) that in such cases the pressure to occur next to the verb was greater than the pressure to occur in the thematic position at/near

³ Among the questions facing such an analysis is that of the domain within which the constraints apply in Slovene, Croatian and Serbian.

the beginning of the clause, because reflexive verbs are often equivalent to middle voice verbs or intransitive verbs.

Given such an informal account of the facts, the next step was to consider how it might be formalised. The fact that we seemed to be dealing with competition between two possibilities, with the stronger one winning out, brought to mind Dell & Reich's (1980) computer-simulation of slips of the tongue. In a relational network grammar (RNG) framework incorporating the notion of 'spreading activation', Dell & Reich were able to simulate all categories of commonly attested slips of the tongue and also to make a number of testable predictions. To take a simple example of competition in their model, suppose the system was attempting to pronounce the 'word string' *hop deck*; it could happen that at the point where /d/ needed to be pronounced, /b/ was still receiving some degree of activation; and it could even happen that the level of activation of the /b/ would be higher than that of the /d/ – in which case the computer would 'pronounce' the perseveration error *hop beck* instead of *hop deck*. The likelihood of this happening in the simulation was related to the frequency with which the /b/ node had been used immediately before (1980:76–78). The competition in this case involves the fairly straightforward situation where two phonemes are competing to occur in the same slot. By contrast, the clitics example seemed to involve two different slots competing for the same item, which appeared rather more difficult to formalise in the RNG framework.

It turns out, however, that there is a major problem with our informal account of the change from a P2-clitic system to a verb-clitic system. If the strength of the two different pressures on clitics can change over time in such a way that discourse-oriented positioning gradually gives way to a semantically-oriented positioning, one would predict that the reverse change could also take place.⁴ Yet, on the basis at least of the Slavonic and Romance languages, this latter possibility seems not to occur. We need therefore to look for some alternative understanding of the facts, which gives specific recognition to the unidirectional nature of the change in question.

3 A lexicalisation-based neuro-cognitive approach

The RNG framework mentioned in the previous section was a continuation of the theory known originally as 'stratificational grammar' (Lamb 1966). From early on, this approach aimed not merely to characterise the knowledge that constitutes linguistic competence but also to model various aspects of performance, such as the speech-production mechanisms that give rise to speech errors (Dell & Reich 1980). In the terminology of Lamb (1999:293), the theory at this stage was aiming to meet the requirement of 'operational plausibility', i.e. to provide a plausible account of the processes of producing and understanding speech. Further work within this framework added a second requirement, that of 'developmental plausibility', according to which the theory needs to provide a plausible account of how the proposed linguistic system can be learned by children. More recently still, a third requirement has been added, that of 'neurological plausibility', according to which a successful theory of language needs to be compatible with what is known about the brain from neurology and cognitive neuroscience. To reflect its concern with this third requirement, the model is now referred to specifically as 'neuro-cognitive relational network grammar' (Lamb 1999:passim), which I will abbreviate as NC-RNG.

⁴ I am grateful to Janez Oresnik for spotting this defect of Bennett (2002). As far as I can tell, the Franks & King 'diachronic scenario' fares no better on this issue.

The crucial notion within NC-RNG, from the point of view of the shift of P2-clitic systems to verb-adjacent clitic systems, is Lamb's (1999:163–70) conception of lexicalisation. Even though a word such as *happiness* can be understood on the basis of the meanings of its constituent morphemes, the frequency with which this combination occurs is such that the lexicon of the typical speaker will contain not just the separate lexemes *happy* and *-ness* but also a complex lexeme *happiness*. As Lamb puts it (1999:165): 'it is repeated use rather than degree of idiomatity that determines presence or absence of a higher-level lexical [node]'.⁵ Elsewhere he writes (1999:271): 'any two things that consistently occur together are likely to become associated'. Moreover, the more frequently any part of the linguistic network (or wider cognitive network) is used, the easier it is to use it again: 'The pathways of the brain are like pathways through a meadow or field or jungle – the more they are used the easier they become to use again' (1999:179). In formalising this phenomenon in NC-RNG, lines of different strengths are used (e.g. they are drawn with different thicknesses) and it is assumed that the strengths of the lines corresponding to frequently used items will increase over time. A further relevant point is that the existence of a complex lexeme does not mean that the item in question can only be processed as a single unit. It is quite possible that the information in question is redundantly represented and reflects different analyses simultaneously within the same cognitive system (1999:233). Even in the case of idiomatic complex lexemes such as *spill the beans* 'divulge information that should have been kept secret', where one might suppose that the literal meaning of the expression would not register at all, there may be some activation of the meaning that *spill* has in non-idiomatic combinations (cf. Lamb 1999:184, where a similar point is made about *hot in hot dog*).

I suggest that such ideas provide the basis for explaining the change of a P2-clitic system to a verb-clitic system – though it will require a considerable amount of work to flesh out all the details. Here I will attempt merely to give a broad outline.

In P2-clitic languages/dialects such as Serbian and Croatian, a wide variety of constituents can occur in first position in a clause, including the subject NP, an object NP, any kind of adverbial expression, the first word of a complex constituent, or the main verb. In longer sentences beginning with, say, an adverb followed immediately by one or more clitics, it is frequently the case that the main verb occurs later and is separated from the clitic(s) by one or more constituents. However, many of the sentences that one encounters, particularly in speech, are quite short. Moreover, quite a large proportion of them consist of just one clause-constituent and one or more clitics. In such sentences, the 'one clause-constituent' is far more likely to be a verb than, say, an adverb. It seems likely therefore that combinations of a main verb and one or more clitics will be encountered rather more frequently than, say, an adverb and one or more clitics. The crucial suggestion, at this point, is that the more frequent combinations represent a more advanced stage of lexicalisation. One example of a frequently encountered combination is that of a verb and a reflexive pronoun, and in Russian the process of lexicalisation (and grammaticalisation) in such cases has reached the stage where what used to be a reflexive clitic capable of being attached to words of a variety of categories is now specifically a verb suffix *-ca* (*-sja*) 'self'. In the course of such increasing lexicalisation in a language, the possibility gradually

⁵ I have substituted 'node' for the more technical term 'action' (Lamb 1999:72–77). In the present context it is unnecessary to digress to explain the precise definition of the latter term.

arises that, in sentences where the verb is not the first constituent, the clitic will be attached to the verb rather than occur at P2. As for the unidirectional nature of the change in clitic positioning, this would depend on the unidirectional nature of lexicalisation, which in NC-RNG is seen as involving a gradual strengthening of connections in the network as a result of increased frequency of use.

In discussing 'prototype effects', in the light of NC-RNG's account of language learning, Lamb writes (1999:226): 'One happy consequence... is that the network will automatically account for prototypicality phenomena without any additional theoretical equipment'. In a similar way, one might perhaps speculate that lexicalisation, which is an essential component of the normal use of a grammar in production and understanding, is not only a diachronic process in itself but may also be the cause of other, more far-reaching, diachronic processes.

4 Further discussion

The approach outlined in section 3 is obviously speculative. Its main advantage over the approaches discussed in sections 1 and 2 is that it offers the prospect of providing an explanation for the unidirectional nature of the change of P2-clitic systems to verb-adjacent clitic systems. One way to explore this approach further would involve corpus-based work aimed at establishing the relative frequency of particular constructions involving clitics. It would then be of interest to determine the extent to which this frequency information correlates with known diachronic facts – e.g. that on the whole, auxiliary-verb clitics gravitate to the main verb before pronominal clitics (except reflexive pronouns).

Finally, it is worth considering whether our preference for the third approach requires us to throw out the first two approaches in their entirety. From the first approach we might want to salvage, for instance, the distinction between arguments and agreement markers (Franks & King 2000:311). From the second, we might not want to abandon the view that P2 clitics are thematic and 'given'. Whatever components of the first two approaches can be shown to be valid will hopefully find a place in an appropriately elaborated version of the third approach. In any case, much work remains to be done.

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English hearts and what they tell us about language and mind¹

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In this critical application of the Conceptual Theory of Metaphor (henceforth CTM) I will show that with help of the CTM it is possible to capture very significant generalisations about the English language. This will be demonstrated with respect to a set of data comprising 60 representative English expressions which include the word *heart*. These expressions account for what may reasonably be considered the vast majority of uses of the word *heart* in English, an area of the language which, although seemingly abundant with metaphor, has not previously been the focus of an analysis in the CTM framework. The expressions are taken from corpus data representing both spoken and written sources. Employing CTM-tools, I shall extract mappings and metonymies that motivate all these expressions from a small number of proposed mappings. Supported by findings of the analysis, I furthermore propose that certain adjustments to the CTM are necessary, including the following:

- Not any possible hypothetical mapping fitting linguistic data is a plausibly psychologically real mapping.
- Whereas some contribution of mappings to understanding is likely, claims that mappings are necessary for conceptualisation, particularly the claim that target domain concepts can only be understood via source domain appears insufficiently supported.
- Mappings can likely generate, not only motivate senses of words and expressions.
- the addition of mapping rules (such as X AS PERSON) would enhance the ability of the CTM to capture generalisations.

On the other hand, findings from the present study provide support for claims that mappings are cognitive, not simply linguistic and that the nature of mappings is permanent not dynamic.

1.1 Introducing the CTM

The theoretical framework variously referred to as the cognitive (or conceptual) theory of metaphor, the contemporary theory of metaphor², or the mapping view, was proposed its present form by Lakoff & Johnson (1980), though parts of the paradigm may be traced in the thought of scholars much before them³. A considerable amount of work has been carried out both within the framework and in response to it and it has been acknowledged, even by its critics, to be "extremely influential" not only in (cognitive) linguistics, but in literary studies and the cognitive sciences as well (Keysar et al. 2000: 576). The scholarly debate over its merits, however, is still very much alive.

Support for CTM-claims comes from language data such as the following:

¹ This article is based on an MA dissertation submitted to SOAS in 2001.

² Clearly, however, this theory is not the only or even the pre-eminent contemporary metaphor theory, and there are various approaches to metaphor also within the cognitive linguistics paradigm.

³ So for example John Locke and Immanuel Kant or, more recently, Benjamin Lee Whorf. The reader is referred to Jäkel (1997) for a discussion of predecessors of the paradigm and their significance.

You'll get there eventually: (to a student writing a dissertation)
I'm at a crossroads in my life.
He lost direction in his career.

The above expressions would be analysed in the CTM as manifesting a conceptual cross-domain mapping because the domain of long-term purposeful activities such as writing dissertations, living and pursuing careers (target domain) is at least partly conceptualised via the domain of journeys (source domain). This is formulated as LONG-TERM PURPOSEFUL ACTIVITIES ARE JOURNEYS (Lakoff 1993:220) which is a general mapping with logically associated mappings such as, for example, GOALS ARE DESTINATIONS (as seen in the first example). It is a general mapping because mappings such as CAREERS ARE JOURNEYS and LIFE IS A JOURNEY are more specific instances of it and share the associated mappings of the more general mapping, though they may have their own specific associated mappings. Thus there are mappings at different levels of generality, more specific mappings following from more general ones, and there are logically associated mappings.

Mappings are seen not as live processes performed each time a target domain is accessed, but rather as "fixed [...] correspondences across domains" (Lakoff 1993:210). *Fixed* here does not imply that no new mappings can be created (new mappings are created for example through a novel metaphor), but that mappings are present long-term in the brain and are not instantaneously created for and discarded after a particular instance of use. Mappings are asymmetric; they only work in one direction, from source to target domain. Usually mappings are furthermore only partially conventionalised: a mapping will motivate both conventional uses and novel metaphor.

Below, I will consistently use the format TARGET DOMAIN AS SOURCE DOMAIN⁴ since it escapes the unintended suggestion of identification between source and target domains inherent in the format TARGET IS SOURCE.

Metaphor, according to the CTM, is a mapping between two conceptual domains. Hence, mappings are not linguistic rules that produce metaphor; they are rather the metaphors themselves and produce metaphorical concepts (i.e. concepts understood fully or partially in terms of other concepts via mapping).⁵ Metaphorical expressions in language are the natural surface reflex of conceptual metaphors (Lakoff 1993:208). Literal concepts, consequently, are concepts that are not comprehended via metaphor (Lakoff 1993:205) and naturally result in literal expressions.

This definition of metaphor, while arguably based on a central aspect of the established meaning of metaphor (expressing one thing in terms of another), is nevertheless not exactly what metaphor means to the rest of us. The sentence *Interest rates rose by 0.5%*, for example, is metaphorical in CTM-terms since it could be said to manifest the mapping MORE AS UP. Jackendoff and Aaron (1991: 326ff) identify the aspect missing from the CTM-definition of metaphor as a sense of literal incongruity. Feeling with J&A that "the traditional insight about the literal incongruity of metaphors is worth preserving" (1991:326), I shall subsequently use the more neutral term *mapping* rather than *metaphor* when speaking about mappings while

reserving *metaphor* for expressions that display a degree of literal incongruity as well as a mapping.

Why are some concepts understood (conceptualised) in terms of other concepts? The CTM claims that the reason for mappings is that understanding and meaning need to be built up from basic concepts. Basic concepts are directly meaningful because they are grounded in embodiment.⁶ The remaining concepts are "indirectly meaningful; they are understood because of their systematic relationship [mappings] to directly meaningful structures" (Lakoff 1987:268).

It follows that mappings are not arbitrary, but constrained in that source domains of mappings are expected to be basic concepts and target domains non-basic concepts. The CTM is thus able to offer an explanation for why mappings should exist at all, why they are asymmetric and why the direction of mappings is from concrete/physical to abstract/non-physical (though of course this last claim remains to be confirmed in our analysis). The pairings of source and target domains, furthermore, are motivated through "an experiential correlation between [them]" which makes the mapping "natural" (Lakoff 1987:278).

1.2 Introducing data and methodology

The data for the present study consists of English expressions which include the word *heart*. The 60 expressions investigated were arrived at by searching the British National Corpus for sentences containing *heart*, complemented by a few examples taken from the Bank of English.⁸ From these were eliminated duplicate sentences that instantiate the same expression, i.e. for selection purposes, a sentence like *She was keeping her promise to herself, but in her heart of hearts few knew that eventually she would accept him* (BNC GW8 1389) varies insignificantly from *It's obvious that in their heart of hearts the Japanese don't really want calculators* (BNC AR18 1407) because both are instances of the *heart of hearts* expression, hence only the first one was admitted to our set of expressions to be investigated.

These selection criteria produce a clearly and systematically delineated set of data, restricting the number of possible example sentences that vary significantly with respect to the use of *heart*. Within this restricted area, an attempt was made to provide as full a coverage as possible of all examples. This is in contrast to much other work; it appears that most researchers choose their data on thematic grounds, such as "expressions of anger" (Matsuki 1995, similarly Lakoff [with Kovecses] 1987, Yu 1998 and Ibarretxe 1997) or some-data-supporting-my-proposed-mapping type of selection. Such criteria cannot provide sharp boundaries as to what expressions should or could be considered and hence are unable to escape a certain arbitrariness. Furthermore, only a relatively small set of examples is usually chosen for investigation out of the possible number of expressions in the thematic area. In

⁶ The notion of directly meaningful concepts remains rather vague. Elsewhere, Lakoff (1993:245) states loosely that mappings are "grounded in the body and in everyday experience and knowledge" and judging from the kinds of source domains he suggests, this is understood very widely.

⁷ "The British National Corpus (BNC) is a 100 million word collection of samples of written and spoken language from a wide range of sources, designed to represent a wide cross-section of current British English" (BNC 2004, my emphasis).

⁸ A 450 million word corpus of current English maintained by Collins Cobuild at the University of Birmingham (BoE 2001).

⁹ A notable exception is (pre-CTM) Reddy (1993) who lists more than a hundred types of expression which she estimates to account for at least 70 percent of expressions in his focus area.

⁴ An alternative suggested by Lakoff (1993:207).

⁵ Conceptual mappings may be partial: target domains may have several source domains helping to conceptualise and understand different aspects of them (L&J 1980:108) and / or they may be understood partly in their own terms (i.e. without mapping).

treating the data, researchers often only pay attention to a few mappings under investigation, with other metaphorical aspects of examples not explained or investigated. Thus no complete account is given and explanations can remain sketchy and incomplete. The present study attempts to analyse the whole of each chosen expression.

Finally, again in contrast to most other work and in an attempt to maximise objectivity, the methodology of this study insures that our analysis is based on representative actual language usage rather than on self-invented examples or examples without declaration of origin. The origin of each expression in our data is indicated as [BNC X] (X stands for the BNC reference number of the expression) or [BoE] respectively.¹⁰

2 Application

2.1 The meaning of *heart*

As indicated above, the word *heart* is central to the data and consequently its meaning plays a significant role in our analysis. Word meaning is equally a non-trivial issue to the CTM-framework; its claims are intimately bound up with word meaning and indeed the CTM is also a tool of lexical semantics. Thus, for example, CTM-style metaphorical mappings are used as a tool to explain meaning extensions in Lakoff's (1987) study of the meaning of *over*, accounting even for cases like *overriding* and *doing it over again*.

Given the importance of word meaning to our study, it must be the starting point of our application of the CTM. Among meanings of *heart* commonly listed in dictionaries are 'blood-pumping organ of the body', 'centre of emotions', 'spatial centre', 'vital part' and 'abstract heart-shape'. The CTM, being part of the larger cognitive linguistic paradigm, accepts and builds upon the premises of the prototype theory of categorisation (traceable in modern thought to work of Eleanor Rosch). Prototype theory conceives of the meaning of a word as a typical or ideal instance, a so-called prototype or in case of polysynous words, as Lakoff, Taylor, Langacker and others hold, a network of related prototypes with one being the central (prototypical) prototype. Consequently, in our application, we proceed in trying to establish a central meaning of *heart* from which other senses follow or via which other senses are related, if they turn out to be related, which we may assume as a starting point. It follows from the very concept of a central prototype that the central meaning of a lexical category should be the one from which other senses may be most easily derived (in a synchronic sense). A further hint as to which meaning is likely to be central, is provided by the CTM-claim that metaphorical mappings are from physical source domains to abstract target domains. Unless we preclude the possibility that any of the senses of *heart* result from a mapping, a concrete, physical meaning is more likely the central meaning. I propose that the central meaning of *heart* is its physical meaning as blood-pumping organ. This seems to accord well with intuition and might be the first meaning quoted if one asked a member of the public for the meaning of *heart*. Another meaning for *heart* likely to be named would be the understanding of the heart as the centre of emotions, but this seems intuitively a metaphorical meaning despite being conventionalised.

The blood-pumping heart appears to be understood as the centre of the physical body in a comprehensive sense, paraphrased as 'the most vital part of the physical

body' as well as being 'located in the spatial centre of the body' (regardless of whether the heart is scientifically at the centre of the body shape). Some linguistic support for this comes from data sentences 45) to 48), reproduced below for convenience:¹¹

45) ... a radically new and immensely powerful device which remains the heart of every modern radar. [BNC B7M 1733]

46) Indeed, the conditions created by the electoral system were seen as being the heart of Britain's current problems. [BNC 157 1703]

47) The feeling is very much that of a country house hotel in the heart of London, a retreat from the busy streets outside. [BNC, BPE2030]

48) Daimler-Benz, for example, has bought a large site on Potsdamer Platz, in the heart of the new Berlin. [BNC ABE 2574]

In 45) to 48), the sense of *heart* is clearly not that of 'blood-pumping organ', but in 45) and 46) a sense to do with being 'the most vital or important part' and in 47) and 48) a sense to do with being 'located in the spatial centre'. If we treat these example sentences as manifesting cross-domain mappings, we may use, for example, the MACHINE AS PERSON mapping suggested by Lakoff and Turner (as cited in Jackendoff and Aaron, 1991) and apply it to 45) with the heart of a person corresponding to the heart of a machine (in this case a radar), the heart in both cases being the vital part, though radars not actually being bodies, they don't have blood to be pumped around and so naturally that aspect of the meaning of *heart* is not carried over to the target domain (Invariance Principle). A similar case can be made for 46) where we may suggest a mapping PROBLEM AS PERSON which also permits us to make up sentences like *his problems rob him of his sleep*, robbing being primarily a human predicate. 47) and 48) suggest a mapping like PLACE AS PERSON, (such a mapping can be independently detected as the mapping involved in sentences like *London suffers not from too many hospital beds, but from too many people who need to use them*. [BNC FTO 1698], *But Gritsdale remains a sad place*. [BNC ASU 243], *or many modern cities don't seem to have character* (my example). Though a source domain of animals or people could be argued for, it appears to me that these attributes are most typically human, especially 'sadness' and 'having a character'.¹² We further observe that although *heart* in 47) and 48) corresponds to the heart in a person mainly in the sense that both are located in the centre of that which they are a part of, it seems that spatial centre-location is not the only aspect of the heart picked up. Other aspects of the meaning of *heart* can play a role, such as a meaning of *heart* as the place of the depth of character. Potsdamer Platz, we would assume from 48), is somehow typical of Berlin. In 20) the 'spatial centre' sense is completely absent, and only typically is meant (Flammersmith still has a spatial centre, of course). If the meaning of *heart* in 48) is the product of the mapping PLACE AS PERSON, this nuance is nicely

¹¹ Subsequently, rather than reproducing data in the main text, only the number of the expression is given. The reader is referred to the complete list of data at the end.

¹² The notion of animals as including humans is more a scientific and specialist one. Ordinarily, 'animals' are non-human and of a different kind. Mammals would not be a likely source domain, again this is a somewhat abstract biological term, not one from experience.

¹⁰ BNC (British National Corpus) data were obtained on 30 August 2001 via the online search facility

at <http://sra.natcorp.ox.ac.uk/lookup.html>. BoE (Bank of English) data via the Collins Cobuild English Dictionary (1995a) and the Collins Dictionary of Idioms (1995b).

explained, but if *heart* in 48) simply gave access to a lexicon-listed meaning of *heart* (for example, centre with nuance of typicality), the correlation between centre and typicality would be accidental.

Anthropomorphisations are of course possible with a wide range of concepts and with differing degrees of specification. The question may be posed as to whether, given such a productive mapping, we should posit a mental mapping rule such as X AS PERSON, where X is any concept, rather than listing a near infinite number of individual mappings of the sort PLACE AS PERSON. A mapping rule like X AS PERSON or X AS OBJECT (which we will encounter later) would, however, be problematic for the CTM because for the CTM, mappings are a *fixed* set of correspondences between conceptual domains. In order for such correspondences and the resulting conceptualisation of the target domain to exist, all individual mappings would seem to have to be static. Consequently, it appears that the CTM cannot offer a unified way of accounting for the extremely widespread phenomena of anthropomorphisation and viewing something abstract as a physical object, except to say that the phenomena consist of thousands (or perhaps millions) of individual mappings that share the same source domains. I shall continue to use the 'X AS ...' format, provisionally as a shorthand for the fully specified mappings, and return to the issue below.

We have so far, then, discussed some evidence indicating that the heart is understood as the centre of the physical body in a comprehensive sense (including 'most vital part' and 'spatial centre'). This was of course arguing backwards from metaphorical uses of *heart* to literal uses of *heart*. That the real direction is from literal to metaphorical (i.e. to make sure I am not interchanging source and target domains at will) may be demonstrated using a test sentence similar to Jackendoff and Aaron's (1991: 326):

Of course a machine is not a person, but if it were, we might say the most vital part of a machine is the heart of the machine. (X AS PERSON)

? Of course a person is not a machine, but if they were, we might say the heart of a person is the most vital part of a person. (PERSON AS X)

The second sentence appears very odd for the reason that the heart of a person IS indeed the most vital part of a person (regardless of any mapping) whereas in the first sentence, machines do not literally have blood-pumping organs, but only via mapping. This indicates not only that the mapping must be in the direction claimed, but also that the heart being the most vital part of the body is not a metaphor itself, but rather a literal belief held, or one may say, part of the English concept of *heart*. The direction (X AS PERSON) is also given by the constraints on mapping direction: a machine may just about pass as a target domain; although physical and concrete, it may be argued to be less basic than experience of the physical body itself. We can propose the mappings CENTRE AS HEART and VITAL PART AS HEART as more specific instances (associated mappings) of X AS PERSON. As will be argued below, however, these specific mappings have little justification if occurring independently of X AS PERSON.

In expressions 1), 2) and 15), it is clear that it is not the blood-pumping organ that is broken, torn or stolen in any literal sense. Matsuki, in her analysis of anger metaphors in Japanese (1995) is faced with a similar situation in her discussion of the 'hara' concept which is both a physical body-part (belly) and, as she explains,

"metaphorically contains the emotions in Japanese" (142).¹³ This leads to expressions like 'to split hara, i.e., to open one's heart' and 'hara is black, i.e., not fair/wicked' (143). To explain those uses, Matsuki suggests a mapping 'hara is the container of real intention and emotion' which also manifests itself as 'hara is real intention and emotion' via the metonymy that the container stands for the content (143).

Given that 1), 2), 15) appear to show senses that may be generalised with the paraphrase 'centre of one's emotions or feeling', we may, à la Matsuki, suggest the mapping CENTRE OF EMOTIONS AS HEART. The heart would clearly have to be the source domain in the above mapping: it is unlikely that the heart (a concrete domain) would be partly conceptualised in terms of the centre of emotion (highly abstract, non-physical domain) not only because it would go against the CTM's mapping-direction constraint, but also because expressions of emotion have already been shown to be a frequent target domain (Lakoff [partly with Kovecses] 1987, Yu 1998, etc.) and it helps, so it appears, to use language for more concrete physical domains to talk about emotions. Furthermore, that the 'centre of emotions' meaning of *heart* is actually a metaphorical meaning of the blood-pumping organ, rather than simply a homophonous word or one of several polysynous literal meanings of *heart* is suggested by the otherwise irrational attitudes that people have towards the blood-pumping organ. This is exemplified by the romantic comedy "Return to Me" (an MGM film released in 2000) wherein a happily married couple have a car accident in which she dies and her heart is given to another woman, waiting for a donor heart. The husband later falls deeply in love with that woman and is shocked when she later finds out about the heart. The film suggests that the love relationship was helped if not facilitated by the fact that the two women shared one heart and it plays on viewers' associations of the blood-pumping organ with the centre of emotions throughout.

Suggesting the mapping CENTRE OF EMOTIONS AS HEART to take care of 'centre of emotions'-type meanings of heart, however, seems insufficient for two reasons:

First, our mapping sounds very much like a definition, a statement of attributing a certain meaning to *heart* as could be done, for example with the meaning of *foot* (another body part) as the lowest part of a mountain where it flattens out: LOWEST PART OF A MOUNTAIN AS FOOT or our mappings from above CENTRE AS HEART and VITAL PART AS HEART. Though such mappings are possible and true in that they capture linguistic phenomena, they are not particularly interesting and provide little justification for being a mapping rather than simply an (arbitrary) lexicon-listed meaning, because the strength of and justification for CTM-claims in this area lie precisely in CTM's ability to explain such meanings or uses of vocabulary. It therefore seems that these mappings need supplementing. If we conceive of mappings as being hierarchically structured, as the CTM suggests, we may posit more general mappings from which the lower-level mappings either fall out automatically or follow naturally in a motivated way: if we posit MOUNTAIN AS PERSON, we don't need to posit LOWEST PART OF A MOUNTAIN AS FOOT and can similarly explain sentences like *the new tunnel goes right through the heart of the mountain*. If specific mappings alone are posited or if there is no evidence for the

¹³ One of the senses listed in a (presumably bilingual) dictionary quoted by Matsuki is indeed 'heart, real intention'.

¹⁴ A similar incident is reported by Yu (2003: 14) with regard to the gall bladder which in Chinese stands for courage (GALLBLADDER IS CONTAINER OF COURAGE): a Chinese person had to have his gallbladder surgically removed and was subsequently rather shaken by the fact, although, medically speaking, there was no reason for concern.

presence of supposed higher mappings that could justify the lower mappings, there is very thin evidence indeed that such a specific-level mapping exists.¹⁵ Mappings should therefore be shown to be part of a hierarchy so that ultimately we have no longer single mappings in empty space, but a network of hierarchies (similar to the Event Structure Metaphor as presented for example in Lakoff 1993: 220ff). This would not only result in more wide-ranging and convincing explanations, but would similarly constrain mappings by forcing those who suggest them to locate their suggested mappings with reference to other already established mappings or possible more general mappings and their validity.

Second, CENTRE OF EMOTIONS AS HEART is insufficient in itself; it does not explain how emotions can have a centre. An additional mapping or explanation is minimally necessary.

Addressing the two above objections, I suggest that the meaning of *heart* in 1), 2), 15) and similar expressions actually follows from the more general mapping EMOTIONAL SELF AS PHYSICAL SELF.

From this we may not only derive our earlier CENTRE OF EMOTIONS AS HEART mapping (if the physical self has a centre, then the emotional self has one, too, and if the centre and most vital part of the body is the heart, as argued above, then the heart is naturally the centre and most vital part of the emotional self as well) but also a range of more differentiated meanings. First, however, we should try to see whether the EMOTIONAL SELF AS PHYSICAL SELF mapping has support other than explaining CENTRE OF EMOTIONS AS HEART: it can be pointed out that *you hurt me* or *I got a knock from him* can refer to bodily or emotional injury suffered, the latter making use of the proposed mapping. Furthermore, physically, "the centre defines the identity of the individual in a way that the peripheral parts do not. [...] A person whose hair is cut off or who loses a finger is the same person" (Lakoff 1987:274). Therefore, emotionally, the innermost part or the inner self are seen as the emotional identity and character. The heart, being not only in the general centre of the body but at its very central point, is consequently the centre or essence of identity and character (evidenced in 20), 10), 11), 41) and 31)). We can therefore suggest the mapping ESSENCE OF IDENTITY AND CHARACTER AS HEART as an associated mapping of EMOTIONAL SELF AS PHYSICAL SELF. The physical heart, located inside the body, cannot be seen from the outside. Similarly, the emotional heart and what it is made of cannot be seen by outsiders, hence it is the location of private feelings, intentions, secrets and precious thoughts as in 50). One's heart of hearts (51) is then naturally the location of one's very, very innermost and private feelings. These facts provide good justification for the EMOTIONAL SELF AS PHYSICAL SELF mapping which I have argued is responsible for the meanings of *heart* found in example 1), 2) and 15) above.

One further meaning of *heart*, though not central to our concerns, is worth a brief comment: the abstract heart-shape (as in 52), which is meant as a representation of the blood-pumping organ, not only of its 'centre of emotions' -type uses or only as a

¹⁵ Lakoff and Johnson specifically insist on the presence of mappings in cases where higher level mappings are not actively supported, as evidence they suggest that novel metaphor can make use of the unused part of the higher level mapping and it must hence exist. Nevertheless, they concede "if any metaphorical expressions deserve to be called "dead," it is these" (1980:54,55)

¹⁶ The mapping KNOWING AS SEENING is made use of here. The mapping is argued for by Sweeter 1990:3-6 and evident from expressions like *Ah, I see how it works, now*.

symbol of love.¹⁷ This can be seen, for example, from the use of the heart symbol in logos of heart-disease groups or blood donation organisations. By metonymy we can refer to a picture or a two- or three-dimensional representation of something by the same name we use to refer to the real object (so we can say *this is uncle Alfred* pointing to a picture of him). I propose the same mechanism explains the 'heart-shape' meaning of *heart* precisely because the abstract shape is a representation of the blood-pumping organ, although the two look very different.

In this section I have shown that the most common meanings of *heart* as found, for example, in 1), 2), 14), 45) to 48) follow from the central meaning of *heart* as the 'blood-pumping organ' with help of the mappings X AS PERSON and EMOTIONAL SELF AS PHYSICAL SELF (and their more specific instances).

2.2 Heart-expressions

Having so far clarified the meaning of *heart* itself and having ascertained some important mappings present in heart-language, we may now turn to an analysis of the remaining data to establish the mappings (and other devices where appropriate) which motivate their wording and meaning. The data is divided into four thematic groups. A discussion of the analysis is given for all expressions in the first grouping and for further expressions of particular interest in the remaining groupings.

Group 1

1) to 14) may be grouped together as they all speak about physical manipulation of the heart and objects coming or being in contact with it.

The mapping EMOTIONAL SELF AS PHYSICAL SELF together with the beliefs held about the heart in relation to the body (vital part, centre, etc.) enables English speakers to express emotional injury in terms of physical injury in general (*you hurt me*) and injury to the heart in particular, if the injury is perceived to be very serious or affecting some vital, central aspect of one's emotional self.¹⁸ Lakoff states that "injuries to the central parts [of the body] are more serious (i.e. not mendable and often life threatening) than injuries to the peripheral parts" (274). Perhaps that is why being hurt emotionally (without specification where) is far less serious than having one's heart pierced. Such injury to the heart is found in 1) to 6). It is possible to portray either the act of injuring in process or the finished result, as can be seen in 1) vs. 3). In 1), 6) and other cases where the agent is not a person (but an act, situation, sight or words spoken, for example) use of either the anthropomorphisation mapping or a mapping X AS PHYSICAL OBJECT would have to be made. Most subordinate-level terms for injury seem fairly conventional, with *break* and *rear* perhaps the most conventional. 4) is special in that it does not mention the act, but only the result which could be due to no direct outside act such as when one suffers emotionally without this necessarily being the fault of someone else, though someone else might be the cause. In 5) the inference from the physical domain that if something pierces deep it causes more pain is equally present in the abstract domain.

7) and 8) imply that an external object made direct contact with the heart. Making physical contact involves the touching object having a certain effect and influence on the touched object, so that we may suggest a mapping INFLUENCE AS

¹⁷ So also Chambers Dictionary: "a sign representing a heart or often love" (1997:291). Collins Cobuild, inaccurately in our view, only explains that the heart-shape is "used as a symbol of love" (1995a:780).

¹⁸ So also Lakoff when he suggests the mapping SOCIAL/PSYCHOLOGICAL HARM AS PHYSICAL HARM (1987:448)

PHYSICAL CONTACT (also manifested in utterances like 'Hands off our rights, reoriented the unions [BNC CRB 1734]. In other words they are continuing to operate in their separate ways, largely untouched one by the other [BNC B2T 876]).¹⁹ If something influences directly the centre of emotions, it clearly has a rather profound effect. The kind of motion further suggests a rather sudden strong influence, not necessarily a long-term one, though the latter might follow from the former: 9) to 12) are similarly explained; something located close to the heart presumably has contact with it. In contrast to 7) and 8), however, specifically a longer-term influence is envisaged. In the above data and particularly in some of the following data, it sometimes appears that the heart does not particularly stand for the centre of emotions only, but for the whole of the emotional self, or one's emotions. This is a case of metonymy which allows one to speak of something by referring only to a (salient) part of it, as in 'Admission is £5 per head' (HEAD STANDS FOR PERSON). In our case it would be the metonymy CENTRE OF EMOTIONS STANDS FOR EMOTIONS.

In 13) and 14) the heart as container is not a metaphorical understanding, rather than being confronted with a mapping, we are confronted with an aspect of the ontology of the object: the heart contains different substances in its structure, such as muscle and flesh as well as containing blood and presumably air in its hollow spaces. On the mapping EMOTIONAL SELF AS PHYSICAL SELF, and the more specific CENTRE OF EMOTIONS AS HEART, the bodily substances contained within the outer shape of the heart, constituting it, naturally correspond to the feelings, inclinations and other contents that make up the emotional heart. Opening something entails gaining access to it and if the heart is opened to someone, one lets that person partake in one's emotional self, and even the centre of it as in 13). Pouring out what is inside the heart as in 14) makes the whole content visible (and, via the mapping KNOWING AS SEEING, known) to another person. That this is done verbally, rather than through a showing of emotions (though that may be part of it, too) must be put down to the idiomatcity of the expression, it does not follow from the mappings.

Group 2

Group 2 contains examples of expressions dealing with the location of the heart relative to other entities and relations between the heart and those entities. These concrete relations between physical entities are used to express a range of abstract relations between abstract entities. 15) to 25) are discussed below as examples of group 2. 20) to 25) raise the issue of narrowly idiomatic expressions and how they can best be treated in the CTM-framework.

If one feels that someone (or something) else is in control of the centre of one's emotions, this may be expressed as the other person possessing the heart (CONTROL AS POSSESSION²⁰): the other person may *keep the heart*, *give it back*, or *throw it away* (though such expressions may be less conventional). This mapping and the familiar CENTRE OF EMOTIONS AS HEART, may be united into the more specific mapping CONTROL OVER CENTRE OF EMOTION AS POSSESSION OF HEART. The heart may be given by the owner (17), taken without (16) or against (15) the owner's will, corresponding to how one feels about the way control over one's centre of emotions was transferred. In 18), unlike 19), it is not specified who is now in control, but someone is. Although usually these expressions are used when talking

about love (which of course is a very salient emotion) a sense of the possessor being in control over one's entire emotions (not only love) is not absent. 16) involves, in the second part of the sentence, the X AS PERSON mapping as *sucker* is usually a derogatory term for a person. 20) also involves the removal of the heart, but as already observed, the mapping which produces the correct semantics is ESSENCE OF IDENTITY AND CHARACTER AS HEART (as well as the X AS PERSON). Though the CENTRE OF EMOTIONS-mapping could be chosen, I propose that the correct mapping is selected on contextual grounds, as the correct meaning of a word is selected with help of the context.

The expressions 21) to 23) are at least partly idiomatic; one may suppose that they result from the established metonymy (PERCEIVED) PHYSICAL EFFECT OF EMOTION STANDS FOR THE EMOTION (Lakoff 1987:382) though in these cases the physical effect is evidently overstated. If one is suddenly frightened or alarmed, the upper part of the body or at least the inner organs of the chest area are felt to move upward with the typical sudden intake of air and in strong cases one may feel one's heart beat in the throat. The heart as a salient organ in the chest area and cause of heartbeat would somewhat naturally be selected as the subject of dislocation. Diametrically opposite to a general upward dislocation is the general downward dislocation that is felt when discouraged or dismayed (22, 23), one feels pulled down: unlike the case of sudden fright when the body is put into a state of high alertness, when discouraged, the body is put into a state of laxness. Here the choice of the heart as the dislocated part is not entirely clear, though similar semantics follow from using other parts like shoulders: *He sat on the bed, shoulders down, face averted, like a refugee* [BNC FP7 1989].

The high uncertainty here is indicative of the degree of idiomatcity. This is also felt in 24) and 25) actually in contradiction semantically to 18). Although there is a sense in which much heart-language may be argued to be idiomatic, I take idiomatcity narrowly as an attribute of expressions that sprang from mappings that are no longer evident from elsewhere in the language.²¹ Additional indications are severe restrictions to a particular wording (*He lost the heart* cannot even point to the sense in *Don't lose heart!*), relatively easy translations with little loss (*Don't be discouraged* is equivalent) and semantic contradictions as the above. Particularly this last point suggests to me that synchronically there is no mapping present in narrowly idiomatic expressions. As such, narrowly idiomatic expressions fall outside the focus of this application. The CTM, however, nowhere acknowledging the possibility of mappings falling into disuse, would consider mappings detectable in idioms, as elsewhere, as mappings present in conceptualisation.

Group 3

Expressions in group 3 deal with attributes of the physical heart and express characteristics of the emotional self. The examples discussed below are interesting in that they show how inference patterns from the source domain are valid in the target domain.

In 31) and 32) we encounter metaphorical mappings that go beyond heart-language: the talk of temperature in the emotional domain. I suggest this follows from

¹⁹ Similarly, Lakoff & Johnson argue for a mapping "EMOTIONAL EFFECT IS PHYSICAL CONTACT" (1980:50) on grounds of other data.

²⁰ Further justification for this mapping below

²¹ The expressions under discussion could be related to a focus on the emotion of courage; the heart consequently viewed as standing primarily for the centre of courage and by metonymy SALIENT PART STANDS FOR WHOLE the heart stands for courage per se. *Brave heart* could receive some explanation in this way, though I would hold that this focus is fossilised and no longer active in productive (heart-) language.

the mapping ABSTRACT SENSATION AS PHYSICAL SENSATION, a general mapping of which KNOWING AS SEEING (encountered above) as well as an array of other more specific mappings like EMOTIONAL SENSATION AS SENSATION THROUGH TOUCH and Lakoff's "INTIMACY IS PHYSICAL CLOSENESS" (1987:448) are part. Accordingly, English speakers *feel heat* and also *feel sadness*. Specifically in this case, temperature sensation (cold, cool, warm, hot) is used to describe emotion and how it is perceived (PERCEPTION OF EMOTION AS PERCEPTION OF TEMPERATURE suggests itself): *a warm welcome, warning to one's work, someone warning up, having warm feelings towards someone, speaking with warmth*, etc. all speak about sympathetic emotional involvement, whereas *warm* is substituted for *cool* or *cold*. Little or no emotional involvement with strongly negative connotations is communicated. As far as hot can be used in these examples, a sense of excessive and almost violent emotional involvement results which accords well with Lakoff and Kövecses' mapping ANGER AS HEAT (Lakoff 1987:383). Warmth seems to be the most positive of the emotional temperatures; likely because we feel this temperature to be most comfortable as physical sensations; hot, cold and even cool are temperatures humans don't feel comfortable with for prolonged periods of time. It is now no surprise that one may also speak of the emotional temperature of the heart (as the centre of emotions) in ways consistent with the above examples of emotional temperature as indeed we find in 31) and 32). The resulting semantics follow predictably.

Other aspects of the physical sense of touch that get mapped onto the emotional domain via EMOTIONAL SENSATION AS SENSATION THROUGH TOUCH are *soft / tender / hard / rough / edgy / smooth / slippery / slippy* and similar physical characteristics that can be readily perceived from touching. The resulting target domain meanings are fairly closely linked to the meanings in the source domain: if one touches something soft and tender, it does not hurt, but the object might get hurt rather easily (a softie might cry often, if one's heart is too soft and tender one might suffer too much emotionally). Something hard cannot be hurt but neither is it influenced much by touching; something rough might hurt if touched, etc., etc. When applied to heart language, physical touch language appears very productive; beside conventionalised expressions like 33) and 34), semi-conventional or readily understood novel expressions may be constructed with nearly any of the basic-level adjectives for physical touch perception. This also works on the more general mapping level EMOTIONAL SELF AS PHYSICAL SELF: *he's rough, I'm smooth*, etc. 35) results from the same mechanism: a stone is a prototypical example of something hard and also cool.

Group 4

Group 4 consists of the remaining expressions of our data which are thematically varied. Expressions 53) to 60) have been selected for representative discussion.

If something is according to one's centre of emotions as in 53), it is according to the desires that issue from there (rather than from rational or utilitarian thoughts), as also in 54). It is possible that a similar conception is behind 55), i.e. a breakfast that is according to one's desires, but it appears more likely that this use is a fossil from mappings once active.

60) assures one that something is done (a family loved, for example) with all emotions, and there are no contrary emotions. The sense of 'very much', 'without reservations' follows from that. If something is from the heart (56), it is authentic in that what it communicates truly originates from (or corresponds to something at) the

centre of one's emotions rather than having no true emotional basis, or being merely superficial. The latter is excluded by the place of origin being the heart and the heart being in central location inside the body, which is here seen as the emotional self. We have seen above how centre location has associations with typically and identity (see also Lakoff 1987: 274-5). A mapping such as SUPERFICIAL AS ON SURFACE, PROFOUND AS DEEP hence only states the obvious. An even deeper (the bottom of something being its deepest place) and hence more profoundly felt communication is assured in 57). The *come from* suggests some motion, perhaps of a feeling or thought travelling from its place of origin to expression. As such it could be viewed as an instance of the X AS OBJECT mapping and the communication process as a journey along a path with start and destination (COMMUNICATION PROCESS AS AN OBJECT'S JOURNEY ALONG A PATH²²). If something comes straight from the heart (58), the path is direct and no intermediate stops took place. Hence it has not undergone any change and still resembles the emotion as it was in the heart. A heart-to-heart talk (59) is similarly authentic communication, yet what is communicated not only originates in the heart, but since the hearts themselves are perceived to speak to each other, there is no path and hence no intervention from any other faculties. The communication remains fully representative of the emotions in the heart. We are all familiar with the fact that we cannot usually express our emotions as they are felt within, at least not in their entirety. Rather we feel constrained in various ways (by social conventions, hearer's reaction, etc.). In a heart-to-heart talk, then, two parties express their emotions on a certain topic without consideration of constraints which results in an extremely frank conversation.

3 Results

Above I have, with help of a CTM-style analysis, extracted a number of mappings underlying English, particularly English heart-language.

First, we have found that the metaphorical meanings of *heart* can be shown to follow naturally and differentially from the physical (blood-pumping organ) meaning and merely two general mappings (X AS PERSON and EMOTIONAL SELF AS PHYSICAL SELF). If any of the meanings resulting from those mappings are lexicon-listed (I shall argue below that this is likely the case), the 'blood pumping organ'-sense of *heart* naturally takes the role of a central prototype, to which the other meanings are related via mappings. We found that the proposed mappings are able to provide a clear explanation for certain meaning nuances (*heart* as central location with nuances of typicality) that would otherwise have to be regarded as accidental.

Second, the more specific mappings responsible for individual senses have been identified as the following:

MACHINE AS PERSON, PROBLEM AS PERSON, PLACE AS PERSON
CENTRE AS HEART, VITAL PART AS HEART
CENTRE OF EMOTIONS AS HEART
ESSENCE OF IDENTITY AND CHARACTER AS HEART

We have seen that these follow from the more general mappings and the literal beliefs about the source domain, specifically the heart (that it is the most vital part, at the centre of the body, etc.) and the body (central parts constitute identity, injury to central parts is serious, etc.).

²² This mapping is formulated on the basis of an investigation into the metaphors of communication in Reddy 1993. Though this particular wording is not applied there, it fits in with his proposed conduit metaphor.

Third, in analysing our English heart-language data, I also showed how the whole of the expressions analysed follow from the above mappings in interaction with other mappings not specifically to do with heart-language. These are:

X AS PHYSICAL OBJECT
 INFLUENCE AS PHYSICAL CONTACT
 CONTROL AS POSSESSION (CONTROL OVER CENTRE OF EMOTION AS POSSESSION OF HEART)
 ABSTRACT SENSATION AS PHYSICAL SENSATION
 KNOWING AS SEEING
 EMOTIONAL SENSATION AS SENSATION THROUGH TOUCH
 PERCEPTION OF EMOTION AS PERCEPTION OF TEMPERATURE.
 Furthermore, the following metonymies have been ascertained:
 CENTRE OF EMOTIONS STANDS FOR EMOTIONAL SELF.
 (PERCEIVED) PHYSICAL EFFECT OF EMOTION STANDS FOR THE EMOTION

It has also become apparent, however, that mappings are not always completely sufficient to account for the meaning and form of expressions. These cases have been identified as narrowly idiomatic. I suggested that these cases are fossils of mappings that have fallen into disuse and are no longer evident in other parts of the language. The ascertained mappings nevertheless go a remarkably long way towards explaining wording and meaning of heart-language in an exact manner.

4 Theoretical considerations

While the need for hierarchies, CTM's definition of metaphor and the issue of narrow idiomatically have been discussed above, more fundamental theoretical questions have not been addressed directly so far. The following comments aim to point out particular claims and premises of the CTM which, on the basis of the present study, appear vulnerable to attack and in some instances to suggest possible alternatives without reaching solidly argued conclusions. The discussion is also intended to serve the purpose of placing the findings of the above analysis into a context larger than that of the CTM.

4.1 Generation or motivation?

It would seem that having established mappings responsible for English heart-language expressions, the mental lexical entry for *heart*, for example, now only needs to consist of the physical sense of 'blood-pumping organ', the other senses being generated via mappings. The expressions so generated, however, would of course be both the conventional AND any number of novel expressions to do with *heart*. Since speakers of a language clearly do have access to information on conventionality, however, this information has to be registered somehow. According to the CTM, conventionality is captured by listing individual lexical items, phrases or idioms in the lexicon (L&J 1980:52, 55). Consequently, in the case of conventionalised expressions, mappings do not generate senses but rather substantiate and explain polysemy (or in fact claim polysemy where otherwise homonymy would need to be postulated). Novel meanings, on the other hand, are generated by mappings.

Information on conventionality, however, does not necessarily have to be stored as polysemous senses in the lexicon, in fact such an account of conventionality appears overly simplistic: First, it is generally acknowledged that conventionality is a matter of degree (so also for example Sadock 1993:54, Keysar et al. 2000:586) and so a binary listed/not listed distinction appears less than fully appropriate. Second, it

would be very difficult if not impossible to list all conventional mapping-created meanings and ranges of application of all words and phrases in the lexicon. For example, we would need to add to the entries for *break*, *pierce*, *tear*, etc. something like 'also of non-physical things to mean an action that affects the object in a similar way as a physical object is affected by the physical action, something that is not only very hard to do but also imprecise, extremely clumsy and unnecessary, given that, at least in our analysis, those meanings follow nicely and differentially from the mappings. If we assume that degrees of conventionality are taken note of elsewhere (a part of memory keeping track of frequencies of collocations in language input could be one direction of future investigation into this mechanism), we can let mappings generate meanings of words and expressions. Thus we potentially arrive at a far more efficient setup which, on the premise that the brain organises information in the most efficient way, appears more plausible. Naturally, in the case of often used mappings or parts of mappings it will be more efficient for the brain to list the mapping-created meaning with words or phrases instead of having to deduce it in each instance of use. The 'centre' sense and the 'centre of emotions' sense of *heart*, for example, are used so frequently that they are likely lexicon-listed meanings of *heart*. When mappings change, the lexicon listings for very conventional expressions might stay the same. I suggest that this is what happened in cases of narrowly idiomatic expressions like the ones we saw above. Generally idiomatic phrases or expressions, as opposed to narrowly idiomatic ones, may be characterised as phrases that are conventional and fixed in the lexicon, yet correspond to a productive mapping.

4.2 Psychological reality

The CTM's claim that mappings (or, for present purposes, metaphor) involve cognitive faculties other than strictly linguistic ones, is not particularly controversial. As Sadock points out, phenomena very similar to metaphorical language occur outside language: for example when "a lion on a warrior's shield suggests that its bearer is brave" (1993:42). Theories that treat metaphor as a pragmatic phenomenon (as for example Relevance Theory, Sperber and Wilson 1995) inherently propose that metaphor involves cognitive faculties other than strictly linguistic ones. That CTM-style mappings are cognitive appears therefore not without wider support. According to the CTM, language users do not necessarily perceive mappings because "the system of conventional conceptual metaphor is mostly unconscious, automatic, and is used constantly, with no noticeable effort, just like our linguistic system and the rest of our conceptual system" (Yu 1998: 33). Mappings hence cannot be verified by intuition but only by inference.

Psycholinguistic experiments on the detection of mappings have been somewhat inconclusive; some research (Keysar et al. 2000) has shown that mappings are not accessed in the comprehension of the conventional language samples used in the experiment, but other research has shown that violating orientational mappings slows reading which suggests a connection to mappings in comprehension under certain circumstances (Langston 2002). It appears fairly clear, however, that mappings are accessed for novel metaphor comprehension (Keysar et al. 2000). Our investigation of heart-language above has shown that a wide range of possible expressions is found between conventionality and novelty and the transition to novel expressions is nearly seamless. This suggests that mappings are needed and accessed when talking 'heart-language' in its different shades of conventionality and that the conventional/novel dichotomy insisted upon by some may only strictly apply to the extremes of a continuum. I have argued that at the very conventional end of the spectrum (narrow

Idiomatcity) mappings are unlikely to be present, but in the remaining expressions analysed, the interplay between the senses and nuances of *heart* and the mappings' ability to explain them (as pointed out, for instance in the discussion of example 48) suggest the presence of the mappings discovered, as does the already mentioned difficulty of capturing the precise figurative meaning of certain words involved which follows more naturally via mappings. If it can be established that the same logical inference patterns (reasoning) apply in the two domains of a mapping, the presence of a psychologically real mapping is yet more likely. We found such inference patterns for example in the analysis of 5), the group 2 expressions to do with a transfer of the heart and many expressions in group 3. Finally, as mentioned earlier, if a mapping is very productive (i.e. is evidenced in a large number of expressions) it naturally appears far more justified than if it can only be shown to produce one or two expressions found in language.

Though giving general arguments in support of the psychological reality of mappings, the CTM, at least in practice, assumes a mapping to be present whenever a mapping can be formulated that correctly motivates a given language expression or group of expressions. This seems inadequate in consideration of the weight attached to proposed mappings (namely psychological reality and cognitive processes, not to speak of conceptual understanding). Not all expressions which could be construed to result from a mapping, it would appear, do establish the presence of a plausibly psychologically real mapping, less yet the presence of the particular mapping proposed (as opposed to the possibility of there being a different source domain or a shared source that is common to both domains²³). Some support for the psychological reality of proposed mapping along the lines of the above arguments therefore has to be provided, and some argumentation as to why a particular domain should indeed be the source domain of an expression should be given wherever reasonable. This might prevent such peculiar claims as that the expression *What!* (said when things start to get out of hand) results from a mapping "EXTERNAL EVENTS ARE LARGE MOVING OBJECTS", the moving objects in this special case being horses (Lakoff, 1993:222).

4.3 Fixed conceptual mappings or dynamic linguistic rules?

The CTM holds that mappings are fixed correspondences between conceptual domains; aspects or the whole of the target domain are conceptualised via these very mappings. Although the theory proposes some well-argued internal reasons (the building up of understanding from concrete to abstract seems logical) and points for support to empirical observations which are borne out in the above analysis (inference patterns along mappings, mappings and their manifestations in language mostly following the concrete/physical to abstract/non-physical direction), the question after the legitimacy of the claim that mappings are necessary to conceptualise the target domain, at least partly, is very contentious. It would require a whole separate investigation to be able to suggest what exactly the contribution of metaphor (and CTM-mappings in particular) to understanding consists of, if anything. It furthermore appears, as noted also by Ortony (1993:5), that the question of whether and to what degree metaphor creates new understanding is ultimately only partly an empirical question. Nevertheless, the following three considerations will allow some preliminary conclusions to be drawn:

First, though the mapping direction is remarkably consistent, it often appears only to be sustained because of the vague description of what can serve as a concrete source-domain (concepts grounded in embodiedness). Even then it is not sustainable in 100% of cases (X AS PERSON applied to *hand* as in *when you give to the needy, do not let your left hand know what your right hand is doing* [Matt. 6:3, NIV] for example, is an exception). Furthermore one can think of cases where a target domain becomes a source domain for a further mapping: ARGUMENT AS WAR (Lakoff and Johnson 1980:4) is a mapping but also WAR AS PERSON as in *Eugene S. Jones' A Face of War is a feature-length documentary shot in 1966, but not released at the cinema until 1968*[BNC:EE1 114].

Second, given the emphasis, in practice, on the *partial* conceptualisation of the target domain in terms of source domain, the claims that only source domains are directly understood and target domains are understood via source domains (the building up of understanding) remains largely unsubstantiated. We may add that a complete conceptualisation via mapping would be hard to claim for the data in our analysis and therefore it appears that complete conceptualisation via mapping is extremely rare if it does occur at all. Thus, even clearly abstract, not directly understood concepts (according to the CTM) like CENTRE OF EMOTIONS are actually partly (possibly fully) understood in their own terms.

Third, even if the building-up-of-understanding claim is dropped, logical inference patterns can be explained if we allow the source domain to play any understanding-enhancing role.

In view of these considerations, the CTM-position concerning grounding and building up of understanding appears difficult to sustain. If we allow for the source domain to have some sort of understanding-enhancing influence on the target domain (the details of which would need to be worked out in greater detail), we would be treading on more defensible ground. Additionally, mapping rules, such as we found useful above (X AS PERSON, etc.), could be posited because mappings are no longer needed for the very conceptualisation of the target domain.

Finally, the usefulness of hierarchies, (general and specific level mappings) and interaction between mappings in accounting for the data under investigation above, lets it appear plausible that mappings are not isolated and spontaneous but form a permanent system of rules (likely including mapping rules) held in long-term memory. That mappings often produce, motivate and interact with conventionalised meanings and expressions further supports a fixed rather than completely dynamic nature of mappings: a process in which even a conventionalised abstract meaning, for example, would be available only after literal concepts in the context are compared and a suitable isolated mapping established (which would be discarded again shortly after) seems not only complicated and inefficient but the observed consistency of the result would be somewhat surprising.

²³ A possibility pointed out by Jackendoff and Aaron (1991:328).

The data**Group 1**

- 1) But to be honest it has broken my heart to leave Bangor. [BNC K2U 719]
 - 2) Why do I fear my heart by recalling our words then? [BNC HGS 1603]
 - 3) He smiled at her, his heart breaking. [BNC CR6 22]
 - 4) Bearing in mind, the style of communication you adopt with your youngster could save you a lot of aggravation and heartache. [BNC B10 1772]
 - 5) My child you used and pierced my heart a hundred times and deep. [BNC CEM 1846]
 - 6) The new awareness of her love for him stabbed again at her heart. [BNC H9H 2358]
 - 7) Eudocio Ravines, the former Peruvian Communist, describes how in 1917 'all the events in Russia went straight to my heart' [BNC GIR 311]
 - 8) Luzenzo's chest rose and fell as if he was identifying with the loss of the Corosini family, and that touched her heart. [BNC H94 3456]
 - 9) She accepted his warning without comment, but she took it to heart. [BNC EVC2394]
 - 10) They understand children and they have the children's best interests at heart [BNC CH4 1023]
 - 11) It is impossible to be truly non-violent without being utterly fearless, and for that reason non-violence and cowardice go ill together because the coward is fearful at heart. [BNC C9B 440]
 - 12) The place was close to his heart. [BNC CH2 100171]
 - 13) Marje wept as she opened her heart during interviews for the biography. [BNC CBC 4396]
 - 14) I'd phone him up and pour out my heart in a way I couldn't to anyone else. [BoE]
- Group 2**
- 15) ... the man who went on to become world-famous singing star Frankie Vaughan says she stole his heart the instant he saw her. [BNC K52 7253]
 - 16) She took my heart and squashed the sucker flat. [BNC AOL 2144]
 - 17) ... gave his heart to the building of Westminster Abbey... [BNC BMV 922]
 - 18) In this most strange place and in this short moment Nicholas lost his heart and knew for certain that at last, at very last, without doubt or question, he had fallen in love. [BNC ECU 2606]
 - 19) Four years after that Hunt Ball, where Nicandra lost her heart for ever, Aunt Tossie broke into her moneybox to endow the marriage of Nicandra Constance with Andrew Julian. [BNC H71 1815]
 - 20) This new wave of anonymous buildings, designed to slip as quickly as possible through local authority planning procedures, has ripped the heart out of Hammersmith. [BNC A24 33]
 - 21) My heart was in my mouth when I walked into her office. [BoE]
 - 22) My heart sank when I saw the hill. [BNC C9R 400]
 - 23) When she stepped into the helicopter in front of me, I had no alternative but to follow her with my heart in my boots. [BNC FPN 371]
 - 24) Take heart! [BNC C9R 2591]
 - 25) James and his besiegers lost heart and abandoned the siege. [BNC A07 537]
 - 26) The blonde teenager, who had set her heart on becoming a hairdresser, was also upset at failing to find a job. [BNC CBF 11893]
 - 27) I tried to learn some lines but my heart wasn't really in it. [BoE]

- 28) Neil's heart is in the right place. [BNC AK2 1144]
- 29) She could still hear the sound of Rose Trivet crying her heart out in another part of the house. [BNC CCD 350]
- 30) You will only be able to infer their Celtic roots -- they're not a band that wear their heart on their sleeve. [BNC HWX 2157]

Group 3

- 31) But Maggie had a warm heart and she looked for the best in people. [BNC BP1 205]
- 32) Gabriel and his cold-hearted darling, Bathsheba Everdene, stared at each other. [BNC FRE 329]
- 33) He probably thought I had a soft heart. [BNC HLU0 2791]
- 34) A good organiser is totally objective, even downright hard-hearted in choosing venue, style, speakers and programme. [BNC ADK 542]
- 35) I am convinced that you have a heart of stone. [BNC J103392]
- 36) The men were going to see some action, or 'have fun' as they put it, and that was quite enough to render them light-hearted and care-free. [BNC AR8 1100]
- 37) She walked away, her heart heavy. [BNC JYB 3655]
- 38) At once Bathsheba's heart felt lighter. [BNC FRE 1805]
- 39) Normally he was a model husband and father, kind-hearted and always laughing. [BNC ADM 321]
- 40) I did not have the heart to tell her that Ken's beloved instrument was now a thousand tiny splinters after Trev Proby sat on it. [BNC FR9 781]
- 41) That heart is Welsh, and it is his Welshness which gave him an inner security that enabled him to come this far. [BNC AK2 1146]
- 42) In her largeness of heart and her sincere desire to help all who needed it, Miss Green has never spared herself. [BNC AL8 825]

Group 4

- 43) It's so heartless and unfair after all you've done. [BNC AC2 1714]
- 44) But in that case I must warn you that I have no heart. [BNC FPU 1312]
- 45) ... a radically new and immensely powerful device which remains the heart of every modern radar. [BNC B7M 1733]
- 46) Indeed, the conditions created by the electoral system were seen as being the heart of Britain's current problems. [BNC J57 1703]
- 47) The feeling is very much that of a country house hotel in the heart of London, a retreat from the busy streets outside. [BNC, BPF2030]
- 48) Daimler-Benz, for example, has bought a large site on Potsdamer Platz, in the heart of the new Berlin. [BNC ABE 2574]
- 49) I know every word of it by heart. [BNC AAV 747]
- 50) Yet, in his heart, Cranston knew he was a hypocrite. [BNC K95 2704]
- 51) She was keeping her promise to herself, but in her heart of hearts Tess knew that eventually she would accept him. [BNC GW8 1389]
- 52) This plant has heart-shaped leaves with long stalks, which are olive green and slightly corrugated. [BNC CBL 977]
- 53) They had been thinking of a job in Parma to which I would commute daily; but this one sounded very interesting, something after my own heart. [BNC G3B 1822]
- 54) Oh, Mary of my heart's delight. [BNC ADM 2197]
- 55) A hearty voice of thanks for the chairman [BNC A73 144]
- 56) 'Oh, good!' said Francis from the heart. [BNC AOL 65]

- 57) If you ever find enough human emotion to fall in love then I can only pity the victim from the bottom of my heart,' she said savagely, lashing out in her pain like a wounded animal. [BNC JY5 2669]
- 58) Right from the heart. [BNC CFV 582]
- 59) He and I had had a heart to heart in the hotel following some comments supposedly made by him about me in the press, more particularly in the Sun. [BNC BMM 2053]
- 60) My own family I loved with all my heart. [BoE]

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Japanese politeness in the work of Fujio Minami¹ (南不二男)

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0. Introduction

This paper originates in a re-examination of the Japanese literature on Linguistic Politeness, at a time when an exhaustive and final answer to the question of what Politeness really is seems as elusive as it has ever been.

Japanese works on Japanese linguistics remain virtually unknown to the non-Japanese-speaking public², a fact motivated more by the lack of translations than intrinsic scholarly value. While the idea of discussing Linguistic Politeness without reference to one of the languages in which its structure and use are most sophisticated rightly sounds implausible, it is a fact that a good century of Japanese writings on the topic remain accessible only to the Japanese speaking public. Interestingly, the contribution of two Japanese linguists to the general debate on Politeness - I am referring here to Sachiko Ide's (1989) and Yoshiko Matsumoto's (1988, 1989, 1993) works³ - has been instrumental in the re-appraisal of the practically absolute dominion of the field by Brown and Levinson's theoretical framework (see Pizziconi, 2003). Had such contributions not been delivered in English, they would hardly have achieved the same impact on the global arena. Such widely known Japanese scholarship in English, however, has clearly not developed in a vacuum. Data from Japanese language have contributed enormously to the whole debate on politeness, and Japanese scholarship has been able to provide fertile avenues of investigation. Widening our perspective on the Japanese approaches to the study of Politeness is the first reason for a translation of Fujio Minami's work.

The second reason has to do with Minami's own particular view of Honorifics, i.e. attempting to conceive Honorifics in a more subtle, and in essence more 'flexible' way than had been proposed before. Previous classifications had left major traditional categories and the widely accepted but cumbersome notions of Deference, Humility, Courtesy, etc. substantially unmodified, and differed only in terms of minor taxonomic variations. His original conception is qualitatively different. Minami's starting point is that all types of honorifics always involve an *evaluation* and a *judgment*. On this basis he re-analyses all the traditional categories. He also reformulates the classic notions of

¹ I wish to sincerely thank Prof. Fujio Minami for authorising the translation of his work, and for providing precious and generous suggestions on many difficult terms in the translation. I hope my final choices do not do too much injustice to the original. I must also thank my mentor Prof. Tomio Kubota for offering advice, and enthusiastically supporting the choice of this work by Minami, which he defined a '*chiisana taicho*': a 'little great work', with reference to the pocket size of this major scholarly contribution. I rushed Dr. David Bennett and Dr. Nicolas Tranter into a final reading, and want to thank them here for kindly accepting my S.O.S. at very, very short notice. By claiming the last word on the final version I take of course responsibility for any resulting inaccuracies.

² The *Japanese publications in foreign languages: 1945-1990* (1990) lists three translations into English and one into German, and only one more, published in 1999, has emerged from my own investigation.

³ All names - whether Japanese or western - appear with family name last. Japanese names are romanised and original characters are provided for some, in order to facilitate retrieval of Japanese sources. Japanese characters are provided besides the transliteration for some otherwise ambiguous neologisms and homophones.

'polite' and 'impolite' into a set of more abstract and more general concepts such as high vs. low, weak vs. strong, elegant vs. vulgar, etc., which convey honorific meanings by combining in various fashions rather than as direct, unequivocal, indexed monolithic meanings. I believe that this idea gives Minami's analysis an edge over many other reputable works, as it allows a more fine-grained description of honorific meanings, as well as perhaps a potentially more reliable basis for cross-linguistic comparison. This would by no means be a minor achievement, at a time when the once convenient tool of a couple of universal aspects of 'face' has definitely lost popularity, and the search for common traits is not so fashionable anymore.

A couple of brief paragraphs are clearly not adequate to outline even a cursory overview of the history of Japanese studies on linguistic politeness, but the following sections aim mostly to provide a contextualisation of Minami's work. I will first discuss various Japanese native definitions of politeness and then mention a few scholars whose writings Minami was probably familiar with or who may have constituted direct influences on his work. In the last section, I will describe the nature of this particular publication and provide practical information on the translation.

1. The understanding of 'politeness' in Japanese language studies

A consciousness of the richness of honorific expressions in the Japanese language on the part of Japanese writers and intellectuals is as old as the earliest written texts we possess. The classical works of the 8th century, such as the anthology *Man'yōshū* and the chronicle *Nihongi* or the court ladies' diaries of the 11th century, illustrate users' and observers' awareness of the peculiarity of such linguistic forms and the social implications of their use (Lewin, 1967:107). The Edo period (1603-1868) saw the appearance of the first systematic accounts (from both Japanese and foreign scholars) but the definitive labelling of this linguistic phenomenon as 'keigo', and the corresponding 'honorifics', are attested only in the last decade of the 19th century.⁵ One of the fathers of Japanese linguistics, Motoki Tokieda (峠枝謙記), (in his 1940 work: *Kokugogakushi* [A History of National Language Studies]) equated the history of *keigo* studies to a history of the unfolding of *keigo* consciousness, or a history of self-awareness (Nishida, 1987:204). No doubt this awareness received the strongest thrust at the time of Japan's enthusiastic encounter with foreign languages following the re-opening of the country in 1868. However, the encounter with foreign languages and cultures led to numerous but often simplistic comparisons from which *keigo* studies did not necessarily benefit: very few publications dealt explicitly with the question of *keigo* in other

languages: most took for granted that there was no such thing to begin with. In any case, the adoption of an accepted terminology is probably both an index of an enhanced awareness of the peculiarities of this linguistic category and a factor which contributed to the appearance of *keigo* as an independent item of linguistic enquiry. A monograph of Yoshio Yamada (山田孝雄) in 1924 is thought to mark the beginning of such era (see Lewin:110).

The term *keigo* (敬語) is the Sino-Japanese reading of a two-character compound formed by *kei-*, meaning 'respect' or 'deference', and *-go*, meaning 'language'. The term, like the English term 'politeness', is rather deceptive in its suggesting a mere relation with notions of respect, or politeness. This representation made a 'scientific' understanding of the nature of the phenomenon rather more arduous than it would have been, had it not evoked a moral dimension. Early categorisations of *keigo* were limited to a simple distinction of devices for expressing deference and devices for expressing humility, an obvious consequence of a narrow view of *keigo* as the 'language of respect'. However, even while maintaining the restrictive label of *keigo*, already before the war, some scholars had proposed a more comprehensive view. Kaname Sakuma (佐々木 勘正) (1888-1970) recognised the necessity to consider 'ugly language' (*kitanai kotoba*) in order to explain the existence of a 'fine, beautiful language' (*utsukushii rippuna kotoba*). Motoki Tokieda (1900-1967) defined the discrimination between deference (*son*, 尊) and contempt (*hi*, 卑) as two sides of the "conceptual representation of the subject matter" (*sozai no gainenteki hachū*) (Kindachi et al. 1988). With the postulation of a system of oppositions for the expression of modal meanings, i.e. the inclusion of impoliteness in the study of honorifics, a scientific approach can finally be established. (Incidentally, the study of impoliteness only hit the international academic arena roughly half a century later, with Culpeper's 1996 paper: 'anatomy of impoliteness'. A few other scholars had incorporated this side of the distinction in their theoretical definitions but failed to maintain it consistently in their investigations, as discussed by Eclen 2001:87).

The study of honorifics rises to a more comprehensive plane when the underlying interpersonal and evaluative dimension – as opposed to the technicalities of the grammatical coding – gets highlighted. Early signs of a modern notion of *Taigun* (礼: "treatment, manner of entertainment"), i.e. a subject's expressive choice of linguistic forms which reflect his/her regard for determined objects and people, and his/her assessment of the relation with an addressee, appear in the Meiji period [1968-1912]. *Taigun* naturally includes impoliteness, otherwise known as 'negative *keigo*', or derogatory expressions, rightly considered the deferential language's opposite pole along the common axis of the evaluative attitude⁶. The fortune of the term *Taigun* however, when compared to that of *keigo*, was short-lived. This is attributed by many to the propagandistic efforts of pre-war Japanese nationalists. The construction of a Japanese identity demanded emphasis on specifically Japanese ethical virtues: a sense of respect and modesty were seen as characteristic traits. A term like *keigo* ("the language of respect") was seen as proving the point much better than the blandly value-neutral *Taigun*

⁴ The Portuguese missionary Ioaó Rodriguez wrote extensively and systematically about *keigo* in his *Arte de Lingoa de Japão*, published in Nagasaki between 1604 and 1608. However, due to the Tokugawa regime's intolerance of Christian missionaries and the closure of the country, his work had a strong influence on other foreign missionaries and scholars long before it reached the Japanese scholars, some three centuries later, in the early Showa period (1926-1989) (Nishida, 1987:224).

⁵ According to Lewin (1967), the first English work which employs the term 'honorific' systematically is B. H. Chamberlain's 'Handbook of Colloquial Japanese' (1888) and the first record of the term *keigo* is Fumihiko Otsuki (大塚文彦)'s grammatical introduction to the dictionary *Genkai* (1891). Toshiki Tsujimura (辻村敏助) (1977:89) however, records the use of the compound in Yoshikage Inoue (井上清)'*Kateigo Shinron* of 1863, although he admits it may have been read differently (*uyamai katachi*). He maintains that a clear reading of *keigo* appears in Tanaka Yoshikado (田中義勘)'s *Shoogaku Nihon Buntan* of 1874 and at least 2 more works in the same and the following year.

⁶ The pioneering use of the term is attributed to Masami Okada's (岡田正美) *Taigunhou* [A grammar of Treatment Expressions, or Mode of Treatment] in an article which appeared in 1900 on *Gangogakushu* 11:5-6 [The Linguistic Journal] (Tsujimura 1992: 132). Soon after that, Datsuburo Matsushita's use of *Taigun* in the publication *Nihon zokugo bunten* [A Grammar of Japanese slang] in 1901 by *Seinohwa* (誠之社), further contributed to the popularisation of the term.

(Tsujimura 1992:134, and Kindaichi et al 1988:610). *Taigun* was to be revived after the war by Shizuo Mizutani (水住静夫)⁷ and others (Tsujimura 1992:137), but it has remained specialist terminology, an explanation of which invariably calls for the term *keigo*.

The Council for the National Language (*Kokugo shingikai*) has so far produced two official programmes, the second in 1998. Both documents refer to Honorifics as *Keigo*, a choice explained as the need to reflect laymen's consciousness and everyday discourse. The primary intent of the first was to prompt a simplification of a formally excessively cumbersome system and an invitation to use *keigo* to mark horizontal rather than vertical relations, which would reflect the new democratic orientation of the country.⁸ The second, naturally reflecting the intervening nearly five decades of the studies, is mostly concerned with the need to conceive of *keigo* in more general terms (indeed as interactional behaviour, or *taigun koudou*) and as a situationally-based, complex system for the management of smooth interpersonal relations (Bankachoo 1998:4). While emphasising the view of *keigo* as tool for the management of social relations, the latter document also insists that maintaining the whole traditional formal taxonomy (Humble, Deferential forms etc.) is of paramount importance for the preservation of the national language and culture (Bankachoo 1998:5). It emphasises that "expressing consideration by means of appropriate expressions of politeness is a custom ingrained in the Japanese culture."⁹ Such emphasis on the traditional categorisation and normative uses on the part of professional linguists may seem odd, or plainly conservative. However, this example underscores the dilemma facing any discourse on politeness. While a scientific categorisation must be socially neutral and objective, "in practical classifications, such as in calling someone (imp)olite, one is involved in immediate social action; one draws a social distinction based on value, one subjects the other's behaviour to (social) evaluation, one approves or condemns" (Eelen 2001:37). The importance of a social sensitivity of the normative discourse on politeness, or one's metalinguistic beliefs in processes of socialisation and hence in the formation of a cultural identity, are rather unquestionable.

The Council for the National Language's document does not lament the loss of 'good manners', as many popular publications often have done. It does however mention the profound social transformations likely to have an effect on the use of *keigo*: extensive urbanisation (with its loss of community-based activities), gender equality, devaluation of the generation gap, information technology and the media, and the impact of business culture and business encounters. Interestingly, it also mentions the massive population of foreign learners of Japanese and their impact on the whole Japanese society.

The understanding of the myriad of factors affecting *keigo* highlights the pervasiveness of such tool for the achievement of social stakes and its rather 'politic' nature (Watts, 1992).

⁷ *Taigun Hyoogen no Kiso* [Foundations of Treatment Expressions] (1955), private press edition. The document is reproduced in Bankachoo 1974: 83, appendix 2, Nishida 1987:407, and also Kokutetsu Kokugo Kenkyujo 1990:138.

⁸ Takasuzuna Ken Hyoogen ni yotte samazamana *haijyo* no arawasu koto wo nihon no banka ni nezashita *kan yoo to nate iru*, p. 7.

2. The work of Fujio Minami in context

It was mentioned above that in the early 20th century there begins to emerge a modern, comprehensive view of politeness as a kind of (social) behaviour and as the total of positive as well as negative attitudes towards, and evaluation of, objects and interlocutors.

The legacy of Motoki Tokieda to the study of politeness cannot be stressed enough. To him we owe the observation that the use of *keigo* says as much about the eastern in which a speaker holds addressees and referents as it does about his/her own personality and erudition. (Ooishi 1974:13). This recalls Erving Goffman's considerations on deference and demeanor: "An act through which the individual gives or withholds deference to others typically provides means by which he expresses the fact that he is a well or badly demeaned individual" (Goffman 1967:81, from a work of 1956). Again to Tokieda's 1941 work: *Kokugo Genron* [A Study of the National Language], we owe the emphasis on the function of *keigo* as a tool for the 'discrimination' or 'discernment' (*shikibetsu*, or *benbetsu*) of social meanings (Tsujimura 1992:3). His 'theory of language process' led him to state rather provocatively, and controversially, that what had thus far been rated as the kernel of linguistic politeness, i.e. the two categories of *Sonkeigo* and *Kenjougou* (Deferential and Humble, or Referred Honorifics) involved no deferent intention at all. Instead he believed that these categories indicated merely a speaker's recognition of etiquette (*girei*) or a reflection of the speakers' education (*kyouyoo*), and if a speaker's direct expression of affect was to be found it would be exclusively in the category of *Tenkeigo* (Addressee Honorifics)¹⁰ (Morino 1973:104). Whatever the persuasion of the various commentators on what is clearly a very intriguing proposal, his take on politeness radically departs from the otherwise rather common view of *keigo* as "a manifestation of the virtues of deference and capacity to yield" (*sonkei shijoo* [推謙] *no hitoku no araware*) (as pointed out by Tsujimura 1992:3), or as the attitude which reflects the unique co-operative structure of human relationships in Japanese society (Yoichi Fujiwara [藤原与一] 1974: 239-40).

Tokieda is acutely aware of the dangers of drawing unmediated conclusions on Japanese culture and thought from the Japanese language (see on this Karatani 1995). Post-war linguistic scholarship, while steadily moving away from such propagandistic views, has proposed a variety of rationales for the use of *keigo* which often exposes the difficulty of abandoning traditional analyses.

Takeshi Shibata's (柴田武) sociolinguistic work during the 50s was pioneering in that it represented the first attempt at a coherent ethnolinguistic project, and the introduction of various experimental methods (Kunitiro et al. 1998:11 and 103 on honorifics surveys). Not surprisingly, Shibata is one of the scholars who early on strongly advocated a broader view of Honorifics, from the notion of 'negative *keigo*' as a complement of the *keigo* for deferential purposes, to the notion of *keigo* as etiquette. Shibata crucially distinguishes between basic forms in morphological terms (where *-da* is the basic form of *-desu*, *-degozaimasu*, etc.) and in sociolinguistic terms (where, at least in the standard Tokyo dialect, the basic form is *-desu* and the other forms convey special

¹⁰ This distinction follows from the more general distinction between *shi* and *ji*, or 'words' with a signifying semantic content and 'linking elements', or 'objective' and 'subjective' expressions (as Karatani 1995:21 defines them).

pragmatic effects). His strong interest in the pragmatic usage of honorifics is reflected also in the choice to eliminate honorifics for the imperial family from his investigation, on the ground that they are selected on the basis of 'social class' rather than social or psychological distance', i.e. they do not offer the speaker any choice (Kunhiro et al. 1998:93 ff).

Hatsutaroo Ooishi (大石初太郎) (1974) underlines power differences (by pointing out, among other things, gender-related differential use) and the mercantile extensive use of *keigo* in business discourse. In this and subsequent works he also discusses *keigo* as reverence (*agame*), formality, distance, dignity, decency, irony, contempt, and finally endearment (see Tomio Kubota's discussion of the latter in Kokuritsu Kokugo Kenkyujo: 1990:94 ff). Although it is easy to detect a strong moral take in his writings, it should nonetheless be noticed that he also talks of *wakimae*, or 'discernment', a term which has now acquired global currency thanks to its utilisation by Saethko Ide (1989) in her critique of Brown and Levinson.

On the other hand, Yutaka Miyaji (宮地裕) in 1971 talks of *keigo* as '*shakoo no kotoba*', or language for social interaction. Fumio Inoue (井上豊雄) in 1972 (see on both Ooishi, 1974: 15) notes that even Referent Honorifics, i.e. Deferential and Humble forms, are in fact strongly regulated first and foremost by considerations about the addressee (the *lie et mine* of the interaction), providing an early suggestion of the strategic, rather than indexical, function of honorifics (on this distinction see Pizziconi, 2003). Miyaji also introduces (Kokuritsu Kokugo Kenkyujo 1992:21) a term that Minami will borrow: *Teichoogo*¹¹ – a distinction which again underscores the strategic use of referential honorifics.

Shino Hayashi (林四郎) (1973) in a volume dedicated to the study of *keigo* as a part of human behaviour (*koodo no naka no keigo*) attempts to draw parallels between verbal and non-verbal polite behaviour, and how they are reflected in perceptions based on the five senses and ideational meanings.

Toshiki Tsujimura (辻村敏樹) (1977), following Yoshio Yamada, distinguishes between absolute and relative uses of *keigo* envisaging in the latter a special category for benefactive constructions, but incorporates this view with Tokieda's interest in meaning producing a categorisation with great pedagogic potential (Kokuritsu Kokugo Kenkyujo 1990:20). His most long-lasting and popularised legacy is perhaps the creation of the term *Bikago* for those instances of 'embellishment' of the linguistic content which are not directly oriented to the addressee (though previously included in the Addressee Honorifics) but achieve expressive effects via a speaker's 'care' towards the linguistic form itself.

Seiju Sugito (杉井清樹) (1983), utilises Minami's framework and the notion of *koryoo* (consideration [顧慮]) – which he sees as *kikuhari* (attention, care) – to discuss a speaker's choice of appropriate expressions (see Kubota's discussion in Kokuritsu Kokugo Kenkyujo: 1990:61ff).

It is not possible to include, in this succinct overview, the work of all the scholars who have contributed to the debate on *keigo* so far. Let us conclude by mentioning the

¹¹ *Teichoogo* terms, which are purely indexical, include *-desu*, *-mazu*, *-degozaimasu*. *Teichoogo* terms, which have a propositional content, include structures such as *o-itashi*, *go-mooshugoe* (which generally attach to *Teichoogo* forms), prefixes such as *sho-*, *go-*, etc.

contribution to the discussion of honorifics made by two foreign scholars contemporary to Minami. This is easily accounted for, as the nearly unique reference on the topic until the early 70s was Samuel Martin (1964), a seminal paper on Japanese and Korean for English-speaking audiences, which therefore would not have contributed much to Minami's approach (it is however quoted in his book). J.V. Neusipny's work in both English and Japanese is probably the wealthiest contribution of a non-native specialist to the debate on *keigo*. While both scholars demonstrate a very sophisticated eye for the subtleties of Honorific usage, they do not depart from the traditional taxonomies and classification.

Needless to say, traditional taxonomies are not necessarily bad taxonomies. However, these classifications do have several drawbacks: they crystallise conceptualisations of the honorifics' social functions and cultural meanings and hence become potentially inadequate as taxonomies as time goes by; they are rather unsuitable to the description of fine expressive nuances; and they can be very inadequate for pedagogical purposes (see the problem of terminology in Kokuritsu Kokugo Kenkyujo 1990, and Pizziconi 1997).

Minami's approach does not particularly lend itself to pedagogical models of Japanese politeness. Descriptive tables of fine distinctions in the 'features of the treatment' (of linguistic and human objects) or features of a speaker's evaluative attitude, do not necessarily aid learning and still require previous knowledge of the phenomena under discussion. However they do aid the description of potential pragmatic nuances of Honorifics in the narrow sense, more general honorific devices, and non-verbal behaviour as well. Moreover, they permit a comparison of these diverse domains, based on the object and manner of evaluation in the various components involved in the choice of one or the other of a set of expressions. No doubt Tokieda's legacy is responsible for such a broad understanding of the phenomenon of *keigo*, ranging from dedicated devices with rather straightforward indexical meanings, through the interpersonal potential of interjections, conjunctions, and discourse to non-verbal communicative behaviour. Minami's contribution is the attempt to systematise such broad conception. His attention to the *evaluative* aspect of honorific usage, as well as the notion of simple semantic features that combine in different ways to generate a multiplicity of interactional hues are lines of thought worth pursuing to improve the way we conceptualise politeness in any language (see for example Eelen 2001 on the question of the *argumentativity* of politeness).

3. This work of Fujio Minami

The work translated here, *Keigo*, was published in 1987. However, the theory it expresses was in fact already fully elaborated some 15 years before. Much of the material presented here had already appeared in the 1973 article on *keigo* as part of (human) behaviour, in the volume of the same title, and the 1974 article: "The Semantic Structure of Honorifics" in the *Keigo* Course. This book is therefore a compendium of Minami's previous work on *keigo*, aimed at the larger public. It appeared in a pocket-size Iwanami Shinsho edition, and has since then been a popular reading for Japanese and foreign linguistics students, as well as the general public.

Although, as pointed out earlier, some of the ideas discussed in this book were 'in the air' in the early 70s, Minami's view is important for its comprehensiveness. Minami

highlights here the 'exploitability' of non-honoric devices for politeness purposes, to the point of including the stylistic differences between *wago* (or Japanese native words) and *kango* (words of Sino-Japanese origin). While this clearly opens up the question of where 'politeness' ends and 'style' begins, this broadening of perspective is crucial for an understanding of *keigo* as something more than a deferent intention towards superiors, and consequently an exploration of other 'honorific meanings'. Similarly, once other indirect or euphemistic expressions (*timawashi*) start to be taken into account, it becomes clear that *keigo* is not only a Japanese phenomenon (a view in fact much more difficult to entertain for a speaker of a language rich in sophisticated honorifics than for the speaker of a language without them). The book discusses all these themes.

The original work is composed of the following chapters:

1. Broad and narrow definitions of *Keigo*
2. *Keigo* in Japanese and in foreign languages
3. The structure of *Keigo*
4. Conditions for the use of *Keigo*
5. The function of *Keigo*
6. *Keigo* in action
7. The future of *Keigo*

Barbara Pizziconi has translated chapters 1 and 3, Noriko Inagaki chapters 4 and 5. The choice of these chapters is motivated by relevance and constrained by space.

A glossary and lists of abbreviations are provided in the first footnotes of the two translator's respective sections.

The book begins by questioning the very notion of *keigo*, which – as pointed out earlier – is not necessarily self-explanatory even for Japanese native speakers. In fact in terms of the distinction between folk and scholarly conceptions of Politeness (Watts et al 1992:3, Eileen 2001:42) while Minami's interest is clearly directed to a 'Politeness?' he addresses an audience that probably only thinks of *keigo* in terms of 'Politeness!'. This latter, common-sense notion of *keigo* is rooted in everyday experience and derived from a rather evident systematic patterning and taxonomy. Hence Minami's first task is that of broadening the field, and he sets out to do this by discussing possible approaches and types of classification, and then providing numerous examples of the generalisability of politeness considerations, in both old and new categories. Two points must be noted about this section – corresponding to chapter 1 of the book. First of all, it must be kept in mind that Minami's goal here is to redefine *keigo* and show its salience with as many examples as possible of instances arching over verbal and non-verbal behaviour. Despite the translator's attempt to provide exhaustive glosses of the massive number of terms presented, these had to be economical and will still inevitably require some previous knowledge of the terms' use. Secondly, the list is possibly liable to be criticised for its apparent casualness. Minami does not provide any criteria for his inventory, and the result is an overview in which, for example, lexical elements and sentence length, or also elements that are part of closed sets and those which are not, are all treated in the same way. In my view, the value of the inventory lies, rather, in its highlighting the underlying 'discrimination' (as inspired by Tokieda) or paradigmatic relations of meanings and devices, which can be strategically mobilised for politeness purposes.

In the following chapter (corresponding to chapter 3 in the book) he begins illustrating his own semantic classification and his fundamental notion of 'consideration' or 'regard'. It is this intermediate level of the speaker mediation which gives this model an advantage over the others. No matter how sophisticated a classification, linking linguistic elements to social meanings directly and unequivocally tends to produce weak generalisations and massive numbers of counterexamples (a problem which is still bugging much of the global discussion on politeness). This is due to the multiple soci-pragmatic norms which regulate the use of honorifics in different speech communities and situational settings. Therefore it is the mediation provided by the speaker's and situational settings (with its variable objects) which allows a more flexible consideration (together with its variable choice and the variety of observed behaviours).

In the last paragraph of chapter 3 Minami discusses the features of the expressive explanation of a speaker interactionally sensitive meanings. These expressive devices are devices that can convey interactionally sensitive meanings. These expressive devices are different from the 'features of treatment' (which refer to the speaker's evaluative attitude), and refer rather to the symbolic images employed in honorification. Minami's notion of 'expressive devices' bears in fact striking resemblance to the notion of metaphor, which studies in cognitive linguistics have brought to the fore in the last twenty years or so. As Lakoff and Johnson (1980) submit: "metaphorical concepts can be extended beyond the range of ordinary literal ways of thinking and talking into the range of what is called figurative, poetic, colourful, or fanciful thought and language". If we look at honorifics through Minami's characterisation, then 'honorific meanings' seem to be just that, perhaps only in a slightly more restricted sense of representing uses of language whose primary objective is the management of interpersonal relationships, or face-work. Since metaphors lend them selves to be vehicles of interpretation, honorific meanings can be constructed by analogy relatively easily, as long as they have some experiential basis. Minami's 'devices' are substantially types of metaphorical imagery mobilised to categorise interactional experience. Some of Minami's 'devices' have a clear orientational nature – as he points out in chapter 3 – and their spatial basis is relatively intuitive: up/down, before/after, direct/indirect. Temporal qualities are indicated by immediate/hesitant, physical qualities by big/small, order/disorder, aesthetic qualities by elegance/vulgarity, excellence/subordination, ornamentation/non-ornamentation, and affective/cognitive qualities by consensus/dissent, attention/indifference. Though these qualifications sometimes refer to morpho-semantic devices (such as, for example, the application of the characters: [大] 'big', or [高] 'high') sometimes to prosodic devices, sometimes to non-verbal behaviour, it is easy to see the non-arbitrary nature of such (nonetheless culturally specific) associative conventions (Lakoff and Johnson 1980:14).

Space constraints do not allow any further elaboration on the link between honorification and cultural imagery in this context, but this is definitely an area on which Minami's research seems to call for further investigation.

Chapter 4 deals with regulative norms, or external conditions which determine a speaker's choice (or avoidance, of course) of honorifics, as well as internal conditions. This is a descriptive, not predictive, list, but it is valuable nonetheless as a reflection of a certain common sense or collective consciousness about *keigo* – e.g. that experience (or seniority) is an important discriminatory criterion in the domain of vertical relationships,

as many studies of Japanese society also point out¹², etc. The section on 'internal conditions' illustrates the various linguistic constraints on the use of honorifics from word morphology to discourse.

The final chapter translated here, Chapter 5, deals with the main functions of honorifics. The aforementioned categorisation of the many functions of *keigo* (and the crucial distinction between the not always corresponding deferent forms and deferent intentions) by Hatsutaroo Oishi (大石太郎) is presented, and briefly juxtaposed with more general paradigms of the functions of linguistic communication. This allows Minami to extrapolate six main functions of the *keigo*, through which he revisits verbal and non-verbal behaviour.

Finally, a note on the style: many of those not accustomed to the rhetorical style of Japanese linguistics may find the prose rather unconventional. The translators have attempted little literary intervention, a decision that in retrospect may not have promoted transparency for an audience unfamiliar with such texts. The Japanese audience would have been familiar with both the register - deliberately simple and informal - and the many examples referred to as supportive evidence. Compared to today's mainstream scientific linguistic discourse, descriptions and categorizations may not aim at rigorous exhaustiveness, generalisations may seem casual. Yet the content of the book bears witness to Minami's extraordinary power of observation. Even those who may find the form of this scientific work somewhat questionable will no doubt acknowledge his significant effort to reject the temptation of a romanticised view of Japanese and to attempt a fine-grained picture of *keigo* in all the intricacies of such an exuberant, complex and sophisticated instrument of social action.

¹² For Yoshino (1992:87, 100) such 'age group consciousness' is even one of the canons called upon in holistic theories on modern Japan to claim a unique identity. According to him, Japanese industrial society conveys of itself as an 'extension' of a pre-industrial, communal society because the old parent-child relationships are reproduced (or seen to be reproduced) in the workplace, where senior members take care of, and conversely command deference from, subordinates.

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Minami Fujio – *Keigo*¹

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CHAPTER ONE. HONORIFICS: BROAD AND NARROW DEFINITIONS OF THE TERM²

The scope of Honorifics

Discrimination of Honorifics

In daily conversation, we are constantly engaged in some form of honorific distinction. Towards certain interlocutors we would use *-desu*, *-masu*, or *-gozaimasu*:

- *Ima sanji desu.*
It is [POL] three o'clock.
- *Tegami wa watashi ga dashite okimasu.*
I shall post [POL] the letter.
- *Koko kara haitte yoroshuu gozaimasu ka*
Would it be alright [SUPERPOL] if I entered from here?

and towards other interlocutors we could probably say:

- *Ima sanji da.*
It is [PLAIN] three o'clock.
- *Tegami wa watashi ga dashite oku yo.*
I'll post [PLAIN] the letter.
- *Koko kara haitte ii kai.*
Can I [PLAIN] enter from here?

When talking about a third party, we can use either of the following:

- *Kinoo ano kata ga irasshatta.*
That person [DEF] came [DEF] yesterday.
- *Kinoo kare ga kita*
He [PLAIN] came [PLAIN] yesterday.

And again we can choose between:

- *Shikijoo ni go-annai mooshiageru.*
I shall show them [HUM/COU] the ceremonial hall.
- *Ii geka no sensei o shookai shite itadaita*
I was introduced [HUM/COU] to a good surgeon.

¹ Fujio Minami, *Keigo*. Iwanami Shoten, Publishers: Tokyo, 1987. © 1987 by Fujio Minami. All rights reserved. Translated and reprinted by permission.

² Glossary: the most conventional specialist terms for honorifics have been translated as follows: *Bikago* = Beautification (forms); *Keigo* = Honorifics (in a narrow sense; linguistic politeness); *Keihi hyoogen* = Derogatory expressions; *Keihigo* = Derogatory forms; *Kenjoogo* = Humble (forms); *Hibago* = Abusive forms; *Hiba hyoogen* = Abusive Expressions; *Sonkeigo* = Deferential (forms); *Sondaigo* = Arrogant (forms); *Taiguu hyoogen* = Interactional expressions; Politeness (in a broad sense), *Taisha keigo* = Interpersonal honorifics; *Teineigo* = Polite (forms); *Teichoogo* = Courteous (forms).

List of abbreviations for chapters one and three: ADJ = adjective; AUX = auxiliary; BEN = benefactive; CJEC = conjunctural; COP = copula; COU = courteous; DEF = deferential; DER = derogatory; FORM = formal; HUM = humble; INF = informal; IMP = imperative; INT = interrogative; NEG = negative; POL = polite; POT = potential; PLA = plain.

or the corresponding:

- *Shikujō ni amari suru*
I shall show them [P.L.A.N] the ceremonial hall.
- *It gēka no shōkai o shite moratta*
I was introduced [P.L.A.N] to a good surgeon.

The speaker or writer must choose how to speak or write by assessing the conditions that apply to the addressee or the referent of an utterance. She must continuously judge whether it is appropriate to use Honorifics towards a particular person, or under particular circumstances.

Deferential, Humble, Polite forms

In the examples listed above the distinction between elements considered to be 'true' Honorifics and those expressions which are not may appear relatively straightforward. However, there is no general consensus on what should be included in the category of Honorifics and what is better left out. In the examples above, *ano kata* [that person] or *irasshainu* [to go/come/be] represent the category called *Sonkeigo* [DEF] in the traditional Japanese grammar (or School Grammar), *Moonshigeru* [to say] and *itadaku* [to receive] represent the category of *Kenjōgo* [HUM]. Finally, *-desu*, *-masu* and *-gozaimasu* represent *Teineigo* [POL]. These categories of Deferential, Humble and Polite forms are what we consider *Honorifics* in the narrowest sense.

However, when we take a look at other Japanese expressions of ordinary use, it is easy to find many which share some of the characteristics of the narrowly defined Honorifics. It may thus be possible to broaden the scope of the Honorifics category.

The general character of Honorifics

I would like to begin by considering the features shared by elements of the narrowly defined Honorifics and honorifics in the common sense. We can begin by listing the following three.

Consideration [koryō, 考慮]

Firstly, we should look at the consideration for, or concern about an object, on the part of the speaker or writer (henceforth collectively: the speaker³). By the term 'consideration' I refer to something that one may be concerned about or something one pays attention to. For instance, the use of *-desu* or *-masu* often depends on a speaker's consideration for a listener or a reader (henceforth the addressee). It occurs when addressing someone who is older, socially or in some other sense superior to the speaker, or on a first encounter. By adding *o-V-ni naru* or *-rareru* to a verb (e.g. *odekakeni naru* [to go out +DEF], *kimerareru* [to decide +DEF]) one displays consideration towards the agent of the verb in question. This is so even when the agent's object of consideration is not necessarily the addressee, but a third party, as in the following examples.

- *Ano kata mo odekakeni tazimashita*
He too has gone out [DEF].

³ The collective term used by Minami (s: 'sender'). This is not a neutral term in the Japanese original either, but since this text does not, after all, discuss an information-processing model, I decided to opt for the more conventional 'speaker', and below – instead of 'receiver' – 'addressee'.

- *Mae no shichōo san ga kimetazetai koto de...*
This is something the former mayor has settled [DEF]

It is clear that in many occurrences of honorifics what is at work is consideration for someone. However, this consideration has not necessarily to do with the *participants* of the communicative event, be that the speaker, the addressee, or the referent. Even between people who do not normally use honorifics towards each other, the speech can become more formal depending on the topic.

This is demonstrated, for example, by greetings or the terms of condolences one uses towards people who have suffered a family loss, victims of a disaster etc. In these cases one can observe consideration towards the *content* of the message. Moreover, it is not unusual to use a formal register in formal situations, even when, under normal circumstances, one would rather avoid *-desu*, *-masu*, and *-gozaimasu*. This is consideration for the *situation* under certain circumstances.

Similar to this, there is the phenomenon of *-desu* or *-masu* used in a written text such as a letter, when addressed to someone to whom one would not use honorifics if speaking face to face. It may feel slightly odd to think that this usage results from a consideration for the letter as the *medium* (the instrument) of communication, but clearly the type of medium is a regulative condition of the use of *-desu* and *-masu*.

Evaluative attitude

As a second feature we can say that this consideration is always accompanied by some evaluative attitude on the part of a speaker. This involves an assessment of whether someone is, in any respect, in a higher or lower position (e.g. in terms of age, social status etc.), intimate or not (an old friend or a new acquaintance), whether the setting is public and formal or private and casual. The appropriate polite expression is chosen accordingly, with regard to a second or third party, and depending on the context. In a sense, one could say that it is a sort of evaluation, or a calibration of a certain object from a certain viewpoint. It is something like offering money at a time of congratulations or commiseration, gifts offered and gifts returned, invitations and reciprocated invitations, in other words the 'appraisal/appraisal' of human behaviour in everyday interactions.

Admittedly, when we talk of an evaluative attitude in connection with language use we may also be implying phenomena of different nature not necessarily pertaining to Honorifics. For example, it certainly has nothing to do with Honorifics if, when explaining something about a computer, we spend little time on basic facts when talking to a specialist and go into elementary details with a novice. Nevertheless, this reflects one kind of evaluation. Again, a measurement of sorts is needed when avoiding difficult vocabulary with a child, or when avoiding the mention of certain unsuitable topics during a meal. This last example comes closer to a question of politeness.

Needless to say, the crucial question is what sort of evaluative attitude regulates the triggering of polite expressions. We need to establish what the nature of this phenomenon is. With contemporary Japanese 'ordinary' Honorifics, or honorifics in the common sense, we can identify a number of different 'perspectives for evaluation', such as the following.

1. The relative position – superior or inferior – attributed to an object. For example, the use of Polite forms [Zeineigo] towards a superior, or of the Humble when talking modestly about members of one's circle.

2. The relative distance – intimate, friendly (close) or non-intimate (far, removed) – attributed to an object; the social or psychological distance. In general, when someone is regarded as non-intimate, relatively polite forms are used.
3. The degree of formality of a setting. The more formal the setting, the more likely the use of polite forms.

Appropriate use of linguistic expressions

The third feature we must mention includes the diverse possible ways of 'treating' a certain object based on the aforementioned evaluative attitude and consideration, and the existence of distinct expressions that reflect those diverse manners of treatment. As an instance of a distinction in the use of expressions, one can think of terms such as *kao* [face PLAIN] vs. *okao* [face +DEF. PREHX], but at times we can distinguish three or four different levels. For example, the following sentences are increasingly polite.

Kono hana wa sambia da. [PLAIN COPULA] This flower is salvia.
Kono hana wa sambia desu. [POLITE COPULA] This flower is salvia.
Kono hana wa sambia de gozaimasu. [SUPERPOLITE COPULA] This flower is salvia.

It is difficult to say whether it would be acceptable to talk of Honorifics if the speaker only felt a consideration, or some form of evaluative attitude towards an addressee, a referent, the content of communication or the setting, yet in the absence of differential ratings or of expressions that reflect them. For example, imagine a situation in which all Japanese became obsessed with Honorifics, and started indiscriminately using expressions such as *anata sama* [you +SUPERPOLITE] to any kind of addressee, or *gozaimasu* [COP +SUPERPOLITE] to any of the participants, or in any setting. Actually, something like this is happening to at least a part of the system of one language. It is well known that in many contemporary European languages a distinction exists in second person pronouns which roughly corresponds to *omae*, *kimi* [you = T] and *anata* [you = V]; for example, *tu/vous* in French, *du/Sie* in German. In English, however, the old *thou/ye* has been lost and only *you* survives today. With regards to second person pronouns one can say that European languages such as French and German have polite expressions in a general sense but English does not.

Broadening the range of Honorifics

The existence of a consideration

The three characteristics seen above have been formulated on the basis of a narrowly defined notion of Honorifics, but it is easy to apply them to other items of similar nature. For example, while *gozaimasu* [COP] is said to be more polite than *desu* [COP] or *masu* [FORMAL VERBAL SUFFIX], it also includes a connotation of *formality*. When it comes to formality, *myoontchi* is more formal than *ashitadasu* [homotow]; *sakujitsu* is more formal than *kino* [yesterday]. The use of *myoontchi* or *sakujitsu* often reflects a regard for a setting, or the evaluation of a setting as formal. *Myoontchi* or *sakujitsu* are not, strictly speaking, considered to be Honorifics, yet they do share common characteristics with *gozaimasu*. In the case of response forms [*keikotae no kotoba*, or *oioitoshii*] we also have distinct forms such as *hai*, *ie* [yes, no +FORM] and *un*, *iya* [yes, no +INFORM]. The underlying discerning factor is often the evaluation of the degree of intimacy with an interlocutor.

In the case of orders and requests, there are indeed numerous alternative forms:

	Bring it quickly	[IMP IMP]
<i>Hayaku motte koi</i>	"	[BEN BEN]
<i>Hayaku motte kite choudai</i>	"	[BEN BEN]
<i>Hayaku motte kite kudasai</i>	"	[BEN DEF]
<i>Hayaku motte kite kudasaimai?</i>	"	[BEN DEF INT]
<i>Hayaku motte kite kudasaimasen ka?</i>	"	[BEN DEF INT NEG INT]
<i>Hayaku motte kite itadakenaide shou ka?</i>	"	[BEN DEF POT NEG FORM CIRC INT]

Consideration for, and evaluation of the relationship with the interlocutor, as well as the setting, can be detected here as well.

These characteristics can be identified not only in linguistic forms such as the ones just presented, but in more general linguistic expressions and in acts of a linguistic nature (verbal behaviour). For example, even expressing the same content, we may choose to use a casual style where a number of elements are omitted, or complete expressions with no omissions. It's easy to imagine the former being used in conversations among intimates, and the latter among people who do not know each other well. Finally, whether to use morning and evening greetings or not is one kind of behavioural pattern and probably many in Japan use greetings towards strangers but not members of the family.

Negative Honorifics

Negative Honorifics [included in the honorifics], we can having broadened the range of verbal expressions [included in the honorifics], we can use a different approach. The expressions which we define as 'Honorifics' most often are those used to elevate a superior addressee or a superior referent, or those in which we lower ourselves in order to treat others deferentially. We may also include those which we use to treat an addressee or referent as socially or psychologically distant (so not to become too close and friendly), or those used to mark a situation as formal. One can imagine, however, the existence of expressions based on the opposite type of consideration or evaluative attitude, and it is indeed not difficult to find them.

Expressions of contempt or insults towards the addressee or the referent amount to a diminishing treatment. For example, *-shiyaganu* [to do +DER], *-shite kusatana* [to do +DER] *-me* [to do +DER SUFFIX] [*gijime* [old buffer], *atsune*] etc. are referred to as *kehi hyoogen* [Derogatory expressions], or *hiba hyoogen* [Abusive expressions]. Another case is that of self-enhancing expressions in which the speaker doesn't use [the expected] self-humbling expressions but chooses a rather arrogant tone: "*oresama ga ...shite tsukawanu*" [I ARROGANT do +BEN ARROGANT]. It may seem inappropriate to call these expressions 'Honorifics'. However they do share their same general character, though they are directed in the opposite sense. We could call them, metaphorically, *negative* Honorifics.

Non-verbal expressions

So far, we have examined only verbal expressions. However, non-verbal expressions also share some of the same characteristics. For example, in Japanese communities, the act of bowing is considered a rather polite expressive mode. Surely there is something in common between this action and the use of a polite linguistic term. The sense of intimacy with an interlocutor can be expressed with words but also with a smile. Kindaichi (1964) already discusses extensively cases of non-verbal expressions in verbal communication,

but recently the relation between verbal and non-verbal expressions has become a popular topic of research.

We can divide non-verbal expressive behaviour in two groups: behaviour which simply accompanies verbal expressions [*zuihankeki higengo hyoogen*] and that which can occur independently of it.

As an example of the former, consider the quality of the voice. Nomoto (1974) notes that female speakers of Japanese tend to raise their pitch when adopting a formal speech level. One could also mention interjections interspersed in speech. For example, many people utter a noise at the end of a formal greeting: *Kono tabi wa makoto ni onedeteo gozaimasu. Ah!* ['Many happy returns on this occasion. *Ah!*']. We can also mention facial expressions or laughter during a conversation. Many other examples can be seen in the written language. The type of epistolary style adopted, the choice of a brush or a pen, the type of paper, are just a few.

In connection with the type of non-verbal behaviour which can occur autonomously one could list bowing, shaking hands or other gestures, type of outfit, accessories (a hat, gloves, etc.) gift offers, and so on. Also in these instances it is possible to talk of a consideration and evaluative attitudes towards a specific object, and expressive forms that reflect them. Such consideration is what is conveyed by a choice: to dress up slightly when visiting a superior, or to stand up to greet one's superior when he enters the room.

Types of classifications

As we just saw, Honorifics can be conceived of as honorific expressions in a narrow sense, or as a broader category which includes forms similarly characterised. There may well be, therefore, different views as to what exactly should be studied in this connection. If we summarise these views we obtain Table 1. [...] In this table a '+' marks something which is considered relevant, and '-' something which is not.

TABLE 1: The scope of Honorifics

Forms of Expression	A B C D E F					
	Dedicated honorific expressions	Common verbal expressions	Non-verbal expressions	Deferential, humble, formal etc.	Derogatory, Arrogant etc.	
Content	+	+	+	+	+	+
	-	-	+	+	+	+
	-	-	-	-	+	+
	-	-	-	-	+	+
	-	-	-	-	+	+
	-	-	-	-	+	+

The view of Honorifics exemplified in type A investigates Honorifics in the narrowest sense. This includes what has frequently been referred to, in 'School Grammar', Deferential, Humble, and Formal linguistic forms and a few other elements. This is the area of Honorifics commonly investigated in the field of Japanese language studies.

Types B, C and D include wider ranges. Some scholars (e.g. Ootshi 1971) refer to these as *keii hyoogen* [expressions of polite intentions].

⁴ This sound is transcribed as [ʔqʔ] in Minami et al. (1974) 'Keigo no taikai', in: Hayashi S. and F. Minami, *Keigo Kozza* 1:71.

The term used in the world of *Kohangogaku* [National language studies] is *Taigun hyoogen* [interactional linguistic expressions], and this would correspond to type D. This is a term of sufficient generality and heuristic power. It will be necessary to consider this term when dealing with politeness in languages other than Japanese.

Furthermore, in many speech communities other than the Japanese verbal expressions are accompanied by a variety of non-verbal expressions with which they share many features. Whether in a narrow or a broad sense, it is necessary to place Honorifics within a unified theory of communication, which includes verbal and non-verbal behaviour. This approach is represented in E or F: I know of no single term which covers both verbal and non-verbal behaviour.

In this book, by using the term: 'narrow sense Honorifics' [*kyoogi no keigo*] I will refer mostly to type A. I will refer to the broader views from B to F by talking of 'Honorifics', 'Honorific Expressions' or 'Polite expressions' [*Keigo, Keigojaku hyoogen*]. D will be indicated by the term 'interactional linguistic expressions' [*Taigun hyoogen*]. E and F, which include non-verbal expressions, will be indicated as 'interactional behaviour' [*Taigun koudou*].

Honorific Expressions

In order to look at practical examples of Honorifics I will attempt an inventory of the expressions in use in the contemporary Japanese speech community, including those mentioned so far. The category F just described - that of 'interactional behaviour' - will be divided into the following three subcategories:

- Verbal expressions (including 'dedicated linguistic forms' and 'ordinary linguistic forms')
- Non-verbal expressions A (elements which require the presence of a corresponding verbal expression)
- Non-verbal expressions B (elements which can appear independently)

Verbal expressions

These forms will be presented proceeding from the 'core' to the 'periphery' of Honorifics.

1) Deferential forms

- (a) Terms to refer to actions and events. *Itashtarū* [be(come)go], *ossharū* [say], *mazaru* [do], *mechiagarū* [eat], *-rereru* [VERBAL SUFFIX], *o-go-I-mi naru* [VERBAL AFFIXES], *o-go-I-akobasu* [VERBAL AFFIXES], *o-go-I-kesu* [*da/da gozaimasu*] [VERBAL AFFIXES], *o-go-I-kudasaru* [VERBAL AFFIXES], *-te kudasaru* [BEN AUX]. Additionally, forms such as *outsukeshii*, *gorippa da* [ADJECTIVALS], *goyukuri* [ADVERB].
- (b) Personal pronouns and terms of address: *anata* [you], *kono kata*, *sono kata*, *ano kata*, *donata* [his-that which person], *otaku*, *kika* [you/Sir/Madam], *kikei* [you (to male)], *kishi* [you (to female)], *taikei* [you (to male)]. All terms which include the prefix *o-* (DEFINITE), and all those which include the suffixes: *-san*, *-sama*, *-dono* [all GENERIC NON-INTIMATE ADDRESS FORMS such as Mr., Ms., Mrs., etc.], *-chan*, *-chama*, *-kun*

⁵ Literally: 'Expressions of treatment'.

⁶ Prof. Minami kindly points out that *kikei* and *taikei* are used predominantly by male speakers to address a male and in epistolary style, with a slight old-fashioned connotation. The same applied to *kishi*, which is however used to address a female (personal communication 14/10/03).

[SUFFIXES FOR INTIMATES AND CHILDREN] -*sensei* [Prof., Dr-1, -shi [Mr., Miss, Mrs., Ms.,], etc. Professional titles: *loo buchou* [Section Head Ho], *Chaanrizu Ojji* [Prince Charles], *Hirari kyoo* [Sir Hillary], *Yukawa hakase* [Dr. Yukawa]. Additionally, *reika* [another person's older brother], *reijoo* [another person's daughter], *reijun* [another person's wife], *gosompū* [another person's father].

(c) Terms which refer to objects and facts belonging or pertaining to someone? *Okangae* [idea/opinion], *Okaku* [home], *Goken* [opinion], *Goshokugyoo* [job], *gokoosoku* [opinion/view], *gokoohai* [good offices], *kiti* [wishes], *kisha* [company], *gyokko* [manuscript], *hojoo* [kindness], *hoonai* [name] etc.

2) Humble forms

- (a) Terms to refer to actions and events: *ageru* [give], *hasu* [do], *hadaku* [eat, receive], *sashiageru* [give], *mairu* [go], *mooshiaeru* [say], *haiken suru* [see], *hatsuku suru* [borrow], *O/go-V-suru* [VERBAL AFFIXES], *o/go-V-hasu* [VERBAL AFFIXES], *o/go-V-moosu* [VERBAL AFFIXES], *o/go-V-mooshiaeru* [VERBAL AFFIXES], *o/go-V-hadaku* [VERBAL AFFIXES], *-te ageru* [BEN AUX], *-te sashiageru* [BEN AUX]
- (b) Personal pronouns and terms of address: *watashi* [I], *watakushi* [I], *watakushidomo* [we], *temae* [I], *tenaedomo* [we], *shoosai* [I], *gunoku* [my son], *keisai* [my wife], *tonji* [my son], *shoanai* [my sister].
- (c) Terms which refer to objects and facts belonging or pertaining to someone? *Gaken* [my opinion], *shoosha* [our company], *setaku* [my house], *setsuron* [my opinion], *hetten* [my/our shop]

3) Polite forms (*Teineigo*; occasionally referred to as *Teichoogo* [Courteous forms])
 -*Desu* [FORM COPULA], *-masu* [FORM VERBAL SUFFIX], *gozaimasu* [be, have], *degozaimasu* [FORMULA]. Additionally, some (Oishi 1975 etc.) include the following terms¹⁰ in this category: *-te orimasu* [PROGRESSIVE/RESULTATIVE AUX], as in *yoku wakate orimasu* ('I understand very well'); *-te mairimasu* [lit: come, INCHOATIVE AUX], as in *yuki ga juite mairimashita* ('It started snowing'); *-to hashimasu* [lit: 'doing so...'], as in *sono hashimasu* ('Then/Well, in that case! [we do that...'] etc.); *-to zojimasu* [lit: (I) believe that... [QUOTATION]], as in *kekko zo zojimasu* ('I believe it is OK'); *-to mooshimasu* [lit: to say that... [THEMATIZATION]], as in *natsu yasai to mooshimasu*... ('with regards to/I we talk about summer vegetables'); *-yoroshi* [good, OK] (vs. *ii, yoi*); all forms which include *o-* [FORM PREFIX]: *oshizukana ban desu wa ne*, ('It is a quiet [POL] evening, isn't it?...'), etc.; *achira* [there] (vs. *acchi*); *ikaga* [how] (vs. *do*), etc.

4) Beautification forms (*Bikago*)

hadaku vs. *taberu* [eat], *taberu* vs. *kuu* [eat], *gohan* vs. *meshi* [meal], *otearai* vs. *benjo* [restroom/toilet]. Also in this category: *atsiome* [job], *oyasumi* [break, holiday], *onaka* [stomach, belly], *oyatsu* [snack], *gochisoo* [delicious food], *goshu* [sake]. This category

⁷ Never used for the speaker or members of the speaker's circle, BP.

⁸ Always used exclusively for the speaker or members of the speaker's circle, BP.

⁹ See footnote 11 in BP's introductory chapter.

¹⁰ All of the following terms: *orimasu*, *mairimasu*, *hashimasu*, and *zojimasu* are originally Humble forms, and Minami's point is that they can have a *Teineigo* (Polite) use as well.

constitutes, together with the aforementioned Defeential, Humble and Polite forms, what we commonly understand as Honorifics in a narrow sense.

5) Abusive forms (*Ihibago*) and Derogatory forms (*Keihiho*)

This category includes what I referred to earlier as "negative Honorifics": *-kasari* [VERBAL SUFFIX] (*shikazaru*, ['bloody doing it'], *-yogaru* [VERBAL SUFFIX] (*wariyogaru*, [bloody laughing]), *-te yogaru* [DEROGATORY AUX] (*sumasashite yogaru* [you're a snob]), *kasojiji* [old bastard], *kazome* [little brat], *aitsu* [that fellow], *daitsu* [which fellow], *kasama* [you], *remee* [you], *yatsu* [that bloke], *yatsura* [those bastards], *yaroo* [you asshole that bastard], *ama* [bitch], *gaki* [bad kid, little shit] etc.

6) *Sondai* [Arrogant forms]

These are also considered negative Honorifics: *-te isukawasu* ['I'll do it for you!']¹¹, *choukai suru* [lit: [arrigatoku] *choudai shiro* [you better accept it with gratitude]; *oreyama* [my honourable self]].

7) [This group includes all the] terms of address other than those already mentioned. It concerns modes of use of particular elements. For example, it concerns whether one uses both orally and in writing – surnames + personal names, or only one of the two. Once it was considered courteous, when writing letters, to use the addressee's surname + the title *-sama* and only the personal name for the sender, e.g. an addressee would be *Saito sama* [Mr. Saito] and the sender just *Saburo*. Older generations may still conform to this convention. It is well known that not just in Japanese but in English as well, the use of surnames or personal names is a function of the degree of familiarity.

In order to refer to the hearer one must make a choice between surname or first name, or personal pronouns (*anata* [you], etc.). In the Japanese speech community (especially so in the standard variety) *anata* can hardly ever be used towards a superior, and it is customary to use a title attached to a surname or name. In a similar way, in English it is considered impolite to use the third personal pronoun (he, she) for anyone present in the situation [REFERENCE TO CH. 2, NOT TRANSLATED, BP].

The avoidance of elements of direct reference when manifesting respect to an addressee must also be mentioned. Instead, one can employ defeential terms to refer to actions, states, objects, people and facts pertaining to the addressee (e.g. *kando no goshaichoo wa dochira e itasharu n desu ka*, ['Where will your next business trip [DEF] be [DEF]']). In some cases Humble forms are employed with an eye to actions and states of the addressee (*chikai uchi ni o niwa o haiken ni ikagimasu*, ['I shall come and visit [10M] your garden [DEF] soon']).

8) Interjections and replies: some of them connote harsh or arrogant stances, others are polite.

Naa na, ne, oi, oi! [all these roughly correspond to 'hey!'], *kora* [hey you there!], *korakora* [hey, hey!], *moshimoshi* [hello].

¹¹ Prof. Minami explains that the meaning is equivalent to the more common *-te yaru* (BENEFACTIVE to subordinate addressee). It was once used by high-ranking samurai toward their subordinates, and it is currently used only as a joke (personal communication, 14/10/03).

Anoo, un, ee [Well, ahem, etc....] [HESITATION NOISES]
Anoo, ee, un [yes], *oo* [yeah], *hai, haa* [yes], *ha* [+glottal stop], *hee* [really?]
ie, ya, un [no].

9) Phrase-final particles and interjections.

Naa, na, nee, ne, ka, kai, wa, ze, zo, no, yo, saa, sa [MODALITY MARKERS].

- 10) Choice of general vocabulary, such as synonyms in either *wago* [native words] or *kango* [Sino-Japanese words], or *wago* and *kango* vs. loanwords from European languages: *asu/ashita* – *myoonichi* [tomorrow]; *kotoshi* – *honnin* [this year]; *yurusu* – *kyōka suru* [permit, allow]; *nagagutsu* – *hirusu* [boots]; *shakuyōnin* – *tenanto* [tenant]. Also, the use of vocabulary specific to colloquial or written style: *moo/mohayo* – *sudeni* [already]; *tatta* – *wazuka* [only]; *yatto* – *karoojite* [finally]; *kanaito/omowasan* – *tsunna* [twice]; *shujin/damassan* – *otto* [husband].

The use of child vs. adult speech, for example kindergarten terms such as *oekaki* [drawing], *ohajimari* [beginning], *omorashi* [wetting the bed], or *an'yo* [walking], *tacchi* [standing], *nemue* [sleeping].

- 11) The difference between patterns of the colloquial and written styles is also relevant to sentence structure. A typical example is the use of either the *-te* form or the verb stem [INFINITIVE FORM, -i, -e] for clause chaining.

Ammowadao rokugi ni okite, T-machi ni dekaketai
 get up [INFINITIVE]

Ammowadao rokugi ni oki T-machi ni dekaketai
 get up [INFINITIVE]

[yesterday, I got up at 6 and went to 1 town]

In relation to this we must also consider the use of several particles: *nite, ni oite, o moite* in place of *de* [LOCATIVE, INSTRUMENTAL]; *yori* in place of *kara* [ABLATIVE].

- 12) Differential usage of the following expressions: orders, entreaties, requests, prohibitions, invitations.

Imperative forms (*motto nome yo* ['drink more!'], *-te* forms (*chotto doite* ['move out of the way!'], *-nasai* [IMP AUX], *-te choodai* [BEN AUX], *-te kudasai* [BEN AUX], *-te kudasanai?* and *-te kudassimassen ka* [NEG BEN AUX INT]; *-te itadakemassen deshou ka* [NEG BEN AUX TENTATIVE INT]; *-te itadakeru to it mo desu keredo* [IDIONOMATIC PERIPHRASIS CONSTRUCTION: 'it would be appreciated if you could...']).

Na (sonna ni mita na, ['stop staring!']): -te wa (-cha) dame (ite wa dame, ['you shouldn't say it!]; mitcha dame, ['you shouldn't look!]); -mitte kudasai [NEG IMP]

- 13) Length of sentence: *Kokuritsu Kokugo Kenkyūjo* (1957) finds that longer sentences tend to be perceived as more polite.

- 14) Choice between complete sentences or omission of some elements. The former is common in intimate speech between friends, the latter among relative strangers and in formal situations.

- 15) Choice of indirect, euphemistic or roundabout expressions vs. direct expressions.

- 16) Choice of self-humbling expressions: these are said to be typically Japanese: *nanni mo gozaimasen ga* [it is nothing... (but a little thing/but please have some, BP)], *tsunaranai mono de kyoshinaku desu keredo*, [I am afraid this is really nothing special (but please accept it, BP)].

17) Similar to the previous one, there are expressions which qualify, or work as a 'preface', 'warning', or 'footnote' to, the words or actions of a speaker. For example: *kanon ni itte shimaecha* ['put simply...'], *sochoku ni mooshigerau* ['frankly speaking...'], *odenna osoku mooshiwake arimasen ga* ['I'm sorry for calling you so late phone, but...'], *Sugito* (1983) has discussed these expressions in relation to the notion of *Taijū hyōgen* [interactional expressions]. The function of these expressions is that of softening or relaxing the tone.

18) Units of speech larger than the word or the sentence, or which obtain from grouping a number of sentences together, are called *danna* [discourse] in recent research, and this level too is relevant to our discussion. It is possible to distinguish different types of discourse, and these are very tightly linked to the relation between speaker and addressee and/or the context. There are conversation patterns that begin with greetings, move on to a practical content, and conclude with other greetings. There are, however, patterns of a conversation which begin and end just with greetings, others in which one begins with the content of the business and leaves it there, others in which one does small talk. All this depends on the relationship between participants. Furthermore, depending on the type and the breath of the topic, there may be relatively clear constraints. For example, dinner table conversations, speeches at wedding parties, or [a doctor's] bedside manner.

19) From a slightly different viewpoint, we need to consider aspects of the linguistic form, i.e. sounds or characters (of the script). For example, an element can be 'contracted' as in colloquial forms, or not: *-chan, -chimau* vs. *-te shimau* [COMPLETIVE ASPECTUAL AUX], *wakamai* vs. *wakaranai* [do not understand], *soreja* vs. *soretewa* [well, then...]. As for the script, there is first of all the question of the system one can select. One can choose to use *kanji* and *kana*, *romaji*, different ranges of *kanji*, different styles of *kana* use, different conventions of *okurigana*, styles of *romaji* (Roman script), and so on.

20) Spoken vs. written varieties. Rather than the choice of colloquial or literary styles, this refers to the choice of [the channel], such as using the phone or a letter in order to contact someone.

21) The choice of which language variety (dialect) to use. This is the choice of standard over a dialect but also of a language rather than another: French, English, Japanese, etc. There are, however, many intermediate degrees of variation between the choice of a variety as a whole or only one aspect of that variety (e.g. accent only - the accent of the standard variety vs. that of the dialect).

22) A more general question is whether to speak or not (or to write or not) to an interlocutor, e.g. whether one chooses to communicate linguistically or not. We can distinguish here two cases rather different in nature. First of all, there is a question of choosing verbal or non-verbal means after establishing that communication will take place. On the other hand, one can decide to reject communication altogether. This happens when you notice that you are being approached by some hardsell salesman in the street and you run away, when you decide deliberately not to reply to a query, etc. Naturally there are also cases in which you use the language while refusing to communicate. You can hang up saying 'you got the wrong number' if you have been just called by someone with whom you don't want to talk. I read once in Nagai Kafu's diary, '*Danchokotei Nichijou*' [Dyspepsia House Days], that, in order to avoid meeting an unwelcome guest, he pretended to be his secretary and replied: 'Prof. Nagai is currently away'.

Non-verbal expressions A

<Paralinguistic elements>

23) The interjectional 'noises' [*kamoon*] used during speech. For example, the 'su' produced by the sound of breathing in (phonetically, the ingressive [*kyunai*] voiceless fricative articulated between the tip of the tongue and the back of the front teeth) and used predominantly by adult Japanese males. This frequently connotes a polite attitude. Like in the following: *sono shina wa, ainitku temaedomo no mise dewa atsukate orinassen no de gozaimasu ga, suu* [regrettably, we don't have this product in stock here]. Similarly, there is the sound *ah* [ʔɑ], uttered mostly by middle-aged males in greetings.

24) The tone of the speech, such as a formal, stiff, casual tone, or angry and harsh tone. Also, the pitch and volume of the voice.

25) The smile which accompanies the speech. There are many types of smile, and of course many of these would occur independently from the speech. What I consider relevant here is the smile consistently sustained during an utterance. This is thought to be a typical Japanese smile, whose function is that of maintaining the specific social relation (that relation which enables the exchange) between speaker and addressee. Westerners tend not to smile while speaking about a practical question, but rather at the end of the utterance. This presumably corresponds to the function of greetings.

26) Facial expressions which accompany the speech: frowning, tightening of the lips, twisting the mouth.

27) Movements of the eyes: staring at the addressee, diverting the gaze, etc. Many would agree that Japanese tend to turn down the eyes and divert the gaze from the addressee when speaking or listening to someone.

28) Bodily posture or gesture with hands, arms, or the head, which accompany the speech. Waving the hands, nodding, tilting the head a little, shaking it sideways, lifting the chin up. Some Japanese would bow whenever at the boundary of an utterance, roughly corresponding to a sentence. This is considered an expression of polite attitude.

29) The physical distance between speaker and addressee.

30) The use of pauses during the speech.

31) The medium of the conversation. Whether one talks upon meeting, or using a physical instrument such as the telephone, an intercom, a recording etc. or by conveying the message through a messenger.

<Elements of written language>

32) The print type, calligraphy style, the size of characters. For instance, writing the addressee's name without abbreviating characters, writing characters accurately because the addressee is a child, writing with care because it is a formal message or scribbling hurriedly a simple note about a little daily business to an intimate friend.

33) Ways of copying documents by hand [*shosha*]. Writing horizontally or vertically, following formal conventions, or free form.

34) The medium of the copying. Handwriting vs. typing, using mimeograph [*mooshal*] vs. normal printing, using computers or Japanese word processors.

35) The materials and tools of the copying: pens, brushes, pencils; type of paper, colour of the ink, etc.

Non-verbal expressions B

36) Clothes, for example the distinction between formal and casual clothes. Specific outfits for weddings, funerals and other ceremonial occasions; dressing for visiting people, for work, for daily life in the home, etc.

37) Use or non-use of garments: wearing or taking off a hat, the gloves, a jacket or coat, the shoes, and many other variations.

38) One's grooming [*hidashimami*] besides the dress. For example, women's use of make up or hairstyles, men's shaving and hairstyle; also, the care of the shoes, the choice of other accessories.

39) Facial expressions which do not accompany verbal expressions. Frowning, or looking serious, glancing sideways; casting a coquettish glance at someone [*shunhai*], glaring at someone, etc.

40) Smiles which do not accompany verbal expressions. Smiling at someone to acknowledge his presence from a distance, roaring with laughter, the shy smile of a failure, scornful laughter, sneering.

41) Attitudes, manners, movements. The overall formal and stiff bodily attitude adopted towards someone met for the first time to whom one must show deference; the hesitating attitude adopted when receiving a gift, or the gesture indicating attempts to refuse it [*oshikazari*]. The posture adopted mostly by middle-aged men of stretching one hand out, and walking bending the hips when passing in front of someone. Also, bowing, handshaking, joining hands like in prayer, clapping hands, standing up to welcome someone entering a room, the steady straight posture adopted during ceremonies, joining hands lightly in front (as a sign of politeness), joining hands at the back (as a sign of arrogance). In many societies other than the Japanese, it is customary to exchange hugging and kissing as greetings.

42) The act of stepping aside to let someone else enter a room, or getting on and off public transport first.

43) Manners at the dinner table.

44) Norms on how to show hospitality, such as serving a full meal, just tea, or nothing at all.

45) Finally, different patterns of behaviour observable in general contact situations.

CHAPTER THREE: THE SYSTEM OF HONORIFICS.

What do Honorifics express?

Classification of Honorifics

It is rather difficult to describe in a few words the meaning and function of the linguistic expressions that we have so far referred to as Honorifics or Interactional Expressions. Of course, there are many explanations.

For example, Hatsutaroo Ootshi (1975) defines the features of Honorifics in the narrow sense (e.g. Deferential, Humble and Polite [*Teineigo*] forms (which he calls *Teichoogo*, or 'Courteous form') and Beautification forms [*Bikago*] in the following way:

Deferential forms: Expressions which convey respect to the referent (the person one talks about) and which 'raise' the status of the referent. For example, in the sentence:

Manai sensei wa kore de ii to ossharu.

[Prof. Manai says [+DEF] that this is OK.]

one is 'elevating' the referent by adding the title, and describing the action of 'saying' with the term *ossharu* [to say +DEF].

Humble forms: These are divided into two groups:

Humble forms A: Expressions which convey respect to, or 'raise' the status of, a referent's interlocutor, or the recipient of a referent's action¹² (in other words, any person(s) involved in or affected by the actions of the referent) by means of 'lowering' the referent him/herself'. For example, in the sentence:

Otaoto ga sensei ni mooshigeteru koto ni nuite iru.

[I have been decided that my brother will tell [+HUM] the professor.

one is 'lowering' the actions of the referent - one's brother - by using the term *mooshigeteru* for the act of 'saying', and thus showing respect to its 'recipient' - the professor.

Humble forms B: Expressions which convey respect to the addressee by means of 'lowering' the referent. For example, in the sentence:

Chichi wa raishuu shinchoode Kyushuu e matau hazu desu.

[My father should be going [+HUM] on a business trip to Kyushu next week.

one is showing respect to the addressee by means of 'lowering' one's father's action of 'going' through the use of the humble term *matuu*.

Polite forms (or Courteous forms) Expressions which convey respect exclusively to the addressee. Typical examples are the forms *-masu* or *-gozaimasu* but Ootshi includes here a number of other forms such as *itazu* [iri, do], as in *henna oto ga itashimasu ne* [I seem to hear a strange sound]; *moosu* [say] as in *Aobajoo to moosi shiro ga gozaimasu* [there is a castle called Aobajoo]; *matrimashita* [come, go] in *ame ga fuite matrimashita* [it started raining]; *oritimasu* [RESULTATIVE AUX] in *junbi ga totonotte oritimasu* [we are ready]; and *yoroshii* [good] in *kono hen de yoroshii deshou* [is this OK?]¹³.

¹² Note the contrast with the definition of Humble Forms B: the object of deference here is the person(s) involved in some way with the referent, rather than the addressee, in the particular situation described by the utterance, rather than in the setting of the utterance, BP.

¹³ The translation of all these sentences is not literal, hence it is not always possible to show the relation between the lexical items in isolation and in context. The common trait of all the forms, however, is that they correspond to what other traditional classifications would include in the category of humble forms.

Beautification forms Terms which make the speech polished (*ioohin*) and pleasing (*kirai*). *O-* [PREFIX] in *okashi* [sweet], *go-* [PREFIX] in *gohochi* [a reward], but also *itadaki* (when meaning *taberu* [eat]), *yasumu* (when meaning *neru* [sleep]), *oishi* [tasty]¹⁴ etc.

Apart from this classification, Honorifics can be divided broadly into two big groups:

Honorifics of the Subject Matter [*Sozai keigo*] including Deferential, Humble and Beautification forms

This underscores the fact that while the former refers exclusively to Honorifics of the referent and the 'subject matter', the latter are Honorifics which convey the speakers' respect for the addressee directly to the addressee. In other words, this categorisation highlights an important aspect of Honorifics, which is the difference between possible objects - or targets - of the speaker's attitude (here roughly described as respect).

All the aforementioned classifications (regardless of the number of categories) are invariably based on the assumption that meanings are mutually distinct - put simply, they assume that each category displays a unique distinct character. For example, Deferential forms [*Sonkeigo*] are held to represent a speaker's display of deference and relative high treatment of a referent, Polite forms [*Teineigo*] a speaker's display of deference to an addressee, etc.

An aggregate of single components

It is possible however to look at Honorifics from a different perspective, considering the meaning of each category as deriving from the assemblage of several [basic] components; as a result, there would be components which appear across several types, and some which are different. The combination of such elements will therefore be distinct in every category of Honorifics.

The following are cases which would suggest such an interpretation.

1) even within the Deferential forms, elements such as *-rareru* [DEF SUFFIX] and *o-*r-ni naru** [DEF AFFIXES] can appear regardless of whether the agent (the referent) is the addressee or a third party.

Aaa kaku wa isu koehira ni kaeraremashia ka

When did that person come back [+DEF] here?

Anata, isu koehira ni kaeraremashia ka

When did you come back [+DEF] here?

In the same way, the same terms of address *-san* [GENERIC NON-INTIMATE ADDRESS FORM] and *-sensei* [Dr., Prof., Etc.] can be used equally towards a third party or the addressee. However, some Deferential forms can be used only towards the addressee, as e.g. *ki-*ki** [your opinion], *kitoko* [your school], *kisha* [your company] or *hoo-* (*hoonai*) [your name]. In view of this evidence, it's easy to imagine that forms such as *ki-* or *hoo-*, while sharing some features of other Deferential forms, also share some features of Honorifics of the addressee. They possess some features of both Honorifics of the Subject Matter and Interpersonal Honorifics. Cases in which the honorific suffix *o-* is attached to adjectives

¹⁴ Oishi's point, and Minami's, is that these examples demonstrate a functional shift in the forms mentioned, and highlight the strategic use of (typically) referent forms as addressee forms, BP.

as in *omiyakashi* [dear/sweet (memory)] or *ourayamashii* [envious] can be considered in a similar way, as these forms are mostly used about an addressee.

2) If we observe further how Deferential forms are really used it is clear that in many cases it is not just a matter of the speaker's concern towards a referent (different from addressee). For example, the following sentences are very common in daily use.

1. A talks to B.

A: *O-taku no hoshikan wa, kono haru, chugakukai obairini natta n desu ne.*

Your [+DEF] son has entered [+DEF] junior high school this spring, hasn't he?

B: *Hai, soo desu.*

That's right.

ii. A talks to C when B is not present.

A: *B san no matako wa, kono haru, chugakukai hatita n datte.*

I hear that B's son has entered junior high school this spring.

C: *Aaa, soo?*

Is that so?

What is the object of concern in this case, with regards to the use of Deferential elements, is not only the referent B's son, but also the relationship between the addressee and the referent's son and the relationship between A and B. Because of this, we need to consider the concern towards the addressee also in the presence of common Deferential forms [Honorifics of the referent, BP].

3) The category of Humble forms includes verbs such as *itadaku* [receive] or *sashiyageru* [give] (which Oishi labels Humble forms A) and verbs such as *itasu* [do], *matu* [go], *moosu* [say] and *zonzuru* [know] (Oishi's, Humble forms B). However, Yutaka Miyaji (1971) observing the use of *itasu* [do] in sentences such as *karega otaize itahimasu* [he will visit [+HUM] (someone)] makes the following considerations. *Itasu* probably encompasses the speaker's concern for the listener (a speaker's regard for the addressee), in fact, it is most often used in conjunction with the Polite suffix *-masu*. Moreover, even when *-masu* is not directly conjoined to *itasu*, this Polite suffix often appears on the main predicate of the sentence which contains *itasu* (e.g. *sono sagyo wa watakehidomo ga itasu yobai de gazamazu* [it has been decided [+SUPERPOL] that we will carry out [+HUM] *itasu* job task]). Consequently we must recognise the 'Polite form' [*Teineigo*] component in *itasu*. On the other hand, its nature clearly fits very well that of Oishi's category of Humble forms B, and therefore we must conclude that it really has a double nature, which includes some Polite [addressee-based, BP] components as well as Humble [referent-based, BP] components.

Analysis of single components

The above considerations demonstrate that the components of the various types of Honorifics are not necessarily a straightforward matter and that it is possible - or rather necessary - to produce a more fine-grained analysis of honorific components.

Many, like Miyaji on the verb *itasu* above, have speculated on the nature of honorific meanings. Tsujimura (1969) discusses the two categories he distinguishes in the Deferential Forms: *Zetiai jooi shitaigo* [lit. Terms for Absolutely Superior Actors]¹⁵ (e.g. *trassharu* [go, be, come], *ossharu* [say], *o-*r-ni naru** [DEF SUFFIX], etc.) and *Kankei jooi shitaigo* [lit. Terms for Relatively Superior Actors] (e.g. *kudazaru* [give], *o-*r-kudazaru**

¹⁵ Here, the term *shitari* is translated as 'actor' rather than the more literal 'subject', in order to avoid confusion with the notion of grammatical subject.

[DEF SUFFIX], etc.). This distinction illustrates cases in which, after having established that actions or states of a subject are to be given a 'high' treatment, a distinction is made as to whether the actions or states of a superior subject are described in absolute terms, unrelated to any other person, or in the relative terms of a benefi-ent-bearing¹⁶ connection. The same distinction is proposed for the Humble forms: *Zettai kai shinaigo* [lit. Terms for Absolutely Subordinate Actors] (Ooishi's Humble forms B) and *Kankei kai shinaigo* [lit. Terms for Relatively Subordinate Actors] (Ooishi's Humble forms A). It is easy to detect also in Tsujimura's approach an attempt to analyse the content of Honorifics in further detail.

The American linguist Samuel E. Martin¹⁷, in a study on the Honorific systems of Japanese and Korean, proposes that the Japanese system is classified into: 1) an axis of address, 2) an axis of reference, 3) donatory verbs and 4) euphemistic verbs; these display contrasts between plain and polite forms (included in the first group) and between display and exalted forms (included in groups 2, 3 and 4). This approach, like the previous one, has the potential to proceed towards further distinctions of detailed meanings.

My proposal

Constitutive elements of meaning

I will present my analysis based on the assumption that the meaning of Honorifics has the nature of an agglomerate. The background to this has been outlined in the first chapter (broad and narrow definitions of *Keigo*) as the general nature of Honorifics. There I proposed to consider the following three features:

- 1) A kind of speaker's consideration, attention or regard for a certain object.
- 2) The evaluative attitude which always accompanies such a consideration.
- 3) Differences in the way to handle or manipulate such concern, reflected in distinctions among a variety of expressions.

An analysis of Honorifics' meanings must be able to reflect this general character and to account satisfactorily for the many complex cases illustrated above. Hence, based on the general nature of Honorifics described above, I propose the analysis of the following constitutive elements of meaning:

Consideration: corresponds to the feature mentioned in 1). The most important aspect is the object of this consideration, regard or attention, and I will return to this later.

Treatment: this will have to be distinguished into the *object* of the treatment or treatment and *manners* of treating or manipulating an object. The former corresponds to point 3) mentioned above, the latter to 2). I will return to this later.

The general structure of Honorific meanings is derived from a combination of these three elements: {consideration - object of treatment - manner of treatment}.

Moreover, with regards to such constituent elements, we must consider the following: *Participants*: the people -or equivalent entities- involved in the establishment of some form of verbal communication - focusing here predominantly on honorific expressions. We can further distinguish:

Speaker: this could be further distinguished into:

Addresser: (the direct partner of a speaker)

Main addressee: (not a direct partner of the speaker, but close to the main

Side addressee)

Others involved: earlier referred to as 'referents',¹⁸ can be further distinguished in:

Referent active: the person who carries out an action

Referent passive: the person who receives an action

Referent pastive

Communicative content: propositional aspects of the communication

Content of the subject matter: propositional aspects of the speaker's attitude

Expressive content: aspects involving the speaker's attitude

Situation: the setting in which communication takes place.

In the next section, I will turn to the factors of consideration, object of treatment, and manner of treatment.

Consideration before, this is a sort of attention on the part of the speaker, towards a As mentioned before, there are many possible objects for this attention, which give rise to certain object. There are many possible objects for this attention, which give rise to different types of consideration.

4) Consideration towards the human relationship. I will list a number of examples here, and for simplicity's sake, I will use the following convention. By writing something like: [Speaker → Speaker - Addressee], I will indicate the direction of consideration (->) and a relationship (-). In this case, the speaker is showing consideration towards him/herself and his/her own relationship with the Addressee.

(a) Speaker → Speaker - Addressee, which includes, more specifically:

Speaker → Speaker - main Addressee

Speaker → Speaker - side Addressee

Speaker → Speaker - main Addressee - side Addressee

In this case polite forms are typically selected as a sign of the speaker's regard for the addressee's status, whether a superior, subordinate or peer, intimate or non-intimate, etc. One may decide to select or to avoid forms such as *-desu* or *-masu* [POL. SUFFIXES]. This sort of regard, however, is not reflected only in the use of Polite forms, but also in the use of Deferential forms.

1. Nakamura: *Yamamura san, itsu o hikoshi ni naru ndesuka.*

Mr. Yamamura [+POL], when will you move out [+DEF]?

Yamamura: *Raigetsu no hajime ni shiyoo to omotteiru desuga.*

I'm thinking of moving next month.

ii. Nakamura: *Yamamura wa raigetsu hajime ni hikoshi suru yodoku yo.*

It seems Yamamura [-POL] will move out [-DEF] next month.

Oomura: *Sooka jaa, moo sugi da na.*

I see. That's quite soon, isn't it?

¹⁶ This observation refers to the use, in the 'relative' category, of Humble auxiliaries belonging to the set of 'Giving-Receiving' verbs: *itadaku* [receive], *kudasaru* [give, as in 'someone gives to subordinate'] etc., BP.

¹⁷ Martin, Samuel, 1964 *Speech levels in Japan and Korea, Language in Culture and Society*, New York, Harper & Row, BP.

¹⁸ Minami F. et al 1974 *Keigo no tanki* [The structure of Keigo] in Hayashi S. and Minami F., *Keigo no Tanki*, Keigo Kozza I [Keigo course vol. 1], Meiji Shoin translates *Doosakuin* (Agent) and *Hidousakuin* (Patient) respectively with 'Referent Active' and 'Referent Passive', so his terminology has been adopted here.

The reason why there is a need to distinguish between main and side addressee is illustrated by cases such as the following: (Iloo = speaker, Gotoo = main addressee, Katoo = side addressee).

i. (in a context where Gotoo is also present)

Iloo: *Gotoo kan no otoko-san wa, kongestamatai taini sarete suokaku.*
Mr Gotoo's [+DEF] father [+DEF] will probably leave the hospital [+DEF] at the end of the month.

Katoo: *Hoo, sorewa yokatta na.*

Oh, that's good news!

ii. (in a context where Gotoo is not present)

Iloo: *Gotoo no oyajisan wa, kongestamatai taini suru sookaku.*

Gotoo's [+DEF] father [+DEF] will probably leave the hospital [+DEF] at the end of the month.

Katoo: *Hoo, sorewa yokatta na.*

Oh, that's good news!

Here, the existence of a side addressee becomes the condition for the appearance of several Deferential elements (e.g. the deferential verbal suffix *-sarete* or the noun suffixes *o-N-san* or *-kan*, vs. the simple verb *-suru*, use of names without Honorifics etc.):

- (a¹) Speaker → Speaker – Referents, which includes:
 Speaker → Speaker – Agent
 Speaker → Speaker – Patient
 Speaker → Agent – Patient
 Speaker → Addressee – Agent

(a²) Speaker → Addressee – Referents, including:
 Speaker → Addressee – Agent

Speaker → Addressee – Patient

Regarding the consideration for the relation between the speaker and other participants or between the addressee and other participants, the distinction between agents and patients normally associates agents to Deferential forms (*-rareru*, *o-N-ni naru*, etc.) and patients to one type of Humble forms (Oishi's Humble forms A: *-te ageru*, *-te sashiyageru*, *o-V-suru*, etc.). For example, in the sentence:

Yumi chan, okuyakusama ni ozabaton o dashite sashiyagenasai.

Yumi, please give [+HUMBL] the cushion to the guests.

the relation between the speaker and the guests, and between the addressee (= Yumi) and the guests, is presumably the object of the speaker's consideration.

(a³) Speaker → Speaker

This is the consideration a Speaker will have for him/herself. Rather than a consideration for the addressee, participants, or the content of communication or the setting (which will be discussed below), this is triggered by the speaker's own needs, such as when a woman uses feminine language, or the use of Honorifics as a status symbol.

5) Consideration towards the content of communication

(b¹) Speaker → Content of the subject matter

(b²) Speaker → Expressive content

A consideration towards the content of the subject matter can be observed in the distinction between a fact or an object which pertains to the speaker and one which pertains to the addressee (in the case of a house, one could use *otaku* if it belongs to the addressee, *setaku* if to the speaker). Consideration towards the expressive content refers to the attitude – polite or conceited – shown to the addressee.

6) Consideration towards the setting

Speaker → Setting

This is observed in the choice of forms such as *-desu*, *-masu*, *gozaimasu* in a formal situation.

(Object of treatment)

This can be distinguished into two types:

(a) Content of the subject matter refers to the participants (agents, patients), actions, the content of the subject matter and facts and objects which belong to the participants, as a states, processes, act types, and 'high' or 'low' treatment. In the common uses of Honorifics, whole. All this can receive a 'high' or 'low' treatment. In the typical ways of realising this the Deferential, Humble and Beautification forms are the typical ways of realising this type of treatment.

(b) Expressive content

This can also be defined as the speaker's attitude about the linguistic expressions. The typical example of a consideration purely for such attitude are Polite forms.

Features of the treatment

As I already mentioned, these are the features of the treatment. In the section on the general directly related to the speaker's evaluative attitude. In the section on the general characteristics of Honorifics I mentioned the following three factors as examples of viewpoints for the evaluation. Firstly, how 'high' or 'low' something or someone is estimated to be. Secondly, how intimate (close) or non-intimate (distant) something or someone is deemed to be. Thirdly, to what degree a situation is considered to be formal or informal. Focusing, therefore, on these criteria, I have examined honorific expressions and other similar expressions and I have added a number of other features.

(a) High/Neutral/Low [Age/Chunritsu/Sage]¹⁹

This corresponds to the first viewpoint mentioned above. When the object of consideration is the content of the subject matter (in particular something regarding the agent) and the manner of treatment is 'high' deferential forms are employed: *-rareru*, *o-N-ni naru*. If 'low', then Derogatory forms appear: *-yagaru*, *-kasaru*, *-me* [see Chapter on 'Honorific Expressions' 5]. On the other hand, if the object of consideration is the content of expression, and the manner of treatment is 'low',²⁰ this would typically produce Polite forms: *-desu*, *-masu*, *gozaimasu*. *-Da* should probably be best considered as neutral.

(b) Distant/Neutral/Close [Hanare/Chunritsu/Chikazuki]

This corresponds to the second viewpoint mentioned above. Simply speaking, it refers to whether there is a sense of intimacy accompanying an expression. For example, one could say that – with regards to terms of address – *-chan* would be used to someone close, *-san* in neutral circumstances, and *-sama* or *-dono* to someone distant. Furthermore, it is possible that certain distinctions within the Deferential forms are based on this feature: *-rareru* as neutral (or distant) vs. *-nasaru* as close. It is particularly useful to consider this feature when accounting for the form *-nasaru*, including its addressee-imperative form *-nasai*.

(c) Formal/Neutral/Informal [Aratamaru/Chunritsu/Kudake]

¹⁹ The English translation of this terminology is also reproduced *verbatim* from Minami's 1974 work quoted in the previous footnote.

²⁰ In this context 'low' needs to be understood as 'humble' rather than 'diminishing' of an object.

This corresponds to the third viewpoint mentioned above. The use of the polite *gozaimasu* would reflect a 'formal' treatment of the expressive content. *-Desu* and *-masu* would represent a 'neutral' treatment and *-da* an informal (or non-formal) treatment. *Myoozichi* [tomorrow] would correspond to a formal treatment, and *asu* to a neutral one. Besides the fundamental features seen above, we could consider the following additional ones.

(d) Trouble(Burden)/ Neutral/Oblige [Owase/Chauritsu/O]

This comes into question when one considers if any giving or receiving is involved. Humble forms (Oishi's Humble forms B) are typical of this feature. For example, the use of *o-N-iadaku* in expressions such as *omise iadaku* [to be shown something] implies a feature of 'obligation' about the content related to the patient [sic]. A certain amount of 'burden' is implied with regards to the agent [sic].²¹

(e) Weak/Neutral/Strong [Jaku/Chauritsu/Kyo]

This is, in other words, the 'key' or 'tone' of the expression. For example, in the case of statements, *kore wa watashi no da to omou n desu keredomo* [I believe this is mine] is the 'weak' end, and *kore wa watashi no desu* [This is [+PO] mine] is neutral, and *kore wa watashi no da* [This is [+PIA] mine] at the 'strong' end. Likewise, with orders and prohibitions, *ike [go] or ikunai [don't go]* are rather strong, *kimasai [go]* and *iku no wa yamenasai [don't go/stop going]* rather neutral, *itara dou [how about going?]*, *ite karunai [won't you go [+in N] ?]* and *ikunai wa yametara [how about not going?]* are weak.

(f) Elegant/Neutral/Vulgar [Iti/Chauritsu/Shuu]

This feature coexists with several other ones and it appears in many types of honorific expression. Expressions which encompass an evaluative attitude about the language, such as in 'fine' or 'bad' language, 'polished' or 'rough' speech, are closely related to this feature. The so-called Beautification forms: *iadaku* (vs. *taberu*) [eat], *onaka* [stomach, belly], *ohana* [flower] can be said to convey a connotation of 'beauty'. The same can be said for many Deferential, Humble and Polite forms.

Among the expressions which are not conventionally included in the term Honorifics, there are some which can be considered neutral or vulgar. For instance, derogatory forms such as *-yagaru* or *-kusu* can be said to be symmetrical in many respects to the Deferential forms, and correspond to each other as poles of Elegant (Deferential) vs. vulgar (Derogatory).

(g) Indirect/Neutral/Direct [Kansetsu/Chauritsu/Chokketsu]

What I refer to with the term 'indirect' here, are different degrees of spatial and temporal indirectness in an expression. Consider cases in which one would prefer to use a title rather than directly use the addressee's name, as well as those in which one would use a euphemistic expression. Directness is conveyed by the very imperative (and prohibitive) expressions mentioned earlier: *ike [go]*, *ikunai [don't go]*.

Incidentally, this feature often emerges very clearly in non-verbal behaviour. Temporal indirectness is displayed when one hesitantly lingers on the threshold instead of entering a house straight away, despite having been invited to do so. Spatial indirectness is displayed when keeping a certain distance from an interlocutor only far enough not to become impolite.

²¹ The two terms presumably refer respectively to the 'recipient' and the 'giver' of the action, BP.

The features from (a) to (g) can be recognised in the many types of treatment of certain objects and it is not the case that one object demands only one type of treatment. The combination of the type of object of consideration, type of object of the treatment and type of feature of the treatment differs depending on the honorific component.

The structure of honorific meanings

Here I will illustrate what I mean by 'structure of honorific meanings' from the viewpoint of the components of honorific expressions. For convenience of description I will adopt this method: when objects of consideration and objects of treatment are in question I will mark them with a '+', when they are not, I will use a '-'. No distinction is made here between main and side addressee.

For the feature of treatment I will, for instance in the case of 'high/neutral/low', consider 'high' as the representative term, and use a '+' to indicate 'high', '-' for 'low', and '+' for 'neutral'. Similarly, 'formal' represents the 'formal/neutral/informal' group, a '+' indicates 'formal', '-' 'informal', and '+' 'neutral'. Table 2 illustrates how all the groups are organised.

		+	±	-
High [Age]	High [Age]	Neutral	Neutral	Low [Age]
Distant [Honori]	Distant [Honori]	Neutral	Neutral	Close [Chikazuki]
Formal [Treatment]	Formal [Treatment]	Neutral	Neutral	Informal [Kudake]
Trouble [Owase]	Trouble [Owase]	Neutral	Neutral	Oblige [OI]
Weak [Jaku]	Weak [Jaku]	Neutral	Neutral	Strong [Kyo]
Elegant [Iti]	Elegant [Iti]	Neutral	Neutral	Vulgar [Shuu]
Indirect [Kansetsu]	Indirect [Kansetsu]	Neutral	Neutral	Direct [Chokketsu]

Table 2: Symbols for the features of treatment

Let us now first look at Honorifics in the narrow sense: Deferential forms, Humble forms, Polite forms and Beautification forms are illustrated in Table 3. Some other non-dedicated, general forms are illustrated in Table 4. Table 5 shows that the same 'manipulations' can be conducted on non-verbal expressions.

Object of consideration	BEAUTIFICATION forms													
	POLITE forms 2: gozaimasu	POLITE forms 1: -desu, -masu	HUM forms B 2: -hei, -setsu, -gu	HUM forms B1: -iasu, zonzuru	HUM forms A2: -sasete	tiadaku	HUM forms A1: mooshageru -te sabageru	DEF forms 3: ki-, gyoku-	DEF forms 2: -ie	DEF forms 1: o-V-ni kudasanu	naru, -sama, -taveru			
S → S-A	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-RA	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-RP	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → AG-RP	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → A-RA	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → A-Rp	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-CONTENT	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-SETTING	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Content related to RA	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Content related to Rp	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General content	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expressive content	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High [Age]	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Distant [Honore]	+	±	±	±	±	±	±	±	±	±	±	±	±	±
Formal [Aratamari]	+	±	±	±	±	±	±	±	±	±	±	±	±	±
Trouble/Burden [Owase]	±	-	-	-	-	-	-	-	-	-	-	-	-	-
Weak [Jaku]	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Elegant [Bi]	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Indirect [Kansetsu]	±	±	±	±	±	±	±	±	±	±	±	±	±	±

Table 3: Structure of Honorific meanings (Narrow definition)
 S = SPEAKER, A = ADDRESSEE, RA = REFERENT ACTIVE, Rp = REFERENT PASSIVE, AG = AGENT

Object of consideration	Common linguistic expressions													
	REQUESTS 2: -shite tiadakeru to tin desu keredo, etc.	REQUESTS 1: -nasai, -irasshai, etc.	VOCABULARY 2: children's (vs. adults') speech	VOCABULARY 1: Sino Japanese (vs. Japanese)	RESPONSES/INTERJECTIONS 2: korokora, oo, iya	RESPONSES/INTERJECTIONS 1: moshi moshi, hai, iie	DEROGATORY: -yaganu, -kasaru, -me							
S → S-A	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-RA	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-RP	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → AG-RP	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → A-RA	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → A-Rp	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-CONTENT	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-SETTING	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Content related to RA	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Content related to Rp	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General content of subject matter	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expressive content	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High [Age]	+	±	±	±	±	±	±	±	±	±	±	±	±	±
Distant [Honore]	+	±	±	±	±	±	±	±	±	±	±	±	±	±
Formal [Aratamari]	+	±	±	±	±	±	±	±	±	±	±	±	±	±
Trouble/Burden [Owase]	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Weak [Jaku]	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Elegant [Bi]	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Indirect [Kansetsu]	±	±	±	±	±	±	±	±	±	±	±	±	±	±

Table 4: Structure of Honorific meanings (Common linguistic expressions)
 S = SPEAKER, A = ADDRESSEE, RA = REFERENT ACTIVE, Rp = REFERENT PASSIVE, AG = AGENT

	INTERJECTION <i>sum</i>	The VOICELESS	Handwritten letters	Printed letters	Formal clothing	Casual clothing	Hesitant attitude
Object of consideration							
S → S-A	+	+	+	+	+	+	+
S → S-RA	-	-	-	-	-	-	-
S → S-Rp	-	-	-	-	-	-	-
S → AG-Rp	-	-	-	-	-	-	-
S → A-RA	-	-	-	-	-	-	-
S → A-Rp	-	-	-	-	-	-	-
S → S	-	-	-	-	-	-	-
S → S-CONTENT	-	-	-	-	-	-	-
S → S-SETTING	+	+	+	+	+	+	+
Object of treatment							
Content related to RA	-	-	-	-	-	-	-
Content related to Rp	-	-	-	-	-	-	-
General content of subject matter	-	-	-	-	-	-	-
Expressive content	+	+	+	+	+	+	+
Features of treatment							
High [<i>Age</i>]	-	±	+	+	+	-	-
Distant [<i>Hedate</i>]	+	-	+	+	+	-	+
Formal [<i>Aratamari</i>]	+	±	+	+	+	-	+
Trouble/Burden [<i>Owasse</i>]	±	±	±	±	±	±	±
Weak [<i>Iaku</i>]	+	±	+	+	+	±	+
Elegant [<i>Bi</i>]	+	±	+	+	+	±	+
Indirect [<i>Kansetsu</i>]	+	±	±	±	±	±	+

Table 5: Structure of Honorific meanings → (Non verbal expressions)
 S = SPEAKER, A = ADDRESSEE, RA = REFERENT ACTIVE, Rp = REFERENT PASSIVE, AG = AGENT

By looking at the analysis of single detailed components of honorific meanings in these tables, it is easy to see similarities and differences between these components. Not just similarities but differences too are evident even within the single group of Deferential forms: That Deferential and Polite forms show some differences is obvious, yet we can also observe some parallelisms. The same applies to items among the Humble forms and between Humble and Polite forms.

Furthermore, it is possible to show clearly to what extent conventional Honorifics and more general honorific expressions overlap, and likewise how much verbal and non-verbal expressions have in common.

Expressive devices

Expressive devices (*high vs. low*) relationships
Upper vs. lower (high vs. low) relationships or mechanisms are used to convey honorific meanings. It should be possible to list some general features common to verbal and non-verbal behaviour, and observable in Japanese as well as in other linguistic communities.

For instance, many of the honorifics which constitute Deferential forms use mechanisms which 'raise' the object, e.g.: *gokoohai* [your good offices], *gokoozetsu* [your opinion], *hahaue* [mother], *-te kudazaru* [HUMBLE BEN AUX]²¹. On the other hand, there are many expressions among the Humble forms which 'raise' the interlocutor by 'lowering' the speaker: *-te sashiageru* [HUMBLE BEN AUX], *-te mooshigerau* [HUMBLE AUX], *teijoo suru* [offer, present]²², etc. are examples. There is clearly a principle of 'upper vs. lower' (high/low) relationship at work in these forms. In English, expressions based on this criterion would be something like 'Your Highness' (*derika*). To be sure, in non-verbal expressions one would bow (lower his/her head), or make a gesture to the effect that one is holding something up reverently, upon receiving it. There is indeed a similar principle at work. It is understandable that the high vs. low relationship used as an expressive tool directly reflects the 'high/neutral/low' relationships of the features of treatment in the structure of honorific meanings illustrated before, and that these traits are not rare among Honorific expressions as a whole.

It is, of course, necessary to consider the two dimensions of, respectively, relationships of 'upper vs. lower' ('high/low') used as expressive devices, and 'upper/lower' as features of treatment within the structure of honorific meanings separately. Irrespective of whether something is 'high' or 'up' or 'raised', these elements originally indicated a physical hierarchical relationship. This use has in a way been 'diverted' in order to express hierarchical relationships among the honorific meanings.

The same applies to the lowering of the head or of the whole posture. However, there are many intermediate degrees among these forms, ranging from those with a strong conventional nature, to those with a more natural character. The lowering of the posture is a relatively natural feature, and it is observed not only among

²¹ In writing, the first two terms include the character for 'high' [高], the term for mother (母) includes the character for 'above' [上], and *kudazaru* (下さる) is written with a character indicating descent from above [下]. BP.

²² In writing, *sashiageru* (差し上げる) and *mooshigerau* (申し上げる) both make use of the character indicating a movement from low to high, and 'to offer' (呈上) indicates the target of the offer as 'above' [上]. BP.

humans but also in the animal realm, such as in the case of the posture that subordinate Japanese monkeys assume during the 'mounting'.

Before vs. after, big vs. small etc.

Many other features of expressive devices beside 'high vs. low' can be imagined. I would intuitively include at least the following:

1) Up/down (high/low), as described above.

2) Preceding/following (before/after).

The person 'raised' is also given precedence of others when listing them together (e.g. *Sato san to Watahi* [Mr. Sato and I, Mrs. Cook and I]). Admittedly, this habit is not as strong in the Japanese speech community as it is in the English. In the case of non-verbal expressions, one can think of the order of precedence in entering a room, getting on and off public transport, or table service. Western 'ladies first' etiquette is a typical example.

3) Big/small. People one 'raises' are big, those one 'lowers' are small. Among verbal expressions, terms in which this feature is demonstrated to the extreme are *taitei* [you], *shoosai* [I], *shoosha* [my company]²⁴. In paralinguistic behaviour *taitei* [smaller characters]. Possibly related to this feature in the area of independent non-verbal expressions are the fact that the posture with hands together at the back connotes an arrogant attitude while that with hands together in front connotes a polite attitude.

4) Elegance/vulgarity and excellence/subordination. *Gyokko* [your manuscript], *hojoo* [kindness], *reijoo* [your daughter], *kisha* [your company], *heshia* [my company], *setaku* [my house], *gusoku* [my son]²⁵, illustrate the case on the level of verbal expressions. The assessment of what constitutes elegance/vulgarity and excellence/subordination varies in different societies. In the case of paralinguistic behaviour, it has been observed that Japanese women raise the pitch of their voice in formal situations. However one cannot conclude that because this feature is considered appropriate in Japan, the same applies to other societies. In my experience, in the English speech community, a lower voice is generally produced when aiming at an elegant effect. As for independent non-verbal expressions, it seems that one can generalise that quiet actions are accepted more easily than loud ones.

5) Direct/indirect and immediate/hesitant. This is observed in many circumstances and in many forms. In general, when treating someone as 'high' or formally, features of indirectness and hesitation emerge. For instance, with regards to Deferential expressions, the fact that *-(y)arenu* (the same element also used for the passive and *jibun* [spontaneous] forms), *o-N-ni naru* or *o-N-da* [DEF. SUFFIXES] are used for an agent's actions may be due to avoidance of direct expressions in favour of those with an indirect character. Also the use of spatial deixis: *anokata* [that direction], *konokata* [this direction], for referring to persons is due to the same reason. Brought to an extreme, this can lead to a complete avoidance of the mention of agents and patients. We have already noted above the existence of many indirect expressions for orders, invitations and requests.

²⁴ Where *taitei* is the character for 'big' [大] and *shoo* the character for 'small' [小], BP.

²⁵ The character for *gusoku* [王] indicating a 'precious stone', *ho-* [芳] 'fragrance', *re-* [令] 'commanding', *ki-* [貴] 'precious', *hei-* [癖] 'settle', *setsu-* [拙] 'unskillfulness', *ga-* [愚] 'stupidity'.

It is well known that languages other than Japanese, for example English, possess many expressions of this kind (Would you mind -ing? Could you perhaps...? I wonder if you could...). There are also several non-verbal expressions. Typical examples in the Japanese speech community are the display of hesitation in entering a room or a house (you could...).

6) Consensus/dissent. Does one align to what the other is saying or does one contradict him/her? Does one conform to or resist the conventions of a society? It is often remarked that there is a very strong tendency in Japanese society towards (a display of) one's conforming to the interlocutor. There may be societies in which it is accepted that one shows dissent in appropriate places.

7) Attention/indifference. This corresponds to the use or avoidance of expressions which indicate the speaker's particular attention to the addressee or some other referent. The non-verbal instance in which this appears more clearly is the display of respect to an interlocutor, which, if put in a formula, corresponds to *kashira migi!* [eyes right!]. To a lower extent, there is the habit of turning the head towards someone when she is talking or similarly, rather than a movement of the face, the act of stopping any chat and listening quietly. It is believed that in the West the habit of turning the face towards the person who is talking is much more pronounced than in Japan.

In the case of verbal expressions, one can note the mention, in appropriate parts of the utterance, of a term for the addressee (name, title, pronoun, etc.). Whatever this means, however, will be different for different societies. It seems for instance that in English, adding a term for the addressee at the end of a greeting, call or response is considered to make the expression a considerable one (e.g. Good morning, Mr. Taylor). On the other hand, in Japanese it seems to have the effect of underscoring the intimacy between the interlocutors.

This feature seems to be very developed in some dialects. In a western dialect of Kyushu there are several terms which derive from *amaia* [you] and are used as sentence-final particles: *nata*, *kanta*, *kanta*. According to Shibata (1975), there is a strong tendency in Amami and Okinawa to add the addressee's name at the end or at the beginning of the sentence.

According to a report on the study of language use in the city of Matsue in Shimane prefecture the term *ama* is used more frequently in greetings than in other types of discourse (transactional talk, chat) (Kokuritsu Kokugo Kenkyujo 1971).

On the other hand, instances of [the behaviour of] 'ignoring an object' are also frequent, the most extreme being the rejection of communication. 8) Order vs. disorder. As canonical examples of the former, one could mention the dress code in formal occasions, or the straight posture maintained during ceremonies. The same can be observed in instances of paralinguistic expressions such as careful pronunciation and accurate ways of writing a character, styles of writing [*shoshiki*], and choice of the material for a copy of a document. In verbal behaviour, one can observe 'complete' expressions where no element is omitted, and sentences with omissions and interruptions.

9) Ornamentation vs. non-ornamentation. The 'ornamentation' of verbal expressions may include the use of the suffixes *o-*, *go-*, *mi-* etc., the use before or after a name of status-indicating titles, etc. Also, one could think of the use of complimentary expressions. *Waga shin ainaru...* [Dear...], *warewa ga itainaru eyuu...* [Our great

hero...]. My dear, etc. Using abusive terms equally could be considered as an instance of the same phenomenon of 'ornamentation'. All types of badges (ribbons, emblems, sashes, etc.), the wearing of flowers on the body, the flying of flags, the wearing of certain outfits or the use of decorations, illustrate the point at the level of non-verbal expressions. Paralinguistic features include such instances as the sustained smile expressions, conversation, an affected [*toritsukurōtai*] voice, and maybe also crocodile tears. In written language it is easy to find instances of this feature, from the manner of printing to the type of sheet, all typical instances of ornamental features.

The application of all these features from 1 to 9 is socially-based. Differences would be produced by the choice of the object of consideration, or by the type of evaluative attitude attached to it. For instance, in Japanese, many expressions are derived from the use of individual features such as the verbal display of relations of upper vs. lower (high vs. low), direct vs. indirect (immediate vs. hesitant), orderly vs. disorderly, etc. It is possible that this is in some sort of relation to the cultural patterns underpinning Japanese society. In concrete terms, one could mention the strong awareness of distinctions between higher and lower relationships, and between formal and casual settings, the relatively passive attitude [*shōkyōkuteki shisei*] towards verbal communication which is said to be a general tendency of Japanese. More research is needed to establish these facts reliably.

Also, of all the elements mentioned here, some would perhaps be assessed in a similar way, but others would be assessed rather differently in other societies and cultures. High vs. low, preceding vs. following, big vs. small could probably be considered universal features. It is possible that the concepts of elegant vs. vulgar (excellence vs. subordination), as well as order vs. disorder, are more culturally specific.

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²⁶ The square brackets indicate my translation of the title. The round brackets indicate the English title assigned to this work and others in the list, as from a 1998 publication of the National Language Research Institute (An Introduction to the National Language Research Institute – a Sketch of its Achievements, Fourth edition) kindly provided by Prof. F. Minami.

Minami Fujio – *Keigo*¹

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CHAPTER ONE. HONORIFICS: BROAD AND NARROW DEFINITIONS OF THE TERM²

The scope of Honorifics

Discrimination of Honorifics

In daily conversation, we are constantly engaged in some form of honorific distinction. Towards certain interlocutors we would use *-desu*, *-masu*, or *-gozaimasu*:

- *Ima sanji desu.*
It is [POL] three o'clock.
- *Tegami wa watashi ga dashite okimasu.*
I shall post [POL] the letter.
- *Koko kara haitte yoroshuu gozaimasu ka*
Would it be alright [SUPERPOL] if I entered from here?

and towards other interlocutors we could probably say:

- *Ima sanji da.*
It is [PLAIN] three o'clock.
- *Tegami wa watashi ga dashite oku yo.*
I'll post [PLAIN] the letter.
- *Koko kara haitte ii kai.*
Can I [PLAIN] enter from here?

When talking about a third party, we can use either of the following:

- *Kinoo ano kata ga irasshatta.*
That person [DEF] came [DEF] yesterday.
- *Kinoo kare ga kita*
He [PLAIN] came [PLAIN] yesterday.

And again we can choose between:

- *Shikijoo ni go-annai mooshiageru.*
I shall show them [HUM/COU] the ceremonial hall.
- *Ii geka no sensei o shookai shite itadaita*
I was introduced [HUM/COU] to a good surgeon.

¹ Fujio Minami, *Keigo*. Iwanami Shoten, Publishers: Tokyo, 1987. © 1987 by Fujio Minami. All rights reserved. Translated and reprinted by permission.

² **Glossary:** the most conventional specialist terms for honorifics have been translated as follows: *Bikago* = Beautification (forms); *Keigo* = Honorifics (in a narrow sense; linguistic politeness); *Keihi hyoogen* = Derogatory expressions; *Keihigo* = Derogatory forms; *Kenjoogo* = Humble (forms); *Hibago* = Abusive forms; *Hiba hyoogen* = Abusive Expressions; *Sonkeigo* = Deferential (forms); *Sondaigo* = Arrogant (forms); *Taiguu hyoogen* = Interactional expressions; Politeness (in a broad sense), *Taisha keigo* = Interpersonal honorifics; *Teineigo* = Polite (forms); *Teichoogo* = Courteous (forms).
List of abbreviations for chapters one and three: ADJ = adjective; AUX = auxiliary; BEN = benefactive; CJE = conjectural; COP = copula; COU = courteous; DEF = deferential; DER = derogatory; FORM = formal; HUM = humble; INF = informal; IMP = imperative; INT = interrogative; NEG = negative; POL = polite; POT = potential; PLA = plain.

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or the corresponding:

- *Shikijo ni amai sizu*
I shall show them [PLAIN] the ceremonial hall.
- *ji gaku no shokai o shite mozatai*
I was introduced [PLAIN] to a good surgeon.

The speaker or writer must choose how to speak or write by assessing the conditions that

apply to the addressee or the referent of an utterance. She must continuously judge whether it is appropriate to use Honorifics towards a particular person, or under particular circumstances.

Deferential, Humble, Polite forms
In the examples listed above the distinction between elements considered to be Honorifics and those expressions which are not may appear relatively straightforward.

However, there is no general consensus on what should be included in the category of Honorifics and what is better left out. In the examples above, *amoi kuu* (that person) Japanese grammar (or School Grammar), *Mooshigaru* (to say) and *Hadaku* (to reveal) represent the category of *Kenjougō* [HUM]. Finally, *-desu*, *-masu* and *-gozaimasu* represent *Teineigo* [POL]. These categories of Deferential, Humble and Polite forms are what we consider Honorifics in the narrowest sense.

However, when we take a look at other Japanese expressions of ordinary use, it is easy to find many which share some of the characteristics of the narrowly defined Honorifics. It may thus be possible to broaden the scope of the Honorifics category.

The general character of Honorifics

I would like to begin by considering the features shared by elements of the narrowly defined Honorifics and honorifics in the common sense. We can begin by listing the following three.

Consideration [koryo, 配慮]

Firstly, we should look at the consideration for, or concern about an object, on the part of the speaker or writer (henceforth collectively: the speaker³). By the term 'consideration' I refer to something that one may be concerned about or something one pays attention to. For instance, the use of *-desu* or *-masu* often depends on a speaker's consideration for a listener or a reader (henceforth the addressee). It occurs when addressing someone who is older, socially or in some other sense superior to the speaker, or on a first encounter by adding *o-iri naru* or *-rareru* to a verb (e.g. *odakekomi naru* (to go out +DEF), *hatareru* (to decide +DEF)) one displays consideration towards the agent of the verb in question. This is so even when the agent's object of consideration is not necessarily the addressee, but a third party, as in the following examples.

- *Aoi kuu mo odakekomi narimashita*
He too has gone out [DEF].

³ The collective term used by Minami is 'sender'. This is not a neutral term in the Japanese original either, but since this text does not, after all, discuss an information-processing model, I decided to opt for the more conventional 'speaker', and below – instead of 'receiver' – 'addressee'.

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After *no shichōjo san ga kimezuresha koto de...*

This is something the former mayor has settled [POL]

It is clear that in many occurrences of honorifics what is at work is consideration for someone. However, this consideration has not necessarily to do with the *participants* of the communicative event, be that the speaker, the addressee, or the referent. Even between people who do not normally use honorifics towards each other, the speech can become more formal depending on, for example, by greetings or the terms of condolence one uses towards people who have suffered a family loss, victims of a disaster etc. In these cases one can observe consideration towards the *content* of the message. Moreover, it is This is demonstrated, for example, by greetings or the terms of condolence one uses towards people who have suffered a family loss, victims of a disaster etc. In these cases one can observe consideration towards the *content* of the message. Moreover, it is

This is demonstrated, for example, by greetings or the terms of condolence one uses towards people who have suffered a family loss, victims of a disaster etc. In these cases one can observe consideration towards the *content* of the message. Moreover, it is not unusual to use a formal register in formal situations, and *-gozaimasu*. This is similar to this, there is the phenomenon of *-desu* or *-masu* used in a written text as a letter, when addressed to someone to whom one would not use honorifics if speaking face to face. It may feel slightly odd to think that this usage results from a consideration for the letter as the *medium* (the instrument) of communication, but clearly the type of medium is a regulative condition of the use of *-desu* and *-masu*.

Evaluative attitude
As a second feature we can say that this consideration is always accompanied by some evaluative attitude on the part of a speaker. This involves an assessment of whether someone is, in any respect, in a higher or lower position (e.g. in terms of age, social status etc.), intimate or not (an old friend or a new acquaintance), whether the setting is public and formal or private and casual. The appropriate polite expression is chosen accordingly, or say that it is a sort of evaluation, or a calibration of a certain object from a certain viewpoint. It is something like offering money at a time of congratulations, in conversation, gifts offered and gifts returned, invitations and reciprocated invitations, other words the 'appraisal/appraisal' of human behaviour in everyday interactions.

Admittedly, when we talk of an evaluative attitude in connection with language use we may also be implying phenomena of different nature not necessarily pertaining to Honorifics. For example, it certainly has nothing to do with Honorifics if, when explaining something about a computer, we spend little time on basic facts when talking to a specialist and go into elementary details with a novice. Nevertheless, this reflects a kind of evaluation. Again, a measurement of sorts is needed when avoiding difficult vocabulary with a child, or when avoiding the mention of certain unsuitable topics during a meal. This last example comes closer to a question of politeness.

Needless to say, the crucial question is what sort of evaluative attitude regulates the triggering of polite expressions. We need to establish what the nature of this phenomenon is. With contemporary Japanese 'ordinary' Honorifics, or honorifics in the common sense, we can identify a number of different 'perspectives for evaluation', such as the following.

1. The relative position – superior or inferior – attributed to an object. For example, the use of Polite forms [Teineigo] towards a superior, or of the Humble when talking modestly about members of one's circle.

2. The relative distance – intimate, friendly (close) or non-intimate (far, removed) attributed to an object; the social or psychological distance. In general, when someone is regarded as non-intimate, relatively polite forms are used.
3. The degree of formality of a setting. The more formal the setting, the more likely the use of polite forms.

Appropriate use of linguistic expressions
The third feature we must mention includes the diverse possible ways of 'treating' a certain object based on the aforementioned evaluative attitude and consideration, and the existence of distinct expressions that reflect those diverse manners of treatment, and the instance of a distinction in the use of expressions, one can think of terms such as *keo* [face PLAIN] vs. *okao* [face +DEF. PREFIX], but at times we can distinguish three or four different levels. For example, the following sentences are interestingly polite.

<i>Kono hana wa sarabia da</i>	
<i>Kono hana wa sarabia desu</i>	This flower is salvia. [PLAIN(COPLA)]
<i>Kono hana wa sarabia de gozaimasu</i>	This flower is salvia. [POLITE(COPLA)]
	This flower is salvia. [SUPERPOLITE(COPLA)]

It is difficult to say whether it would be acceptable to talk of Honorifics if the speaker referent, the content of communication or the setting, yet in the absence of an addressee, a ratings or of expressions that reflect them. For example, imagine a situation in which all expressions become obsessed with Honorifics, and started indiscriminately using *gozaimasu* [COP +SUPERPOLITE] to any of the participants, or in any setting. Actually, something like this is happening to at least a part of the system of one language. It is well known that in many contemporary European languages a distinction exists in second person pronouns which roughly corresponds to *omae, kimi* [you = I] and *anata* [you = *hou/ye* has been lost and only *you* survives today. With regards to second person pronouns one can say that European languages such as French and German have polite expressions in a general sense but English does not.

Broadening the range of Honorifics

The existence of a consideration

The three characteristics seen above have been formulated on the basis of a narrowly defined notion of Honorifics, but it is easy to apply them to other items of similar nature. For example, while *gozaimasu* [COP] is said to be more polite than *desu* [COP] or *-masu* [FORMAL VERBAL SUFFIX], it also includes a connotation of *formality*. When it comes to formality, *myoomeichi* is more formal than *ashitadasu* [tomorrow]; *sakujisu* is more formal than *kinoo* [yesterday]. The use of *myoomeichi* or *sakujisu* often reflects a regard for a setting, or the evaluation of a setting as formal. *Myoomeichi* or *sakujisu* are not, strictly speaking, considered to be Honorifics, yet they do share common characteristics with *gozaimasu*. In the case of response forms [akete/oi no kataha, or ootokoshi], we also have distinct forms such as *hai, iie* [yes, no +FORM] and *un, iya* [yes, no +INFORM]. The underlying discriminating factor is often the evaluation of the degree of intimacy with an interlocutor.

Consideration for, and evaluation of the relationship with the interlocutor, as well as the setting, can be detected here as well.

In the case of orders and requests, there are indeed numerous alternative forms:	
Bring it quickly	[IMP INF]
"	[BEN DEF]
"	[BEN DEF INT]
"	[BEN DEF INT NEG POL]
"	[BEN DEF INT NEG CIEG INT]
"	[BEN DEF INT NEG FORM CIEG INT]

<i>Hayaba mite kite choudai</i>	
<i>Hayaba mite kite baidesai</i>	"
<i>Hayaba mite kite itadesuwaenai?</i>	"
<i>Hayaba mite kite itadesuwaen ka?</i>	"
<i>Hayaba mite kite itadesuwaen ka?</i>	[BEN DEF INT NEG CIEG INT]
<i>Hayaba mite kite itadesuwaen deshou ka?</i>	[BEN DEF INT NEG FORM CIEG INT]

many in Japan use greetings towards strangers but not members of the family.

negative Honorifics
negative Honorifics [included in the honorifics], we can have a different approach. The expressions which we define as 'Honorifics' most often are used to elevate a superior addressee or a superior referent, or those in which we use ourselves in order to treat others deferentially. We may also include those which we use to treat an addressee or referent as socially or psychologically distant (so not to become too close and friendly), or those used to mark a situation as formal. One can imagine, however, the existence of expressions based on the opposite type of consideration or evaluative attitude, and it is indeed not difficult to find them.

Expressions of contempt or insults towards the addressee or the referent amount to a diminishing treatment. For example, *-shiyagaru* [to do +DER], *-shite ketsukaru* [to do +DER], *-me* [+DER SUFFIX] [jijime [old buffer], *aitasime* [the +DER]], etc. are referred to as *kaiti hyogon* [Derogatory expressions], or *hiba hyogon* [Abusive expressions]. Another case is that of self-enhancing expressions in which the speaker doesn't use [the expected] self-enhancing expressions but chooses a rather arrogant tone: "*orezama ga ...-shite rakusawa*" [I ARROGANT do +BEN ARROGANT]. It may seem inappropriate to call these expressions 'Honorifics'. However they do share their same general character, though they are directed in the opposite sense. We could call them, metaphorically, *negative Honorifics*.

Non-verbal expressions

So far we have examined only verbal expressions. However, non-verbal expressions also share some of the same characteristics. For example, in Japanese communities, the act of bowing is considered a rather polite expressive mode. Surely there is something in common between this action and the use of a polite linguistic term. The sense of intimacy with an interlocutor can be expressed with words but also with a smile. Kindachi (1964) already discusses extensively cases of non-verbal expressions in verbal communication,

but recently the relation between verbal and non-verbal expressions has become a popular topic of research.

We can divide non-verbal expressive behaviour in two groups: behaviour which simply accompanies verbal expressions [*zuihanteki hyogeno hyoogen*] and that which can occur independently of it.

As an example of the former, consider the quality of the voice. Nomoto (1974) notes that female speakers of Japanese tend to raise their pitch when adopting a formal speech level. One could also mention interjections interspersed in speech. For example, many people utter a noise at the end of a formal greeting: *Kono tabi wa makoto ni omedeto gozaimasu. Ah!* ['Many happy returns on this occasion. Ah!']. We can also mention facial expressions or laughter during a conversation. Many other examples can be seen in the written language. The type of epistolary style adopted, the choice of a brush or a pen, the type of paper, are just a few.

In connection with the type of non-verbal behaviour which can occur autonomously one could list bowing, shaking hands or other gestures, type of outfit, accessories (a hat, gloves, etc), gift offers, and so on. Also in these instances it is possible to talk of a consideration and evaluative attitudes towards a specific object, and expressive forms that reflect them. Such consideration is what is conveyed by a choice: to dress up slightly when visiting a superior, or to stand up to greet one's superior when he enters the room.

Types of classifications

As we just saw, Honorifics can be conceived of as honorific expressions in a narrow sense, or as a broader category which includes forms similarly characterised. There may well be, therefore, different views as to what exactly should be studied in this connection. If we summarise these views we obtain Table 1. [...] In this table a '+' marks something which is considered relevant, and '-' something which is not.

Forms of Expression	A B C D E F					
	Dedicated honorific expressions	+	+	+	+	+
Common verbal expressions	-	-	+	+	+	+
Non-verbal expressions	-	-	-	-	+	+
Content	Derogatory, Arrogant etc.	+	+	+	+	+
		-	+	-	+	+

The view of Honorifics exemplified in type A investigates Honorifics in the narrowest sense. This includes what has frequently been referred to, in 'School Grammar', Deferential, Humble, and Formal linguistic forms and a few other elements. This is the area of Honorifics commonly investigated in the field of Japanese language studies.

Types B, C and D include wider ranges. Some scholars (e.g. Ooishi 1971) refer to these as *keii hyogen* [expressions of polite intentions].

* This sound is transcribed as [ʔq] in Minami et al. (1974) 'Keigo no taiketsu', in: Hayashi S. and F. Minami, *Keigo Kenza* 1:71.

The term used in the world of *Kokugogaku* [National language studies] is *Taigun hyogen* [interactional linguistic expressions]⁵, and this would correspond to type D. This is a term of sufficient generalisability and heuristic power. It will be necessary to consider this term when dealing with politeness in languages other than Japanese.

Furthermore, in many speech communities other than the Japanese verbal expressions are accompanied by a variety of non-verbal expressions with which they share many features. Whether in a narrow or a broad sense, it is necessary to place Honorifics within a unified theory of communication, which includes verbal and non-verbal behaviour. This approach is represented in E or F. I know of no single term which covers both verbal and non-verbal behaviour.

In this book, by using the term: 'narrow sense Honorifics' [*kyoogi no keigo*] I will refer mostly to type A. I will refer to the broader views from B to F by talking of 'Honorifics', 'Honorific Expressions' or 'Polite expressions' [*Keigo, Keigojeki hyoogen*]. D will be indicated by the term 'interactional linguistic expressions' [*Taigun hyoogen*]. E and F, which include non-verbal expressions, will be indicated as 'interactional behaviour' [*Taigun koudou*].

Honorific Expressions

In order to look at practical examples of Honorifics I will attempt an inventory of the expressions in use in the contemporary Japanese speech community, including those mentioned so far. The category F just described - that of 'interactional behaviour' - will be divided into the following three subcategories:

- Verbal expressions (including 'dedicated linguistic forms' and 'ordinary linguistic forms')
- Non-verbal expressions A (elements which require the presence of a corresponding verbal expression)
- Non-verbal expressions B (elements which can appear independently).

Verbal expressions

These forms will be presented proceeding from the 'core' to the 'periphery' of Honorifics.

1) Deferential forms

(a) Terms to refer to actions and events, *irassharu* [be/come/go], *ossharu* [say], *masuru* [do], *meshiagaru* [eat], *-rareru* [VERBAL SUFFIX], *o/go-I-ani naru* [VERBAL AFFIXES], *o/go-I-asobasu* [VERBAL AFFIXES], *o/go-I-desu* [*da*de *gozaimasu*] [VERBAL AFFIXES], *o/go-I-kudasaru* [VERBAL AFFIXES], *-te kudasaru* [BEN AVX]. Additionally, forms such as *outsukashii*, *gorippa da* [ADJECTIVES], *gotokkari* [ADVERB].

(b) Personal pronouns and terms of address: *anata* [you], *kono kata*, *somo kata*, *ano kata*, *donata* [his/tha/which person], *otaku*, *kika* [you/Sir/Madam], *kiki* [you (to male)], *kishi* [you (to female)], *taiki* [you (to male)]⁶. All terms which include the prefix *o-* (DEF/HUM), and all those which include the suffixes: *-san*, *-sama*, *-dono* [all GENERIC NON-INTIMATE ADDRESS FORMS such as Mr., Ms., Mrs., etc.], *-chan*, *-chama*, *-kun*

⁵ Literally: 'Expressions of treatment'.

⁶ Prof. Minami kindly points out that *kiki* and *taiki* are used predominantly by male speakers to address a male and in epistolary style, with a slight old-fashioned connotation. The same applied to *kishi*, which is however used to address a female (personal communication 14/10/03).

[SUFFIXES FOR INTIMATES AND CHILDREN] -*senrei* [Prof., Dr.], -*shi* [Mr., Miss, Mrs., Ms.], etc. Professional titles: *hoo buchou* [Section Head (ol)], *Chaanzu Ojiji* [Prince Charles], *Hirari kyoo* [Sir Hillary], *Yakawa hakase* [Dr. Yakawa]. Additionally, *reiki* [another person's older brother], *reijoo* [another person's daughter], *reijujin* [another person's wife], *gosonpu* [another person's father].

(c) Terms which refer to objects and facts belonging or pertaining to someone.⁷ *Okengae* [idea/opinion], *Okaku* [home], *Goken* [opinion], *Goshokugoro* [job], *gokoosetsu* [opinion/view], *gokoochai* [good office], *kit* [wishes], *kisba* [company], *gokkoo* [manuscript], *hojyoo* [kindness], *hoomei* [name] etc.

2) Humble forms

(a) Terms to refer to actions and events: *ageru* [give], *itasu* [do], *itadaku* [eat, receive], *sashiageru* [give], *matru* [go], *mooshiagetu* [say] *haiken suru* [see], *haishaku suru* [borrow], *o/go-V-suru* [VERBAL AFFIXES], *o/go-V-itasu* [VERBAL AFFIXES], *o/go-V-moosu* [VERBAL AFFIXES], *o/go-V-mooshiagetu* [VERBAL AFFIXES], *o/go-V-itadaku* [VERBAL AFFIXES], -*te ageru* [BEN AUX], -*te sashiageru* [BEN AUX].

(b) Personal pronouns and terms of address: *watashi* [I], *watakushi* [I], *watakushidomo* [we], *temae* [I], *temadomo* [we], *shoosai* [I], *gusoku* [my son], *keisai* [my wife], *toyji* [my son], *shoonai* [my sister].

(c) Terms which refer to objects and facts belonging or pertaining to someone.⁸ *Giken* [my opinion], *shoosha* [our company], *setaku* [my house], *setsuron* [my opinion], *hiten* [my/our shop]

3) Polite forms (*Teineigo*; occasionally referred to as *Teichoogo* [Courteous forms])

-*Desu* [FORM COPULA], -*masu* [FORM VERBAL SUFFIX], *gozaimasu* [be, have], -*degozaimasu* [COPULA]. Additionally, some (Oishi 1975 etc.) include the following terms¹⁰ in this category: -*te orinazu* [PROGRESSIVE/RESULTATIVE AUX], as in *yoku wakate orinazu* ('I understand very well'); -*te mairimazu* [lit. come, INCHOATIVE AUX], as in *yuki ga fute mairimashita* ('It started snowing'); -*to itashimasu* [lit. 'doing so...'], as in *soo itashimasu* ('Then Well, in that case/I do that...') etc.; -*to zoijimazu* [lit. (I) believe that... [QUOTATION]], as in *kekko to zoijimazu* ('I believe it is OK'), -*mooshimasu* [lit. to say that... [THEMATIZATION]] as in *masu yasai to mooshimasu*... ('with regards to/it we talk about summer vegetables'), *yoroshii* [good, OK] (vs. *ii, yoi*); all forms which include *o-* [FORM PREFIX]: *oshizukana ban desu wa ne*, ('It is a quiet [Pol.] evening, isn't it?...', etc.); *achira* [there] (vs. *acchi*); *kaga* [how] (vs. *dao*), etc.

4) Beautification forms (*Bikago*)

Itadaku vs. *taberu* [eat], *taberu* vs. *kau* [eat], *gohan* vs. *meshi* [meal], *otearai* vs. *benjo* [restroom/toilet]. Also in this category: *otsumome* [job], *oyasumi* [break, holiday], *onaka* [stomach, belly], *oyatsu* [snack], *gochisoo* [delicious food], *goshu* [sake]. This category

constitutes, together with the aforementioned Deferential, Humble and Polite forms, what we commonly understand as Honorifics in a narrow sense.

5) Abusive forms (*Hibago*) and Derogatory forms (*Keihigo*)

This category includes what I referred to earlier as "negative Honorifics": *akuru* [VERBAL SUFFIX] (*shikasanu*, ['bloody doing it']), -*yaganu* [VERBAL SUFFIX] (*waraiyaganu*, [bloody laughing]), -*te yaganu* [DEROGATORY AUX] (*sumashite yaganu* [you're a snob]), *kasujiji* [old bastard], *kazooome* [little brat], *aisu* [that fellow], *daitsu* [which fellow], *kasama* [you], *teme* [you], *yatsu* [that bloke], *yatsura* [those bastards], *yaroo* [you asshole/that bastard], *ama* [bitch], *gaki* [bad kid; little shit] etc.

6) *Sondai* [Arrogant forms]

These are also considered negative Honorifics. -*te tsukerawu* [I'll do it for you]!, -*choodai suru* [BEN] (*arigataku choodai shiro* [you better accept it with gratitude], *ore-sama* [my honourable self]).

7) [This group includes all the terms of address other than those already mentioned. It concerns modes of use of particular elements. For example, it concerns whether one uses – both orally and in writing – surnames + personal names, or only one of the two. Once it was considered courteous, when writing letters, to use the addressee's surname + the title -*sama*, and only the personal name for the sender, e.g. an addressee would be *Satao sama* [Mr. Sato] and the sender just *Saburo*. Older generations may still conform to this convention. It is well known that not just in Japanese but in English as well, the use of surnames or personal names is a function of the degree of familiarity.

In order to refer to the hearer one must make a choice between surname or first name, or personal pronouns (*anata* [you], etc.). In the Japanese speech community (especially so in the standard variety) *anata* can hardly ever be used towards a superior, and it is customary to use a title attached to a surname or name. In a similar way, in English it is considered impolite to use the third personal pronoun (he, she) for anyone present in the situation [REFERENCE TO CH. 2, NOT TRANSLATED, BP].

The avoidance of elements of direct reference when manifesting respect to an addressee must also be mentioned. Instead, one can employ deferential terms to refer to actions, states, objects, people and facts pertaining to the addressee (e.g. *kondo no goshuuchoo wa dochira e irassharu n desu ka*, ['Where will your next business trip [DEF] be [DEF]?']). In some cases Humble forms are employed with an eye to actions and states of the addressee (*chikaiuchi ni o mwva o haiken ni itakemasu*, ['I shall come and visit [HUM] your garden [DEF] soon']).

8) Interjections and replies: some of them connote harsh or arrogant stances, others are polite.

Naa, na, ne, oi, oi [all these roughly correspond to 'hey!'], *kora* [hey you there!], *korakora* [hey, hey!], *moshimoshi* [hello].

¹¹ Prof. Minami explains that the meaning is equivalent to the more common -*te yuru* (BENEFACTIVE to subordinate addressee). It was once used by high-ranking samurai toward their subordinates, and it is currently used only as a joke (personal communication, 14/10/03).

⁷ Never used for the speaker or members of the speaker's circle, BP.

⁸ Always used exclusively for the speaker or members of the speaker's circle, BP.

⁹ See footnote 11 in BP's introductory chapter.

¹⁰ All of the following terms: *orinazu*, *mairimazu*, *itashimasu*, and *zoijimazu* are originally Humble forms, and Minami's point is that they can have a *Teineigo* (Polite) use as well.

Anoo, unu, ee [Well, ahem, etc....] [HESITATION NOISES]
Anoo, ee, un [yes], oo [yeah], *hai, haa [yes], ha* [+glottal stop], *hee* [really?],
ie, ya, un [no].

9) Phrase-final particles and interjections.
Naa, na, nee, ne, ka, kai, wa, ze, zo, no, yo, saa, sa [MODALITY MARKERS].

10) Choice of general vocabulary, such as synonyms in either *wago* [native words] or *kango* [Sino-Japanese words], or *wago* and *kango* vs. loanwords from European languages: *asutashita* – *myoonchi* [tomorrow]; *katoshi* – *homon* [this year]; *yurisu* – *kyōka sara* [permit, allow]; *nagagutsu* – *hautsu* [boots]; *shakuyōmin* – *tenanto* [tenant].
 Also, the use of vocabulary specific to colloquial or written style: *moo mo hoya* – *student* [already]; *tatta* – *wazuka* [only]; *yatto* – *karōjite* [finally]; *kanaitōyomewan* – *tsuma* [wife]; *shujin damasan* – *otō* [husband].

The use of child vs. adult speech, for example kindergarten terms such as *oekaki* [drawing], *ohajimari* [beginning], *omoroshi* [wetting the bed], or *an'yo* [walking], *tacchi* [standing], *nenne* [sleeping].

11) The difference between patterns of the colloquial and written styles is also relevant to sentence structure. A typical example is the use of either the *-te* form or the verb stem [INFINITIVE FORM, -*u*, -*u*] for clause chaining:
Amano wa tōru rōdōji ni idete, Tomachi ni dekaketai
 get up [+1] TOKUJ
Amano wa tōru rōdōji ni oki, Tomachi ni dekaketai
 get up [INFINITIVE]

[*yesetai*] I get up at 6 and want to I town

In relation to this we must also consider the use of several particles: *nite, ni oite, o moite* in place of *de* [LOCALITY, INSTRUMENTAL]; *yori* in place of *kara* [ABLATIVE].

12) Differential usage of the following expressions: orders, entreaties, requests, prohibitions, invitations.

Imperative forms (*motto nome yo* ['drink more!'], *-te* forms (*chotto doite* ['move out of the way!'], *-nasai* [IMP AUX], *-te choōdai* [BEN AUX], *-te kudasete* [BEN AUX], *-te kudasanai?* and *-te kudasetemassen ka* [NEG BEN AUX INT]; *-te itadakemassen deshou ka* [NEG BEN AUX TENTATIVE INT]; *-te itadakeru to ii no desu keredo* [IDIOMATIC PERIPHRASTIC CONSTRUCTION: 'it would be appreciated if you could...']).

Na (soma ni miru na, 'stop staring!'); *-te wa (-chau) dame* [the *wa* dame, 'you shouldn't say it']; *mitcha dame*, ['you shouldn't look!']; *-mitte kudasete* [NEG IMP]

13) Length of sentence: *Kokuritsu Kokugo Kenkyūjō* (1957) finds that longer sentences tend to be perceived as more polite.

14) Choice between complete sentences or omission of some elements. The former is common in intimate speech between friends, the latter among relative strangers and in formal situations.

15) Choice of indirect, euphemistic or roundabout expressions vs. direct expressions.

16) Choice of self-humbling expressions: these are said to be typically Japanese: *nanmi mo gozaimasen ga* [it is nothing... (but a little thing/but please have some, BP)], *sumaromai mono de kyōshuku desu keredo*, [I am afraid this is really nothing special (but please accept it, BP)].

17) Similar to the previous one, there are expressions which qualify, or work as a 'preface', 'warning', or 'footnote' to, the words or actions of a speaker. For example: *Kantan ni itte shimaeba* ['put simply...'], *sochoku ni mooshigetaria* ['Frankly I can't...'], *odama de shitsurei desu ga* ['It might be rude of me to tell you over the phone, but...'], *yabun osoku mooshwake arimassen ga* ['I'm sorry for calling you so late at night...']. Sugito (1983) has discussed these expressions in relation to the notion of *Taigun kyōogen* [interactional expressions]. The function of these expressions is that of softening or relaxing the tone.

18) Units of speech larger than the word or the sentence, or which obtain from grouping a number of sentences together, are called *dama* [discourse] in recent research, and this level too is relevant to our discussion. It is possible to distinguish different types of discourse, and these are very tightly linked to the relation between speaker and addressee and/or the context. There are conversation patterns that begin with greetings, move on to a practical content, and conclude with other greetings. There are, however, patterns of conversation which begin and end just with greetings; others in which one begins with the content of the business and leaves it there, others in which one does small talk. All this depends on the relationship between participants. Furthermore, depending on the type and the breath of the topic, there may be relatively clear constraints. For example, dinner table conversations, speeches at wedding parties, or [a doctor's] bedside manner.

19) From a slightly different viewpoint, we need to consider aspects of the linguistic form, i.e. sounds or characters (of the script). For example, an element can be 'contracted' as in colloquial forms, or not: *-chan, -chiman* vs. *-te shiman* [COMPLETIVE ASPECTUAL AUX], *wakamari* vs. *wakaranai* [do not understand], *soyeta* vs. *soredewa* [well, then...]. As for the script, there is first of all the question of the system one can select. One can choose to use *kanji* and *kana*, *romaji*, different ranges of *kanji*, different styles of *kana* use, different conventions of *okurigana*, styles of *roomaji* (Roman script), and so on.

20) Spoken vs. written varieties. Rather than the choice of colloquial or literary styles, this refers to the choice of [the channel], such as using the phone or a letter in order to contact someone.

21) The choice of which language variety (dialect) to use. This is the choice of standard over a dialect but also of a language rather than another: French, English, Japanese, etc. There are, however, many intermediate degrees of variation between the choice of a variety as a whole or only one aspect of that variety (e.g. accent only - the accent of the standard variety vs. that of the dialect).

22) A more general question is whether to speak or not (or to write or not) to an interlocutor, e.g. whether one chooses to communicate linguistically or not. We can distinguish here two cases rather different in nature. First of all, there is a question of choosing verbal or non-verbal means after establishing that communication will take place. On the other hand, one can decide to reject communication altogether. This happens when you notice that you are being approached by some hard-sell salesman in the street and you run away, when you decide deliberately not to reply to a query, etc. Naturally there are also cases in which you use the language while refusing to communicate. You can hang up saying 'you got the wrong number' if you have been just called by someone with whom you don't want to talk. I read once in Nagai Kafu's diary, '*Danchokei Nichijou*' ['Dyspepsia House Days'], that, in order to avoid meeting an unwelcome guest, he pretended to be his secretary and replied: "Prof. Nagai is currently away".

Non-verbal expressions 4

<Paralinguistic elements>

- 23) The interjectional 'noises' [*kamioon*] used during speech. For example, the 'suu' produced by the sound of breathing in (phonetically, the ingressive [*kyunki*] voiceless fricative articulated between the tip of the tongue and the back of the front teeth) and used predominantly by adult Japanese males. This frequently connotes a polite attitude, like in the following: *sono shina wa, ainku temadomo no mise dewa ashiakate orimasan no de gozaimasu ga, suu* [regretably, we don't have this product in stock here]. Similarly, there is the sound *ah* [ʔɑ], uttered mostly by middle-aged males in greetings.
- 24) The tone of the speech, such as a formal, stiff, casual tone, or angry and harsh tone. Also, the pitch and volume of the voice.
- 25) The smile which accompanies the speech. There are many types of smile, and of course many of these would occur independently from the speech. What I consider relevant here is the smile consistently sustained during an utterance. This is thought to be a typical Japanese smile, whose function is that of maintaining the specific social relation (that relation which enables the exchange) between speaker and addressee. Westerners tend not to smile while speaking about a practical question, but rather at the end of the utterance. This presumably corresponds to the function of greetings.
- 26) Facial expressions which accompany the speech: frowning, tightening of the lips, twisting the mouth.
- 27) Movements of the eyes: staring at the addressee, diverting the gaze, etc. Many would agree that Japanese tend to turn down the eyes and divert the gaze from the addressee when speaking or listening to someone.
- 28) Bodily posture or gesture with hands, arms, or the head, which accompany the speech. Waving the hands, nodding, tilting the head a little, shaking it sideways, lifting the chin up. Some Japanese would bow whenever at the boundary of an utterance, roughly corresponding to a sentence. This is considered an expression of polite attitude.
- 29) The physical distance between speaker and addressee.
- 30) The use of pauses during the speech.

31) The medium of the conversation. Whether one talks upon meeting, or using a physical instrument such as the telephone, an intercom, a recording etc., or by conveying the message through a messenger.

<Elements of written language>

- 32) The print type, calligraphy style, the size of characters. For instance, writing the addressee's name without abbreviating characters, writing characters accurately because the addressee is a child, writing with care because it is a formal message or scribbling hurriedly a simple note about a little daily business to an intimate friend.
- 33) Ways of copying documents by hand [*shoshu*]. Writing horizontally or vertically, following formal conventions, or free form.
- 34) The medium of the copying: Handwriting vs. typing, using mimeograph [*mosha*] vs. normal printing, using computers or Japanese word processors.
- 35) The materials and tools of the copying: pens, brushes, pencils, type of paper, colour of the ink, etc.

Non-verbal expressions B

- 36) Clothes, for example the distinction between formal and casual clothes. Specific outfits for weddings, funerals and other ceremonial occasions; dressing for visiting people, for work, for daily life in the home, etc.
- 37) Use or non-use of garments: wearing or taking off a hat, the gloves, a jacket or coat, the shoes, and many other variations.
- 38) One's grooming [*midashinami*] besides the dress. For example, women's use of make up or hairstyles, men's shaving and hairstyle; also, the care of the shoes, the choice of other accessories.
- 39) Facial expressions which do not accompany verbal expressions. Frowning, or looking serious, glancing sideways; casting a coquettish glance at someone [*shunahai*], glaring at someone, etc.
- 40) Smiles which do not accompany verbal expressions. Smiling at someone to acknowledge his presence from a distance, roaring with laughter, the shy smile of a failure, scornful laughter, sneering.
- 41) Attitudes, manners, movements. The overall formal and stiff bodily attitude adopted towards someone met for the first time to whom one must show deference; the hesitating attitude adopted when receiving a gift, or the gesture indicating attempts to refuse it [*oshiikawari*]. The posture adopted mostly by middle-aged men of stretching one hand out, and walking bending the hips when passing in front of someone. Also, bowing, handshaking, joining hands like in prayer, clapping hands, standing up to welcome someone entering a room, the steady straight posture adopted during ceremonies, joining hands lightly in front (as a sign of politeness), joining hands at the back (as a sign of arrogance). In many societies other than the Japanese, it is customary to exchange hugging and kissing as greetings.
- 42) The act of stepping aside to let someone else enter a room, or getting on and off public transport first.
- 43) Manners at the dinner table.
- 44) Norms on how to show hospitality, such as serving a full meal, just tea, or nothing at all.

45) Finally, different patterns of behaviour observable in general contact situations.

CHAPTER THREE: THE SYSTEM OF HONORIFICS.

What do Honorifics express?

Classification of Honorifics

It is rather difficult to describe in a few words the meaning and function of the linguistic expressions that we have so far referred to as Honorifics or Interactional Expressions. Of course, there are many explanations.

For example, Hattataro Ooishi (1975) defines the features of Honorifics in the narrow sense (e.g. Deferential, Humble and Polite [*Teineigo*] forms (which he calls *Teichoogo*, or 'Courteous form') and Beautification forms [*Bikago*] in the following way:

Deferential forms: Expressions which convey respect to the referent (the person one talks about) and which 'raise' the status of the referent. For example, in the sentence:

Marai sensei wa 'kore de it' to ossharu.

[Prof. Marai says [+DEF] that this is OK.]

one is 'elevating' the referent by adding the title, and describing the action of 'saying' with the term *ossharu* [to say +DEF].

Humble forms: These are divided into two groups:

Humble forms A: Expressions which convey respect to, or 'raise' the status of, a referent's interlocutor, or the recipient of a referent's action¹² (in other words, any person(s) involved in or affected by the actions of the referent) by means of 'lowering' the referent him/herself. For example, in the sentence:

Otooto ga sensei ni mooshageru koto ni natte itru.

It has been decided that my brother will tell [+HUM] the professor.

one is 'lowering' the actions of the referent - one's brother - by using the term *mooshageru* for the act of 'saying', and thus showing respect to its 'recipient' - the professor.

Humble forms B: Expressions which convey respect to the addressee by means of 'lowering' the referent. For example, in the sentence:

Chichi wa rashuu shucchoude kyushuu e mairu hazu desu.

My father should be going [+HUM] on a business trip to Kyushu next week.

one is showing respect to the addressee by means of 'lowering' one's father's action of 'going' through the use of the humble term *mairu*.

Polite forms (or Courteous forms) Expressions which convey respect exclusively to the addressee. Typical examples are the forms *-masu* or *-gozaimasu* but Ooishi includes here a number of other forms such as *itasu* [lit. do], as in *herna oto ga hashimaru ne* [I seem to hear a strange sound!], *moosu* [say] as in *Aobujou to moosu shiro ga gozaimasu* [here is a castle called Aobajou], *mairimashita* [come, go] in *ame ga huite mairimashita* [it started raining], *orimasu* [RESULTATIVE AUX] in *junbi ga totonotte orimasu* [we are ready], and *yoroshii* [good] in *kono hen de yoroshii deshou* [is this OK?]¹³.

¹² Note the contrast with the definition of Humble Forms B: the object of deference here is the person(s) involved in some way with the referent, rather than the addressee, in the particular situation described by the utterance, rather than in the setting of the utterance. BP

¹³ The translation of all these sentences is not literal, hence it is not always possible to show the relation between the lexical items in isolation and in context. The common trait of all the forms, however, is that they correspond to what other traditional classifications would include in the category of humble forms.

Beautification forms Terms which make the speech polished (*joohin*) and pleasing (*kiwai*). *O-* [PREFIX] in *okashi* [sweet], *go-* [PREFIX] in *gohoochi* [a reward], but also *itadaki* (when meaning *taberu* [eat]), *yasumu* (when meaning *neru* [sleep]), *oishi!* [asty¹⁴] etc.

Apart from this classification, Honorifics can be divided broadly into two big groups:

Honorifics of the Subject Matter [*Sozai keigo*] including Deferential, Humble and Beautification forms

This underscores the fact that while the former refers exclusively to Honorifics of the referent and the 'subject matter', the latter are Honorifics which convey the speakers' respect for the addressee directly to the addressee. In other words, this categorisation highlights an important aspect of Honorifics, which is the difference between possible objects - or targets - of the speaker's attitude (here roughly described as respect).

All the aforementioned classifications (regardless of the number of categories) are invariably based on the assumption that meanings are mutually distinct – put simply, they assume that each category displays a unique distinct character. For example, Deferential forms [*Sonkeigo*] are held to represent a speaker's display of deference and relative 'high' treatment of a referent, Polite forms [*Teineigo*] a speaker's display of deference to an addressee, etc.

An aggregate of single components

It is possible however to look at Honorifics from a different perspective, considering the meaning of each category as deriving from the assemblage of several 'basic' components; as a result, there would be components which appear across several types, and some which are different. The combination of such elements will therefore be distinct in every category of Honorifics.

The following are cases which would suggest such an interpretation.

1) even within the Deferential forms, elements such as *-rareru* [DEF SUFFIX] and *o-I-ni naru* [DEF AFFIXES] can appear regardless of whether the agent (the referent) is the addressee or a third party.

Aino kata wa itsu kochira ni kaeraremashita ka

When did that person come back [+DEF] here?

Anata, itsu kochira ni kaeraremashita ka

When did you come back [+DEF] here?

In the same way, the same terms of address *-san* [GENERIC NON-INTIMATE ADDRESS FORM] and *-sensei* [Dr., Prof., Etc.] can be used equally towards a third party or the addressee. However, some Deferential forms can be used only towards the addressee, as e.g. *ki* [your opinion], *ki kao* [your school], *kisha* [your company] or *hoo* (*hoomet* [your name]). In view of this evidence, it's easy to imagine that forms such as *ki*- or *hoo*-, while sharing some features of other Deferential forms, also share some features of Honorifics of the addressee. They possess some features of both Honorifics of the Subject Matter and Interpersonal Honorifics. Cases in which the honorific suffix *o-* is attached to adjectives

¹⁴ Oishi's point, and Minami's, is that these examples demonstrate a functional shift in the forms mentioned, and highlight the strategic use of (typically) referent forms as addressee forms, BP

as in *onatakeshihi* [dear/sweet (memory)] or *ourayamashii* [envious] can be considered in a similar way, as these forms are mostly used about an addressee.

2) If we observe further how Deferential forms are really used it is clear that in many cases it is not just a matter of the speaker's concern towards a referent (different from the addressee). For example, the following sentences are very common in daily use.

i. A talks to B.

A: *O-taku no bocchan wa, kono hoto, chugakani obentri natta n desu ne.*

Your [+DEF] son has entered [+DEF] junior high school this spring, hasn't he?

B: *Hai, soo desu.*

That's right.

ii. A talks to C when B is not present.

A: *B-san no musuko wa, kono hoto, chugakani haitta n date.*

Your [+DEF] son has entered junior high school this spring.

C: *Ara, soo?*

Is that so?

What is the object of concern in this case, with regards to the use of Deferential elements, is not only the referent B's son, but also the relationship between the addressee and the referent's son and the relationship between A and B. Because of this, we need to consider the concern towards the addressee also in the presence of common Deferential forms [=Honorifics of the referent, BP].

3) The category of Humble forms includes verbs such as *itadaku* [receive] or *sawhageru* [give] (which Oishi labels Humble forms A) and verbs such as *itasu* [do], *mairu* [go], *moosu* [say] and *zozuru* [know] (Oishi's Humble forms B). However, Yaaka Miyaji (1971) observing the use of *itasu* [do] in sentences such as *karega oizume itashimasu* [he will visit [+HUM] (someone)] makes the following considerations. *Itasu* probably encompasses the speaker's concern for the listener (a speaker's regard for the addressee). In fact, it is most often used in conjunction with the Polite suffix *-masu*. Moreover, even when *-nasu* is not directly conjoined to *itasu*, this Polite suffix often appears on the main predicate of the sentence which contains *itasu* (e.g. *sono sagyou wa watakeshihomo ga itasu yotei de gozaimasu* [it has been decided [+SUPERPOL] that we will carry out [+HUM] that job/task]). Consequently we must recognise the 'Polite form' [*Teineigo*] component in *itasu*. On the other hand, its nature clearly fits very well that of Oishi's category of Humble forms B, and therefore we must conclude that it really has a double nature, which includes some Polite [addressee-based, BP] components as well as Humble [referent-based, BP] components.

Analysis of single components

The above considerations demonstrate that the components of the various types of Honorifics are not necessarily a straightforward matter and that it is possible – or rather necessary – to produce a more fine-grained analysis of honorific components.

Many, like Miyaji on the verb *itasu* above, have speculated on the nature of honorific meanings. Tsujimura (1969) discusses the two categories he distinguishes in the Deferential Forms: *Zetui jouti shitaigo* [lit. Terms for Absolutely Superior Actors¹⁵] (e.g. *trasharu* [go, be, come], *ossharu* [say], *o-I-ni naru* [DEF SUFFIX], etc.) and *Kankei jouti shitaigo* [lit. Terms for Relatively Superior Actors] (e.g. *kudazaru* [give], *o-I-kudazaru*

¹⁵ Here, the term 'shutai' is translated as 'actor' rather than the more literal 'subject', in order to avoid confusion with the notion of grammatical subject.

[DEF SUFFIX], etc.). This distinction illustrates cases in which, after having established that actions or states of a subject are to be given a 'high' treatment, a distinction is made as to whether the actions or states of a superior subject are described in absolute terms, unrelated to any other person, or in the relative terms of a benefice-bearing,¹⁶ connection. The same distinction is proposed for the Humble forms: *Zettai kai shuigo* [lit. Terms for Absolutely Subordinate Actors] (Ooishi's Humble forms B) and *Kankei kai shuigo* [lit. Terms for Relatively Subordinate Actors] (Ooishi's Humble forms A). It is easy to detect also in Tsujimura's approach an attempt to analyse the content of Honorifics in further detail.

The American linguist Samuel E. Martin¹⁷, in a study on the Honorific systems of Japanese and Korean, proposes that the Japanese system is classified into: 1) an axis of address, 2) an axis of reference, 3) donatory verbs and 4) euphemistic verbs; these display contrasts between plain and polite forms (included in the first group) and between humble and exalted forms (included in groups 2, 3 and 4). This approach, like the previous ones, has the potential to proceed towards further distinctions of detailed meanings.

My proposal

Constitutive elements of meaning

I will present my analysis based on the assumption that the meaning of Honorifics has the nature of an agglomerate. The background to this has been outlined in the first chapter (broad and narrow definitions of *Keigo*) as the general nature of Honorifics. There I proposed to consider the following three features:

- 1) A kind of speaker's consideration, attention or regard for a certain object.
- 2) The evaluative attitude which always accompanies such a consideration.
- 3) Differences in the way to handle or manipulate such concern, reflected in distinctions among a variety of expressions.

An analysis of Honorifics' meanings must be able to reflect this general character and to account satisfactorily for the many complex cases illustrated above. Hence, based on the general nature of Honorifics described above, I propose the analysis of the following constitutive elements of meaning.

Consideration: corresponds to the feature mentioned in 1). The most important aspect is the object of this consideration, regard or attention, and I will return to this later.

Treatment: this will have to be distinguished into the *object* of the treatment or treatment and *manner* of treating or manipulating an object. The former corresponds to point 3) mentioned above, the latter to 2). I will return to this later.

The general structure of Honorific meanings is derived from a combination of these three elements: {consideration - object of treatment - manner of treatment}.

Moreover, with regards to such constituent elements, we must consider the following: *Participants*: the people - or equivalent entities - involved in the establishment of some form of verbal communication - focusing here predominantly on honorific expressions. We can further distinguish:

Speaker
Addressee: this could be further distinguished into:
Main addressee: (the direct partner of a speaker)
Side addressee: (not a direct partner of the speaker, but close to the main addressee)

Others involved: earlier referred to as 'referents'¹⁸, can be further distinguished in:
Referent active: the person who carries out an action
Referent passive: the person who receives an action

Communicative content

Content of the subject matter: propositional aspects of the communication

Expressive content: aspects involving the speaker's attitude

Situation: the setting in which communication takes place.

In the next section, I will turn to the factors of consideration, object of treatment, and manner of treatment.

Consideration
 As mentioned before, this is a sort of attention on the part of the speaker, towards a certain object. There are many possible objects for this attention, which give rise to different types of consideration.

4) Consideration towards the human relationship. I will list a number of examples here, and for simplicity's sake, I will use the following convention. By writing something like: [Speaker → Speaker - Addressee], I will indicate the direction of consideration (→) and a relationship (-). In this case, the speaker is showing consideration towards him/herself and his/her own relationship with the Addressee.

(a) Speaker → Speaker - Addressee, which includes, more specifically:

Speaker → Speaker - main Addressee

Speaker → Speaker - side Addressee

Speaker → Main Addressee - side Addressee

In this case polite forms are typically selected as a sign of the speaker's regard for the addressee's status, whether a superior, subordinate or peer, intimate or non-intimate, etc. One may decide to select or to avoid forms such as *-desu* or *-masu* [POL. SUFFIXES]. This sort of regard, however, is not reflected only in the use of Polite forms, but also in the use of Deferential forms.

i. Nakamura: *Yamamura san, issu o hikashi ni naru ndesuka.*

Mr. Yamamura [1-POL], when will you move out [1-DEF]?

Yamamura: *Kangeesu no hajimetu shiyoo to omotteiran desuga*

I'm thinking of moving next month.

ii. Nakamura: *Yamamura wa raigetsu hajimetu hikashi suru yosodesu yo.*

It seems Yamamura [1-POL] will move out [1-DEF] next month.

Omura: *Sookuu/aa, moo sugu da na.*

I see. That's quite soon, isn't it?

¹⁶ This observation refers to the use, in the 'relative' category, of Humble auxiliaries belonging to the set of 'Giving-Receiving' verbs: *itadaki* [receive], *kudazaru* [give, as in 'someone gives to subordinate'], etc.

¹⁷ Martin, Samuel, 1964 *Speech levels in Japan and Korea, Language in Culture and Society*, New York, Harper & Row, BP.

¹⁸ Mimami F. et al. 1974 *Keigo no taikai* [The structure of Keigo] in Hayashi S. and Mimami F., *Keigo no Taikai*, Keigo Kozu 1 [Keigo course vol. 1], Meiji Shoin translators *Doxashu* (Agent) and *Hidokashu* (Patient) respectively with 'Referent Active' and 'Referent Passive', so his terminology has been adopted here.

The reason why there is a need to distinguish between main and side addressee is illustrated by cases such as the following: (Iloo = speaker, Gotoo = main addressee, Katoo = side addressee).

i. (in a context where Gotoo is also present)

Iloo: *Gotoo kani no otosan wa, kongosumatsu taini suru sodeku*

Mr Gotoo's [+DEF] father [+DEF] will probably leave the hospital [+DEF] at the end of the month

Katoo: *Hoo, sorewa yokatta na*

Oh, that's good news!

ii. (in a context where Gotoo is not present)

Iloo: *Gotoo no oyujisan wa, kongosumatsu taini suru sodeku*

Gotoo's [-DEF] father [-DEF] will probably leave the hospital [-DEF] at the end of the month.

Katoo: *Hoo, sorewa yokatta na*

Oh, that's good news!

Here, the existence of a side addressee becomes the condition for the appearance of several Deferral elements (e.g. the deferential verbal suffix *-sareru* or the noun suffixes *o-N-san* or *-kun*, vs. the simple verb *-suru*, use of names without Honorifics etc.).

(a₃) Speaker → Speaker – Referents, which includes:

Speaker → Speaker – Agent

Speaker → Speaker – Patient

Speaker → Agent – Patient

(a₃) Speaker → Addressee – Referents, including:

Speaker → Addressee – Agent

Speaker → Addressee – Patient

Regarding the consideration for the relation between the speaker and other participants or between the addressee and other participants, the distinction between agents and patients normally associates agents to Deferral forms (*-rareru*, *o-N-ni naru*, etc.) and patients to one type of Humble forms (Oishi's Humble forms A: *-te ageru*, *-te sashiyageru*, *o-I-suru*, etc.). For example, in the sentence:

Yumi chan, oiyakazama ni ozabuton o dashite sashiyagenasai

Yumi, please give [+HUMBLE] the cushion to the guests

the relation between the speaker and the guests, and between the addressee (= Yumi) and the guests, is presumably the object of the speaker's consideration.

(a₃) Speaker → Speaker

This is the consideration a Speaker will have for him/herself. Rather than a consideration for the addressee, participants, or the content of communication or the setting (which will be discussed below), this is triggered by the speaker's own needs, such as when a woman uses feminine language, or the use of Honorifics as a status symbol.

5) Consideration towards the content of communication

(b₁) Speaker → Content of the subject matter

(b₂) Speaker → Expressive content

A consideration towards the content of the subject matter can be observed in the distinction between a fact or an object which pertains to the speaker and one which pertains to the addressee (in the case of a house, one could use *otaku* if it belongs to the addressee, *settake* if to the speaker). Consideration towards the expressive content refers to the attitude – polite or concealed – shown to the addressee.

6) Consideration towards the setting

Speaker → Setting

This is observed in the choice of forms such as *-desu*, *-masu*, *gozaimasu* in a formal situation.

Object of treatment

This can be distinguished into two types:

(a) Content of the subject matter

The content of the subject matter refers to the participants (agents, patients), actions, states, processes, act types, and facts and objects which belong to the participants, as a whole. All this can receive a 'high' or 'low' treatment. In the common uses of Honorifics, the Deferral, Humble and Beautification forms are the typical ways of realising this type of treatment.

(b) Expressive content

This can also be defined as the speaker's attitude about the linguistic expressions. The typical example of a consideration purely for such attitude are Polite forms.

Features of the treatment

Finally, we must mention the features of the treatment. As I already mentioned, these are directly related to the speaker's evaluative attitude. In the section on the general characteristics of Honorifics I mentioned the following three factors as examples of viewpoints for the evaluation. Firstly, how 'high' or 'low' something or someone is estimated to be. Secondly, how intimate (close) or non-intimate (distant) something or someone is deemed to be. Thirdly, to what degree a situation is considered to be formal or informal. Focusing, therefore, on these criteria, I have examined honorific expressions and other similar expressions and I have added a number of other features.

(a) High/Neutral/Low [Age/Chauritsu/Sage]¹⁹
This corresponds to the first viewpoint mentioned above. When the object of consideration is the content of the subject matter (in particular something regarding the agent) and the manner of treatment is 'high' deferential forms are employed: *-(r)areru*, *o-N-ni naru*. If 'low', then Derogatory forms appear: *-yageru*, *-kusaru*, *-me* [see Chapter one, section on 'Honorific Expressions' 5]. On the other hand, if the object of consideration is the content of expression, and the manner of treatment is 'low',²⁰ this would typically produce Polite forms: *-desu*, *-masu*, *gozaimasu*. *-Da* should probably be best considered as neutral.

(b) Distant/Neutral/Close [Hanare/Chauritsu/Chikazuki]

This corresponds to the second viewpoint mentioned above. Simply speaking, it refers to whether there is a sense of intimacy accompanying an expression. For example, one could say that – with regards to terms of address – *-chan* would be used to someone close, *-san* in neutral circumstances, and *-sama* or *-dono* to someone distant. Furthermore, it is possible that certain distinctions within the Deferral forms are based on this feature: *-(r)areru* as neutral (or distant) vs. *-nasari* as close. It is particularly useful to consider this feature when accounting for the form *-nasari*, including its addressive-imperative form *-nasai*.

(c) Formal/Neutral/Informal [Aratamari/Chauritsu/Kudake]

¹⁹ The English translation of this terminology is also reproduced *verbatim* from Minami's 1974 work quoted in this previous footnote.

²⁰ In this context 'low' needs to be understood as 'humble' rather than 'diminishing' of an object.

This corresponds to the third viewpoint mentioned above. The use of the Polite *goshimasu* would reflect a 'formal' treatment of the expressive content. *-Desu* and *-masu* would represent a 'neutral' treatment and *-shi* an informal (or non-formal) treatment. *Arimasu* [honorary] would correspond to a formal treatment, and *asu* to a neutral one. Besides the fundamental features seen above, we could consider the following additional ones.

(d) Twinkle(Humble) Neutral(Oblige) [Dowry] (Humble) (H)

This comes into question when one considers if any giving or receiving is involved. Some Humble forms (Yoshi's Humble forms B) are typical of this feature. For example, the use of *o-N-sadaku* in expressions such as *omote itadaki* [to be shown something] implies a feature of 'obligation' about the content related to the patient [sic]. A certain amount of 'burden' is implied with regards to the agent [sic].²¹

(e) Weak Neutral Strong [Ladder] (Humble) (Aveo)

This is, in other words, the 'key' or 'tone' of the expression. For example, in the case of statements *kere wa watashi no da to omou n desu keredomo* [I believe this is mine] is at the 'weak' end, and *kere wa watashi no desu* [this is [+Pol] mine] is neutral, and *kerewa watashi no da* [this is [+Pol] mine] at the 'strong' end. Likewise, with orders and prohibitions, *ike [go] or ikana* [don't go] are rather strong. *ikimasu* [go] and *iku no wa yama-nagai* [don't go] stop going] rather neutral, *itaru desu* [how about going?], *ite karewa* [won't you go [+Pol] ?], and *ikou wa yametsuru* [how about not going?] are weak.

(f) Elegant Neutral Vulgar [By] (Humble) (Shuu)

This feature co-exists with several other ones, and it appears in many types of Honorific expression. I expressions which encompass an evaluative attitude about the language, such as in 'low' or 'bad' language, 'polished' or 'rough' speech, are closely related to this feature. The so-called Beautification forms: *itadaki* (vs. *takera*) [eat], *omuka* [stomach, belly], *oshama* [flower] can be said to convey a connotation of 'beauty'. The same can be said for many Deferential, Humble and Polite forms.

Among the expressions which are not conventionally included in the term Honorifics, there are some which can be considered neutral or vulgar. For instance, derogatory forms such as *-jaguru* or *-kasaru* can be said to be symmetrical in many respects to the Deferential forms, and correspond to each other as poles of [Elegant (Deferential) vs. Vulgar (Derogatory)].

(g) Indirect Neutral Direct [Kansetsu] (Humble) (Chokaketsu)

What I refer to with the term 'indirect' here, are different degrees of spatial and temporal indirectness in an expression. Consider cases in which one would prefer to use a title rather than directly use the addressee's name, as well as those in which one would use a euphemistic expression. Directness is conveyed by the very imperative (and prohibitive) expressions mentioned earlier: *ike* [go] *ikana* [don't go].

Incidentally, this feature often emerges very clearly in non-verbal behaviour. Temporal indirectness is displayed when one hesitantly fingers on the threshold instead of entering a house straight away, despite having been invited to do so. Spatial indirectness is displayed when keeping a certain distance from an interlocutor only far enough not to become impolite.

²¹ The two terms presumably refer respectively to the 'recipient' and the 'giver' of the action. BP

The features from (a) to (g) can be recognised in the many types of treatment of certain objects and it is not the case that one object demands only one type of treatment. The combination of the type of object of consideration, type of object of the treatment and type of feature of the treatment differs depending on the honorific component.

The structure of honorific meanings

Here I will illustrate what I mean by 'structure of honorific meanings' from the viewpoint of the components of honorific expressions. For convenience of description I will adopt this method: when objects of consideration and objects of treatment are in question I will mark them with a '+', when they are not, I will use a '-'. No distinction is made here between main and side addressee.

For the feature of treatment I will, for instance in the case of 'high/neutral/low', consider 'high' as the representative term, and use a '+⁺' to indicate 'high', '-⁺' for 'low', and '+⁻' for 'neutral'. Similarly, 'formal' represents the 'formal/neutral/informal' group, a '+⁺' indicates 'formal', '-⁺' 'informal', and '+⁻' 'neutral'. Table 2 illustrates how all the groups are organised.

	+	±	-
High [Age]	High [Age]	Neutral	Low [Age]
Distant [Honor]	Distant [Honor]	Neutral	Close [Chakazuki]
Formal [Joutanaru]	Formal [Joutanaru]	Neutral	Informal [Kasakeru]
Trouble [Owasu]	Trouble [Owasu]	Neutral	Oblige [O]
Weak [Laba]	Weak [Laba]	Neutral	Strong [Kyoo]
Elegant [B]	Elegant [B]	Neutral	Vulgar [Shuu]
Indirect [Kansetsu]	Indirect [Kansetsu]	Neutral	Direct [Chokaketsu]

Table 2: Symbols for the features of treatment

Let us now first look at Honorifics in the narrow sense: Deferential forms, Humble forms, Polite forms and Beautification forms are illustrated in Table 3. Some other non-dedicated, general forms are illustrated in Table 4. Table 5 shows that the same 'manipulations' can be conducted on non-verbal expressions.

Object of consideration	BEAUTIFICATION forms													
	POLITE forms 2 gozamashi	POLITE forms 1 -desu	HUM forms B 2 -het,	HUM forms B 1 -itasu,	zonzuru	HUM forms A2 -sasete	itadaku	HUM forms A1 mooshagaru -te sahagaru	DEF forms 3 -ki,	goku-	DEF forms 2 -te	DEF forms 1 -o/-ni	naru,-sama,-tawaru	S
S → S-A	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-RA	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-RP	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → AG-RP	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → A-RA	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → A-Rp	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-CONTENT	±	±	±	±	±	±	±	±	±	±	±	±	±	±
S → S-SETTING	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Content related to RA	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Content related to Rp	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General content	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expressive content	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High [Age]	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Distant [Hanare]	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Formal [Aratamari]	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Trouble/Burden [Owase]	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Weak [Jaku]	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Elegant [Bi]	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Indirect [Kansetsu]	±	±	±	±	±	±	±	±	±	±	±	±	±	±

Table 3: Structure of Honorific meanings ← (Narrow definition)
 S= SPEAKER, A = ADDRESSEE, RA = REFERENT ACTIVE, Rp = REFERENT PASSIVE, AG = AGENT

Object of consideration	Common linguistic expressions													
	REQUESTS 2 -shite itadakuru	REQUESTS 1 -nasai -	rasshai, etc.	VOCABULARY 2 -children's (vs. adult's) speech	VOCABULARY 1 -Sino Japanese (vs. Japanese)	RESPONSES/INTERJECTIONS 2 korukara, oo, iya	RESPONSES/INTERJECTIONS 1: moshi moshi, hai, iie	DEROGATORY: -yagaru, -kuwari, -me	S					
S → S-A	+	+	+	+	+	+	+	+	+					
S → S-RA	+	+	+	+	+	+	+	+	+					
S → S-RP	+	+	+	+	+	+	+	+	+					
S → AG-RP	+	+	+	+	+	+	+	+	+					
S → A-RA	+	+	+	+	+	+	+	+	+					
S → A-Rp	+	+	+	+	+	+	+	+	+					
S → S	+	+	+	+	+	+	+	+	+					
S → S-CONTENT	+	+	+	+	+	+	+	+	+					
S → S-SETTING	+	+	+	+	+	+	+	+	+					
Content related to RA	+	+	+	+	+	+	+	+	+					
Content related to Rp	-	-	-	-	-	-	-	-	-					
General content of subject matter	-	-	-	-	-	-	-	-	-					
Expressive content	-	-	-	-	-	-	-	-	-					
High [Age]	+	+	+	+	+	+	+	+	+					
Distant [Hanare]	+	+	+	+	+	+	+	+	+					
Formal [Aratamari]	±	±	±	±	±	±	±	±	±					
Trouble/Burden [Owase]	±	±	±	±	±	±	±	±	±					
Weak [Jaku]	±	±	±	±	±	±	±	±	±					
Elegant [Bi]	+	+	+	+	+	+	+	+	+					
Indirect [Kansetsu]	±	±	±	±	±	±	±	±	±					

Table 4: Structure of Honorific meanings → (Common linguistic expressions)
 S= SPEAKER, A = ADDRESSEE, RA = REFERENT ACTIVE, Rp = REFERENT PASSIVE, AG = AGENT

		INTERJECTOR <i>suru</i>	The VOICELESS	Handwritten letters	Printed letters	Formal clothing	Casual clothing	Hesitant attitude
Object of consideration	S → S-A	+	+	+	+	+	+	+
	S → S-RA	-	-	-	-	-	-	-
	S → S-Rp	-	-	-	-	-	-	-
	S → AG-Rp	-	-	-	-	-	-	-
	S → A-RA	-	-	-	-	-	-	-
	S → A-Rp	-	-	-	-	-	-	-
	S → S	-	-	-	+	+	-	-
	S → S-CONTENT	-	+	+	-	-	-	+
	S → S-SETTING	+	+	+	+	+	+	+
	S →	+	+	+	+	+	+	+
Object of treatment	Content related to RA	-	-	-	-	-	-	-
	Content related to Rp	-	-	-	-	-	-	-
	General content of subject matter	-	-	-	-	-	-	-
	Expressive content	+	+	+	+	+	+	+
	High [<i>age</i>]	-	±	+	+	+	-	-
Features of treatment	Distant [<i>headset</i>]	+	-	+	+	-	+	+
	Formal [<i>tratanari</i>]	+	±	+	+	-	+	+
	Trouble/Burden [<i>owase</i>]	±	±	±	±	±	±	±
	Weak [<i>taku</i>]	+	±	±	±	±	±	+
	Elegant [<i>bi</i>]	+	±	+	+	+	±	+
	Indirect [<i>kanseisu</i>]	+	±	±	±	±	±	+

Table 5: Structure of Honorific meanings → (Non verbal expressions)
 S = SPEAKER, A = ADDRESSEE, RA = REFERENT ACTIVE, Rp = REFERENT PASSIVE, AG = AGENT

By looking at the analysis of single detailed components of honorific meanings in these tables, it is easy to see similarities and differences between these components. Not just similarities but differences too are evident even within the single group of Deferential forms. That Deferential and Polite forms show some differences is obvious, yet we can also observe some parallelisms. The same applies to items among the Humble forms and between Humble and Polite forms.

Furthermore, it is possible to show clearly to what extent conventional Honorifics and more general honorific expressions overlap, and likewise how much verbal and non-verbal expressions have in common.

Expressive devices

Upper vs. lower (high vs. low) relationships
 Upper vs. lower (high vs. low) relationships are used to convey what expressive tools or mechanisms are used to convey honorific meanings. It should be possible to list some general features common to verbal and non-verbal behaviour, and observable in Japanese as well as in other linguistic communities.

For instance, many of the honorifics which constitute Deferential forms use mechanisms which 'raise' the object, e.g.: *gokoro-hai* [your good offices], *gokoro-suru* [your opinion], *hahane* [mother], *-te kudakaru* [HUMBLE BEN AUX]²². On the other hand, there are many expressions among the Humble forms which 'raise' the interlocutor by 'lowering' the speaker: *-te sashigeru* [HUMBLE BEN AUX], *-te mooshigeru* [HUMBLE AUX], *tejiyo suru* [offer, present]²³, etc. are examples. There is clearly a principle of 'upper vs. lower' (high/low) relationship at work in these forms. In English, expressions based on this criterion would be something like 'Your Highness' (*denka*). To be sure, in non-verbal expressions one would bow (lower his/her head), or make a gesture to the effect that one is holding something up reverently, upon receiving it. There is indeed a similar principle at work. It is understandable that the high vs. low relationship used as an expressive tool directly reflects the 'high/neutral/low' relationships of the features of treatment in the structure of honorific meanings illustrated before, and that these traits are not rare among honorific expressions as a whole.

It is, of course, necessary to consider the two dimensions of, respectively, relationships of 'upper vs. lower' ('high/low') used as expressive devices, and relationships of 'upper/lower' as features of treatment within the structure of honorific meanings, separately. Irrespective of whether something is 'high' or 'up' or 'raised', these elements originally indicated a physical hierarchical relationship. This use has in a way been 'diverted' in order to express hierarchical relationships among the honorific meanings. The same applies to the lowering of the head or of the whole posture.

However, there are many intermediate degrees among these forms, ranging from those with a strong conventional nature, to those with a more natural character. The lowering of the posture is a relatively natural feature, and it is observed not only among

²² In writing, the first two terms include the character for 'high' [高], the term for mother (母上) includes the character for 'above' [上], and *kudakaru* (下さる) is written with a character indicating descent from above [下]. BP.

²³ In writing, *sashigeru* (差し上げる) and *mooshigeru* (申し上げる) both make use of the character indicating a movement from low to high, and 'to offer' (奉上) indicates the target of the offer as 'above' [上]. BP.

humans but also in the animal realm, such as in the case of the posture that subordinate Japanese monkeys assume during the 'mounting'.

Before vs. after, big vs. small etc.

Many other features of expressive devices beside 'high vs. low' can be imagined. I would intuitively include at least the following.

1) Up/down (high/low), as described above.

2) Preceding/following (before/after). The person 'raised' is also given precedence, of others when listing them together (e.g. *Saito san to watashi* [Mr. Saito and I], Mrs. Cook and I). Admittedly, this habit is not as strong in the Japanese speech community as it is in the English. In the case of non-verbal expressions, one can think of the order of precedence in entering a room, getting on and off public transport, or table service. Western "ladies first" etiquette is a typical example.

3) Big/small. People one 'raises' are big, those one 'lowers' are small. Among verbal expressions, terms in which this feature is demonstrated to the extreme are *taiki* [you], *shoosai* [I], *shoosha* [my company]²⁴. In paralinguistic behaviour [*zuhanteki higengo hyougen*], terms for oneself (e.g. *shoosai* [I] etc.) are sometimes written in smaller characters. Possibly related to this feature in the area of independent non-verbal expressions are the fact that the posture with hands together at the back connotes an arrogant attitude while that with hands together in front connotes a polite attitude.

4) Elegance/vulgarity and excellence/subordination. *Gyokko* [your manuscript], *hojoo* [kindness], *reijo* [your daughter], *kisha* [your company], *heisha* [my company], *setaku* [my house], *gusoku* [my son]²⁵, illustrate the case on the level of verbal expressions. The assessment of what constitutes elegance/vulgarity and excellence/subordination varies in different societies. In the case of paralinguistic behaviour, it has been observed that Japanese women raise the pitch of their voice in formal situations. However one cannot conclude that because this feature is considered appropriate in Japan, the same applies to other societies. In my experience, in the English speech community, a lower voice is generally produced when aiming at an elegant effect. As for independent non-verbal expressions, it seems that one can generalise that quiet actions are accepted more easily than loud ones.

5) Direct/indirect and immediate/hesitant. This is observed in many circumstances and in many forms. In general, when treating someone as 'high' or formally, features of indirectness and hesitation emerge. For instance, with regards to Deferential expressions, the fact that *-(r)arenu* (the same element also used for the passive and *jihatsu* [spontaneous] forms), *o-N-ni naru*, or *o-N-da* [DEF SUFFIXES] are used for an agent's actions may be due to avoidance of direct expressions in favour of those with an indirect character. Also the use of spatial detaches: *omokata* [that direction], *konokata* [this direction], for referring to persons is due to the same reason. Brought to an extreme, this can lead to a complete avoidance of the mention of agents and patients. We have already noted above the existence of many indirect expressions for orders, invitations and requests.

²⁴ Where *ta-* is the character for 'big' [大] and *shoo-* the character for 'small' [小], BP.

²⁵ The character for *gusoku-* [五] indicating a 'precious stone', *ho-* [芳] 'fragrance', *rei-* [令] 'commanding', *ki-* [貴] 'precious', *hai-* [海] 'sea', *setsu-* [潔] 'unkillfulness', *go-* [徳] 'supidity'.

It is well known that languages other than Japanese, for example English, possess many expressions of this kind (Would you mind -ing? Could you perhaps... I wonder if you could...). There are also several non-verbal expressions. Typical examples in the Japanese speech community are the display of hesitation in entering a room or a house despite having been invited in, or upon receiving a gift.

6) Consensus/dissent. Does one align to what the other is saying or does one contradict him/her? Does one conform to or resist the conventions of a society? It is often remarked that there is a very strong tendency in Japanese society towards (a display of one's) conforming to the interlocutor. There may be societies in which it is accepted that one shows dissent in appropriate places.

7) Attention/indifference. This corresponds to the use or avoidance of expressions which indicate the speaker's particular attention to the addressee or some other referent. The non-verbal instance in which this appears more clearly is the display of respect to an interlocutor, which, if put in a formula, corresponds to *kazirita miyagi* 'eyes right!'. To a lower extent, there is the habit of turning the head towards someone when s/he is talking, or similarly, rather than a movement of the face, the act of stopping any chat and listening quietly. It is believed that in the West the habit of turning the face towards the person who is talking is much more pronounced than in Japan.

In the case of verbal expressions, one can note the mention, in appropriate parts of the utterance, of a term for the addressee (name, title, pronoun, etc.). Whatever this means, however, will be different for different societies. It seems for instance that in English, adding a term for the addressee at the end of a greeting, call or response is considered to make the expression a considerate one (e.g. Good morning, Mr. Taylor). On the other hand, in Japanese it seems to have the effect of underscoring the intimacy between the interlocutors.

This feature seems to be very developed in some dialects. In a western dialect of Kyushu there are several terms which derive from *anata* [you] and are used as sentence-final particles: *nata*, *kanta*, *kanta*. According to Shibata (1975), there is a strong tendency in Amami and Okinawa to add the addressee's name at the end or at the beginning of the sentence.

According to a report on the study of language use in the city of Matsue in Shimane prefecture the term *anta* is used more frequently in greetings than in other types of discourse (transactional talk, chat) (Kokuritsu Kokugo Kenkyujo 1971).

On the other hand, instances of the behaviour of 'ignoring an object' are also frequent, the most extreme being the rejection of communication.

8) Order vs. disorder. As canonical examples of the former, one could mention the dress code in formal occasions, or the straight posture maintained during ceremonies. The same can be observed in instances of paralinguistic expressions such as careful pronunciation and accurate ways of writing a character, styles of writing [*shoshiki*], and choice of the material for a copy of a document. In verbal behaviour, one can observe 'complete' expressions where no element is omitted, and sentences with omissions and interruptions.

9) Ornamentation vs. non-ornamentation. The 'ornamentation' of verbal expressions may include the use of the suffixes *o-*, *go-*, *mi-* etc., the use before or after a name of status-indicating titles, etc. Also, one could think of the use of complimentary expressions. *Waga shin ainaru...* [Dear...], *warewa ga idainaru eyan...* [Our great

hero...]. My dear, etc. Using abusive terms equally could be considered as an instance of the same phenomenon of 'ornamentation'. All types of badges (ribbons, emblems, sashes, etc.), the wearing of flowers on the body, the flying of flags, the wearing of certain conversation, an affected [horizontally] voice, and maybe also crocodile tears. In written language it is easy to find instances of this feature, from the manner of printing the type of sheet, all typical instances of ornamental features.

The application of all these features from 1 to 9 is socially-based. Differences would be produced by the choice of the object of consideration, or by the type of evaluative attitude attached to it. For instance, in Japanese, many expressions are derived from the use of individual features such as the verbal display of relations of upper vs. lower (high vs. low), direct vs. indirect (immediate vs. hesitant), orderly vs. disorderly, etc. It is possible that this is in some sort of relation to the cultural patterns underpinning Japanese society. In concrete terms, one could mention the strong awareness of the distinctions between higher and lower relationships, and between formal and casual settings, the relatively passive attitude [shookyokuteki shiseri] towards verbal communication which is said to be a general tendency of Japanese. More research is needed to establish these facts reliably.

Also, of all the elements mentioned here, some would perhaps be assessed in a similar way, but others would be assessed rather differently in other societies and cultures. High vs. low, preceding vs. following, big vs. small could probably be considered universal features. It is possible that the concepts of elegant vs. vulgar (excellence vs. subordination), as well as order vs. disorder, are more culturally specific.

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²⁶ The square brackets indicate my translation of the title. The round brackets indicate the English title assigned to this work and others in the list, as from a 1998 publication of the National Language Research Institute (An Introduction to the National Language Research Institute - a Sketch of its Achievements, Fourth edition) kindly provided by Prof. F. Mimami.

Minami Fujio – *Honorifics* (part 2)¹

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CHAPTER FOUR. HONORIFICS: CONDITIONS FOR THE USE OF HONORIFICS²

Various Conditions

Inside and outside the world of language

It is perhaps possible to argue that the meaning of Honorifics mentioned in Chapter 3 exists inside the world of language. In order for the elements of Honorifics to be expressed/revealed in actual interaction, it is necessary to perform a kind of “matching [*tsukiawase*]” between such meanings of Honorifics that exist inside the world of language and the things that are outside the world of language. In other words, one can claim that when certain things exist outside the world of language, people choose to use particular Honorific meanings —and the Honorific elements which express those meanings, corresponding with those factors. Things that exist outside the language provide the first necessary condition for using elements of Honorifics.

For instance, I have illustrated the meaning structure of “*gozaimasu*” in Table 6. If I express the content of Table 6 in a sentence, it is as follows: “A speaker – after having considered the relation between speaker and addressee, the content of the subject matter [*sozaiteki naiyoo*], and the situations – manipulates his/her expressions so that they may display features of Low (High-), Distant (Distant+), Formal (Formal+), and Elegant (Elegant+).”

We can think of things that exist outside the language world which match each factor, in this case, the relation between speaker and addressee, the content of the subject matter [*sozaiteki naiyoo*], and the situation.

¹ Fujio Minami, *Keigo*. Iwanami Shoten, Publishers: Tokyo, 1987. © 1987 by Fujio Minami. All rights reserved. Translated and reprinted by permission.

² List of abbreviations for Chapters Four and Five
ACC=Accusative Case Marker; COP=Copula; COHORT=Cohortative; COMPL=Complementizer; DAT=Dative Case Marker; GEN=Genitive Case Marker; Hon.Addr.=Honorific Address Terms; Hon.Pref.=Honorific Prefix; IMPER=Imperative; INFER=Inferential; INTERJ=Interjection; SUBJ=Subject marker; LOC=Locative case marker; NOMIN.=Nominalizer; TOP=Topic marker.

Features of treatment	Object of treatment	Object of regard/concern [koryo]
High [age]	Content related to Agent	Speaker → Speaker-Addressee
Distant [distance]	Content related to Patient	Speaker → Speaker-Agent
Formal [aratamaru]	Content of subject matter in general	Speaker → Speaker-Patient
Trouble [buruden] or weak [yaku]	Expressive Content	Speaker → Agent-Patient
Elegant [bi]		Speaker → Addressee-Agent
Indirect [kawaruu]		Speaker → Addressee-Patient
		Speaker → Speaker
		Speaker → Content of subject matter
		Speaker → Situations

Chart 6 Semantic Structure of *gozaimasu*

For instance, with regard to the relation between participants, both the vertical relationship of status and the difference of [social] position in the situation (e.g. customer and clerk) may be an important issue. As for the content of the subject matter, we might need to consider whether it is important to the speaker or the addressee. As for situations, what matters is whether it is a formal occasion or not and whether some third party is present or not. When a speaker chooses to impose particular characteristics on the object of treatment [*tasukai no taishoo*], she necessarily determines the relationship between speaker and addressee, the content of the subject matter and possible situations.

Strictly speaking, how we understand the relationships between participants, the content of the subject matter and the particular situation all depend on how a speaker judges these parameters. We can nonetheless recognise a general tendency (e.g. a type of reasoning like "when the relation between participants, the content of the subject matter and situations are such and such, speakers are likely to use *gozaimasu*", etc.).

Restrictions within the linguistic system

Given certain conditions outside of the world are fixed, some might think that specific honorific element such as *gozaimasu* will be immediately chosen. However, it is not so simple. What external conditions determine is the meaning of Honorifics. How particular linguistic forms appear in particular places depends on other conditions. For example,

uraboori wa shizuka de gozaimasu.
The back street is [PROLITE] quiet.

If you want to create a (sentence) modifier of a noun [what you would call *renrai shushokugo* in school grammar], simply reversing the order of A and B obtains a very odd sentence:

**shizuka de gozaimasu uraboori.*

It is more likely that we employ the version which omits *gozaimasu*.

Shizukana uraboori
a quiet back street

Even if the speaker chooses to express the meaning of *gozaimasu*, there is no way of expressing it in the structure above. Such a constraint can be seen as a condition affecting the use of Honorifics. However, this kind of condition is not outside, but rather inside the language system.

Having taking these points into consideration, I will consider the following two aspects as the conditions which affect the appearance of Honorific elements:

External conditions (things which are outside the world of language),

Internal conditions (constraints internal to the linguistic system),

External Conditions

In this section, I will list external conditions that might be related to the choice of Honorific meaning, although it is impossible to list all of them. Moreover, it is also very difficult to determine precisely the relationship between these external conditions and choice of Honorifics meaning. In other words, one cannot argue that particular Honorific meanings are always chosen under particular conditions. As mentioned before, it depends on the speaker's understanding of the external conditions. Generally speaking, we can at least say that, under certain conditions, some kinds of meanings are chosen relatively frequently. Therefore, if we want to know the conditions and choice of meanings deriving from those conditions, careful investigations based on reliable source materials are necessary. For the moment, I will illustrate general tendencies based on my subjective judgments.

The external conditions we deal with here can be classified into three: 'Conditions pertaining to human relationships', 'Conditions regarding facts and events', and 'Conditions pertaining to situations'.

1) Conditions pertaining to human relationships

These can be further sub-classified as follows:

a) A person's identity relationship

This refers to the relation of identity between the various roles of the participants, i.e. whether each participant in an interaction (speaker, addressee, agent, patient) shares a similar identity or not. The possibilities may be listed as follows:

Speaker = Agent Speaker ≠ Agent
Speaker = Patient Speaker ≠ Patient

Addressee = Agent Addressee ≠ Agent
 Addressee = Patient Addressee ≠ Patient

(Addressee can be distinguished into the main addressee [*tanomo no uketei*] and side addressees [*waki no uketei*], but I am not making such a distinction here.)

When the addressee coincides with the agent (or a patient), or when the person involved actually is in the presence of the speaker, it is more likely that the speaker chooses the semantic characteristics of Deferential Form or Humble Form (especially Humble Form A) compared to cases where s/he is not. On the other hand, when a speaker coincides with an agent (or a patient), probably the semantic characteristics of Deferential Form will not be chosen, but those of Humble Form (especially Humble Form B) may sometimes be chosen. Should the speaker choose the semantic characteristics of Deferential Form in this case, it would result in an Arrogant or Self-Enhancing Expression [*sondai hyogen*] (e.g. *orezama ga yurushte isukanawazu*, 'I will be so kind as to forgive you').

b) Gender

Gender often comes into play when the speaker is concerned about him/herself. (In other words, it has to do with the concern/regard which can be expressed in the form [Speaker → Speaker]). All the other conditions being the same, more female speakers may tend to choose Honorific meanings in a narrow sense, represented by Deferential Form, Humble Form and Polite Form and Beautification Form [*Bikagoi*] than male speakers. The final particle *wa* is used mostly by female speakers. On the other hand, meanings expressing contempt [*kehai*] such as *-yazuru*, *-kazaru*, *-me* may be more often chosen by male speakers. Use of first person singular reference terms such as *bokei* or *ore* is also of this kind.

c) The social class a speaker belongs to, status, situation etc.

This is concerned with the social class a speaker belongs to, and it is also related to the way the speaker regards himself (Speaker → Speaker). Typical examples are the use of samurai class and the use of common people's language by those belonging to the ordinary class during the Edo Period. It may be more difficult to depict such explicit features in contemporary Japan.

In the Shuri dialect in Okinawa, there are explicit distinctions in pronunciation between male speakers who come from the common classes and those coming from aristocratic or samurai classes. This distinction still exists among some of the older generation (Watanabe 1977). It may also be true among Japanese speakers in general that some people use elegant language in order to demonstrate that they belong to the upper class or that others may intentionally use rough language in reaction to such conventions.

We find similar cases in foreign countries. For example, people in the US Middle class tend to emphasise the final 'r' sound after vowels in words such as 'car' or 'floor' (Labov 1972). Another example is the stuttering speech manner characteristic of British upper classes.

d) Vertical relationship

This vertical relation is the relationship between two human beings. In terms of the aforementioned concern/regard or consideration [*keiryō*], it refers to the following direction of concern of 'Speaker → Speaker/Addressee', 'Speaker → Speaker/Agent' and others. This is intrinsically different from the

speaker's concern toward him/herself (Speaker → Speaker)

The vertical relation between people is often expressed in metaphors. However, we can also include such a relationship of the high or low opposition in status, the top or bottom opposition in order of precedence, as well as superior or inferior and strong or weak. In human society, various relationships can be expressed vertically. Of course we are discussing those which have something to do with linguistic expressions, especially Honorifics. We could arrange a line of individuals in order of their physical height. Such ordering, however, is hardly related to Honorifics in the Japanese speech community, just as good or bad eyesight is also unrelated to language.

I list eight vertical relations that might have something to do with honorific expressions.

(1) Vertical relationship determined by social class

Roughly speaking, social class (pre-modern hierarchy, Watanabe 1977) falls into this category. Needless to say, it is closely related to the social structure of the period and continues to exist in some social systems. The nobility, the samurai class, the common people or the landowners and tenant farmers are some examples. Perhaps what is very conspicuous in contemporary Japan is the existence of the Imperial family. It is reflected in Imperial Honorifics [*kozaishu keigo*] (honorifics for the members of Imperial family). This is by no means unique to the Imperial family in Japan, and a similar type of treatment of royal families in other countries can be discovered in newspapers or broadcasting media.

(2) Vertical relationship determined by birth

This kind of relation is determined by birth. Social status established in one's family's previous generation is also something beyond the control of the person himself, but vertical relation determined by birth is even more absolute. The most basic birth-related vertical relationship determined by birth is seniority in age. This is reflected in the different treatment accorded to age in various groups such as local community, workplace, or between individuals. Seniority order in the parent-child relationship or the brother-sister relationship may be included in this category.

(3) Vertical relationship determined by experience.

This may be related to the previous age-oriented vertical relationship, because both involve length of time (being long or short), but it is fundamentally different. Sometimes even if a particular person is very young in age, he or she might have been a member in a certain group for long time. Sometimes it is not just the length of time that people have spent in some community that matters, but also having had a particular experience before or after another. Sometimes young people who have had particular experiences earlier tend to act as seniors to older people. Experience in the workplace, seniority in school, or length of residency in a particular place all belong to this kind of relationship.

Also certain elements related to the history of the/a relationships between people which are slightly different from duration of time or priority of experience mentioned above, can still be listed in the same category. For instance, two people may have a history of being master and servant, boss and subordinate, winner and loser in a quarrel, or care giver and care receiver.

(4) Vertical relationship determined by roles in society

This relationship is determined by roles in a societal group, irrespective of its size. There are many examples of this kind in modern society, existing in different sectors in society. One typical example is so-called job ranking, such as president, (all kinds of) executive members, manager, department head, section head, or general employee. In many workplaces, it is common to have subdivided job ranking according to the nature of work. I consider that military ranking is also of this sort. The relation between a teacher and student in school, between a coach/captain and other members of a sport team, between leaders/executives and general members of various groups, and between a chairman and the other members of a meeting all fall in this category. This kind of relation is not temporary, but is usually of limited duration. They, however, are not as rigidly fixed as relations determined by social class (especially in earlier times), let alone relationships determined by birth. If one decides to leave a particular social group, relationship determined by roles will disappear in principle. However, even when individuals belong to the same society, roles may be altered by promotion, personnel changes or by changes in the structure of this society itself.

(5) Vertical relationship arising out of discrimination

People tend to distinguish people or groups on the basis of habitual and irrational prejudices. 'Discrimination' may not be most appropriate word but I will call it like this for now since I cannot find any more appropriate name for it.

A good example is that people who are indigenous to a place tend to treat new immigrants as outsiders. This is somewhat similar to the relation determined by experiences, mentioned earlier. The issue of white and black people in the US is truly a matter of discrimination. I presume that the Japanese convention of the dominance of man over woman, or the Western custom of 'ladies first' fall into this category of relationship.

This kind of relation is often based on old customs or values, but human beings naturally make a distinction between themselves and other groups of humans. Therefore new forms of discrimination may emerge.

(6) Vertical relationship determined by ability

Whether there is any particular leadership in some group or not may create such vertical relationship. This type of relation may often be difficult to distinguish from vertical relationship arising from roles in society. The relationship between leaders and followers in children's groups also falls into this category. Of course, the abilities to be evaluated vary according to the nature of the social functions.

(7) Vertical relation arising out of situations.

What is called the 'psychological power relationship' (Figawa 1973) roughly corresponds to this. It is the relation of being placed on a higher (stronger) position or a lower (weaker) position depending on the situations a person is in, such as that of customer-clerk, lender-borrower, server-client or teacher-learner.

This kind of relationship is intrinsically a temporary one. Even the same two people have different relation depending on the situation they are in. Consider the situation where a shop clerk at a department store who served a greengrocer's wife in the morning, happen to come by and shop at that greengrocer's on his/her way back home.

(8) Absolute vertical relation

Let us call the relation toward religious supernatural figures, such as God, Buddha, or other supernatural beings 'absolute vertical relation'. This is not the same as the relation between two human beings, but we regard it in a similar way.

All these vertical relations may not appear independently in typical forms. For example, the parent-child relation in a family is not only a natural relationship but at the same time a relationship determined by roles. However, in terms of the family life and social life it can also be seen as a relation determined by experience. Similarly, the teacher-student relation is not just a vertical relation determined by role in society, but it also concerns the vertical relationship determined by age and experience. The senior-junior relation at school is in many cases a vertical relation determined by age and experience, but relationship determined by role may at times also come into play. As is generally seen in modern Japanese society, relationship determined by roles can coincide with relations determined by experience and may often coincide with relations determined by age in a workplace characterised by a strong seniority system.

e) Degree of intimacy

As for this type of relation, I will make a distinction between the following two kinds.

(1) Psychological degree of intimacy

This is literally whether you would have intimate emotions or not toward some object. This kind of intimacy can be seen between friends, colleagues, and neighbours.

(2) Social degree of intimacy

If we divide this roughly, it can be classified into two: one by blood relationship and the other by social relationship (in a narrow sense). The former refers to whether members are literally biological family or not. The latter is related to the workplace, social group or regional community to which one belongs. For example, an in-company and out-company distinction, belonging to a labour union, a trade association, the same building of an apartment complex, living on the same floor, neighbourhood association, neighbourhood self-governing body, and school classes would all fall into this category.

Since these two kinds of relation are, after all, matters of psychological or social distance: If the distance between speaker and addressee is great, there would be greater likelihood of choosing Horrific elements. In particular, I presume they would choose a meaning such as Polite Form, Deferential Form or Humble Form. When we meet someone for the first time, we tend to use polite or formal language. As we get to know each other and become close, we tend to become more frank and candid.

We have divided social degrees of intimacy into two kinds, psychological and social. However, it is often true that when we are close (or distant) socially, we tend to be close (or distant) psychologically. However, the two are intrinsically different. It is possible to have a socially distant relationship and yet to have intimate emotions toward that person or vice versa.

2) *Conditions regarding items*

These can be classified as follows:

a) Whether items belong to the addressee or the speaker

When items belong to the addressee, the speaker typically chooses the meaning of Deferential Form, especially meanings expressed by elements (prefixes) such *ki-, hoo-, o-, go-*. Recently, I heard *-sama* being used even for something which was not human. A shop clerk said,

O-namae-sama o o-tre-shimashoo ka?

Shall I have your name embroidered [HUM] [DEF PREFIX] ADDRESS FROM [on your jacket]?

On the contrary, when items belong to the speaker, the choice may be of elements which express the meaning of Humble Form such as *hei-, setsu-, shoo-*.

Similar condition applies to items which may once have belonged to the speaker, which eventually ended up belonging to the addressee. For example, the speaker might tell the addressee,

sono-uchi de-egami o kakimasu.

I will write a letter [DEF PREFIX] before long.

kono-aida sashitagemashita go- itaijo ni ...

In the letter of request [DEF PREFIX] that I gave [HUM] you the other day...

In this case, *o-* or *go-* [which are Honorific elements], are not attached to the things that the addressee will write (or wrote) but to the things that the speaker will write (or wrote).³

This kind of phenomenon is often seen in a 'speaker → addressee' interaction. However, it is not clear that such phenomena would happen in an interaction between a third person (who is neither on the side of the speaker nor on the side of the addressee)⁴ to the addressee'. I think it is difficult to say

(anata no tokoro e) sakin A-shu kara go-tsunuchi ga itia
to omoimashu ga...

I think that you have received a notice [DEF PREFIX] from Company A recently...

It is because the use of *go-* may be taken as the Deferential expression toward Company A. However, if one says alternatively,

A-shu kara go-tsunuchi o sashitageta to omoimashu ga...

I think we have had Company A give [Humble] a notice [DEF PREFIX]...

it may appear as though company A is on the side of the speaker.

³ This is because these things will eventually belong to the addressee (NI).

⁴ "Being on A's side" means that you belong to A. As you speak about A or person or items related to A, you use the humble form, because you consider A as your in-group.

c) Whether the matters in question are formal or not

When the things expressed are formal matters, irrespective of the setting (which I will discuss later), it is probable that the speaker tends to use more Polite Form and other Honorific elements. Examples are found in speech on formal and other Honorific occasions. On such occasions, however, congratulatory or consolatory occasions. On such occasions, however, setting-related conditions may also come into play, so it is difficult to distinguish between them. However even in daily conversation the speaker may choose more formal language for such topics.

d) Whether the matters in question belong to daily life or to a special field

This is the condition which explains the occurrence of Beautification Forms [rikagou]. Shibata (1957) attempted to explain which words tend to admit the Beautification prefix *o-* and which words do not. Some of his account may be relevant to the conditions discussed here.

Shibata says that it is difficult to attach *o-* to words related to nature, mineral, plants, shape, colour and mechanical industry and organisation. On the contrary, it is easy to attach *o-* to words related to meals, emotions, mental and bodily functions. Also in referring to the same thing, different terms will be used depending upon whether they are treated as things of daily life or of a special field. For example, we call shop *o-mise* [shop, +DEF PREFIX] in daily conversation, but we call it *shooten* [commercial shop, without *o-*, NI] in articles or papers in economics. In this case, it is a combination of the elements of Beautification Forms *o-*, and choice of vocabulary of Japanese origin [wago]: *mise* or of Chinese origin [kango]: *shooten*. Other examples of this kind are *o-uchi / katei* or *kaoku* [house], *o-kame / kinsen* or *kahai* [money], *o-kome / beikoku* [rice], and *o-fune / sempaku* [ship].

3) *Situational conditions*

I make the following distinctions.

a) Whether situations are formal or not

For example, meetings which involve speeches or lectures are formal occasions, whereas occasions including chitchat or casual conversation are not usually formal. In written language, we distinguish the occasions when we send formal notices or greetings from the occasions when we send personal letters. Generally, more Honorific elements appear on formal occasions, and less Honorific elements are used on non-formal occasions.

b) Whether communication is addressed to one or many

It is not clear whether this stands as an independent condition. This condition comes into play when situations are formal. In any case, people tend to use more Honorific elements in one-to-many communications rather than in one-to-one communications.

c) Whether the message is delivered directly or through indirect means

Strictly speaking, it is a matter of differing means of communication rather than differing situations. However, I will include in this section. For instance, two people who hardly use Honorific elements in face-to-face conversation might use them in a telephone conversation. Similar phenomenon can be seen when we record our message on tape and send it to people or even in letters between individuals.

I imagine that there are individual differences. Younger people tend to make less distinction when they deliver the message either directly or through indirect means.

I have listed some external conditions. They do not exist independently of one another. Some conditions combine with other conditions. For example, though we saw that one of the situational conditions is whether the message is delivered directly or through indirect means, this does not mean that more Honorific elements are bound to appear every time we communicate through indirect means. In such cases, there are always other conditions concerning human relations, which regulate the appearance of Honorific elements. We also need to consider which of these conditions should be treated as more important (which should be prioritised). In order to discuss the mutual relations between different external conditions, providing principles for using Honorifics, we need to investigate more closely.

Principle of Power and Principle of Solidarity

This does not concern Japanese language, but R. Brown and A. Gilman (1960) have presented simple and clear explanation of principles of use of Honorifics in European languages. They studied the actual instances of the distinctive use of two different kinds of second person pronouns (such as French *tu* and *vous*; German *du* and *Sie*) and its historical changes. And there they enunciated two principles: Power (a vertical relationship) and Solidarity (the degree of intimacy or social/psychological distance).

They argue that in the past the Power (vertical relationship) Principle was dominant in European languages. Therefore the use of second person pronouns was often non-reciprocal, i.e. when A may use *tu* to B, B may use *vous* to A.⁵ Aristocrats in the Middle Ages used *tu* to the common people and the common people used *vous* to aristocrats. Until recently it was customary that parents called their children *tu* and that children used *vous* to parents.

However, in recent years, the Solidarity Principle came to be dominant and the use of second person pronouns became reciprocal. That is, if two people are close to each other, both of them use *tu* to each other. For example, many parents and children today address each other with *tu*. On the other hand, the French Army adopted a regulation that officers should address their subordinates or enlisted men as *vous*. They refer to each other as *vous*, so it is reciprocal. In any case, the mode of address in European languages is still going through changes today.

However, it is not the case that the Solidarity Principle has totally replaced the Power Principle. Some Japanese visiting Germany spoke to a German child using *Sie* instead of *du* and the child did not even realise that the man was speaking to him. Children in Germany are now called *du* by any adult, regardless of degree of intimacy.

As mentioned before, contemporary English does not have the *tu/vous* distinction. The fact that they use only 'you', derived from the older 'ye', i.e. the equivalent of *vous* in European languages, might make us think that English is such a progressive language. However, an American told me that even in the English-speaking world, while those who are senior could start using each other's first names, it is difficult for young people to speak to their seniors in such an intimate fashion. In this case, the Power Principle works in the English language.

From Power to Solidarity

These two principles seem useful in explaining various phenomena in the contemporary use of Japanese Honorifics. For example, when company employees use Honorifics to their superiors within a company, the Power (vertical relationship)

Principle is working. When two colleagues who are intimate with each other talk without Honorifics, the Solidarity (degree of intimacy) Principle is working. Also, without Honorifics, the Solidarity Principle is working. Also, when company employees do not use Honorifics to refer to their own company when in conversation with out-group people (those outside the company), we can see the outworking of the Solidarity Principle. In-group and Out-group distinction, which is part of the aforementioned degree of social intimacy, may be seen as the Japanese way of putting the Solidarity Principle into practice.

Considering this example from the viewpoint of historical changes in Honorific use, we may see it as an example of 'absolute Honorifics' becoming 'relative Honorifics'. In the past, when speakers referred to someone superior to themselves, they always used Honorifics. Today, however, they may or may not use Honorifics depending on the social and psychological distance from the addressee. We may interpret this change as an example of the Solidarity Principle replacing the Power Principle, though it does not appear in quite the same way as in Europe.

Speaking in a broad perspective, we may say that Japanese is also experiencing changes parallel to those which have occurred in European languages. The fact that many Japanese parents and children no longer use Honorifics between themselves can also be seen as a phenomenon parallel to parents and children in Europe coming to address one another as *tu*.

Superiority of the Vertical Relationship Principle

On the whole, the Vertical Relationship Principle seems to gain predominance. I do not have empirical evidence which demonstrates this objectively. However, from daily experience, when we [in this case, Japanese] speak with someone else, we seem to be talking while evaluating our vertical relationship with the addressee. This is why Neustupny voiced criticism of Japanese speakers as follows:

Japanese speakers express too much social status or solidarity even when they communicate in foreign languages. It seems very difficult for them to communicate ideas at a neutral level to superiors and to communicate with strangers without being either too intimate or too distant. (Neustupny 1974)

Even in vertical relationships there are many different varieties as mentioned before. As conditions required for certain Honorific expressions to be used, more than one kind of vertical relationship is involved. It is possible that one condition may take precedence over others in determining the appearance of Honorific expressions.

S. E. Martin (1964) studied the order of priority among four factors: Position, Age Difference, Gender Difference, and Outgroupness (related to Degree of Intimacy rather than to a Vertical Relationship) in Standard Japanese, Standard Korean, Okinawa Shuri Dialect and summarised the result in Table 7.

⁵ Mitsumi used *omise* for *tu* equivalent and *amata* for *vous* equivalent. I (N.I.) used *tu* and *vous* in this article.

	Person in the topic	Addressee (calling a person)
Standard Japanese	P	O
	A	P
	S	A
Standard Korean	O	S
	P	P
	A	S
Okinawa Shuri dialect	A	A
	P	O
	O	P
	S	S

Table 7 Order of priority of various factors (P: Position, A: Age, S: Sex Difference, O: Outgroupness)

Martin himself thinks that this rating is approximate or rough and that he is not satisfied with it. We need more careful study in order to clarify such matters.

This study by Martin viewed the Honorifics of Japanese and Koreans in a general way. However, one would expect the interplay of various vertical relationships depending on actual situations. In language usage in the old Japanese Army, the vertical relationship determined by roles, i.e. the military hierarchy,⁶ and the vertical relationship determined by experience⁷ both existed side-by-side. Sometimes the latter relationship was stronger than the former. In a novel called 'Shinku Chitai [the vacuum zone]' by Hiroshi Nomo, there is a scene that a *Ninen-hei* [second year soldier] who is the *Jootoo-hei* [superior class soldier] by status is calling a *Sanen-hei* [third year soldier] who is the *Itooo-hei* [first class soldier] "Sanen-hei *dono* [Mr. Third Year Soldier]". There are similar phenomena in the Japanese workplace.⁸

Internal Conditions

Internal conditions are the conditions inside a given language system which are directly related to the choice of particular Honorific elements. I cannot list all possible conditions which control the Honorific elements. So I will look at some restrictive conditions.

1) Conditions related to discourse

- When discourse is directed not toward any particular individual but toward the general public as addressees, elements employing Polite Form and Humble Form such as *tasu* [do, +HUM], *zonzuru* [know, +HUM], *moosu* [say, +HUM], usually do not appear. Examples are general books, articles or editorials in newspaper or magazines, theses, office documents, etc.
- The position of Honorific elements within the structure of a discourse needs to be considered. In coherent conversational discourse, the Honorific elements are often seen at the beginning and the end of the discourse but not so often in the middle of the discourse. Typical examples may be when interlocutors begin

⁶ Examples of Japanese Military Class in a descending order: Taii, chunai, shooi, joutoo-hei, itoo-hei

⁷ According to the years you joined the Army, they are called Ichimen-hei (first year soldier), Ninmen-hei (second year soldier) and Sanmen-hei (third year soldier)

⁸ More examples are given in Chapter Six of Minami's book, not translated in this article.

conversation with greetings and then get down to business talk in the middle and conclude with greetings (e.g. the conversation pattern of the guest who had some business with the person he visited). In the greeting part, Honorific elements such as Polite Form and Humble Form appear. Even in written language, the structure of letters, which have a nature similar to spoken discourse, may show a similar tendency.

c) The distinction between written language and spoken language may be seen as a condition related to discourse. For example, prefix elements such as *he-*, *setsu-* and *ga-* listed earlier as examples of Humble Form, appear only in written language (or in a very literary form of spoken language). On the contrary, contemporary elements such as *-yogaru*, *-kuzaru*, and *-me* only appear in spoken language (or in a conversational part of written language).

2) Conditions related to the structure of sentences

a) There are some subordinate clauses (or phrases) which cannot take the Polite Form element *masu* in their predicate. The phrases which end with *-nagara* [while...ing], *-suzus/as* [---], *-naitel[no]*, *-zu[no]*, *-zun[no]*, *-makuel[no]*, *-ba[if...]* are such examples.

We cannot conceive such forms as

**aruki masshi nagara*, **utai masshi/sutisu*, **naki masse nai de*,

**ki masse naku te*, **furi masse ba*, **gozaimase ba*

As for *-zu[no]* and *-zun[no]*, it is not totally impossible to have the polite form such as *masu* or *gozaimasu* appear. In formal greetings, some people may use the forms such as *ari masse zuni*, or *itashi masse zuni gozaimase zu*. But such use is not common.

However, such phrases can take the Deferential elements.

Inemuri o nasari nagara...

As you doze [DEF] off

Iazura o nasara naide...

[You] did not do [DEF] mischief....

Sorehodo g-nomi ni narazuni...

[You] did not drink [DEF] so much....

kochira e irasshareba...

If you come [DEF] this way....

Among Humble Form elements, *-te sashiyageru*, *-te kudakaru* can appear in the subordinate phrases listed above. However Humble Form such as *itasu* [do, +HUM], *zonzuru* [know, +HUM], and *mairu* [come, +HUM], which often occur with *masu*, cannot be used. Also these Humble Forms hardly occur without *masu*. The [Humble, NI] prefixes such as *he-*, *setsu-*, *shoo-*, *ga-* and the Beautification Forms *-o-*, *-go-* are not affected by with this type of restriction.

On the contrary to the subordinate phrases we have seen, there are some phrases which allow Polite Form elements. They are *-tel*...and... [and -ga [although...]]

yudeta yusai wa itan o-nabe kara dashimashi te...
As for boiled vegetables, you take [POL] them out of the pot [DEF PREFIX] and...

soko e itta hito wa zembu de hachi-nin desu ga...
Although the people who went there were [COP POL] all together eight...

matia izen no seisaku ni modoru wakede gozaimashite.
It means [POL] that our party goes back to the previous policy again...

However, the Polite Form elements do not appear in some cases even if the phrases have the same ending. For example, it is possible to say,

Sake wa saki da ga tabako wa nomanai otoko
The man who loves sake but does not smoke

but it is difficult to say

??*Sake wa saki desu ga tabako wa nomanai otoko*
The man who loves [Polite] sake but does not smoke

Also, while it is possible to say

te o fute hashirinashita.
He ran [POL] [white] waving his hand.

it is unnatural to say

**te o furimashite hashirinashita.*
He waved [POL] his hand and ran [POL].

b) In the phrase *-to*, which indicates a quotation, there are some instances where it is difficult to use Polite Form. Roughly speaking when the verbs which follow *-to* phrase are related to language activities such as *iru* [tell], *hanasu* [speak], *kataru* [narrate], *isigeru* [inform], *sasayaku* [whisper] *morasu* [seek], *oshieru* [teach], *enzetsu suru* [make a speech], *hoosoo suru* [broadcast], *kaku* [write], *shirasu* [record], *insatsu suru* [print], Polite Form can appear freely before the *-to* form, i.e. in the quotation part.

"*kore wa watashi ga katta hon desu*" *to imashita.*
[I] said that this was [POL]the book that I bought [POL].

"*ashita wa shigoto o yasuminasu*" *to imashita.*

[I] said [POL] that I will have [POL] a day off tomorrow.

"*sorewa taihen kooeina koto de gozaimasu*" *to hanashita.*
[I] mentioned that it would be [POL]such an honour

"*rainen natsu mata oai shimashoo*" *to kaite itta.*

It was written that we shall meet [HUM] again next summer.

However, if the verbs which follow *-to* are related to psychological activities, Polite Form elements find it difficult to appear in front of *-to*. *Omou* [think], *kanjaueru* [think], *kanjinru* [feel], *shinjiru* [believe], *shinoo-suru* [trust], *shinrai-suru* [trust] and *soozoo-suru* [imagine] and *yosoo-suru* [predict] are some examples.

Rather than saying

??*kore wa kare ga katta hon desu to omoimasu*
I think this is [POL]the book that he bought.

it is common to say

kore wa kare ga katta hon da to omoimasu.
I think this is the book that he bought.

It is not totally impossible to say

??*kare wa sore o kanarazu yatte kuremasu to shinjimasu.*
I believe [POL] that he will certainly do [BEN POL] that [for me]

but it sounds natural to say

kare wa sore o kanarazu yatte kurenu to shinjimasu.
I believe [POL] that he will certainly do [BEN] that [for me]

The same thing can be said about the following two sentences.

?*sono damu no kooji wa kotoshi kugatsu made-ni kansai suru deshou*
to yosoku shiteimasu.
I am predicting [POL] that the construction work on that dam will be completed [POL] by September this year.

sono damu no kooji wa kotoshi kugatsu made-ni kansai suru daroo
to yosoku shiteimasu.

I am predicting [POL] that the construction work of that dam will be completed by September this year.

c) Polite Form inside the adnominal modifier
We discussed this at the beginning of this chapter. Polite Form elements hardly appear in such constructions.

?*kinoo watashi ga kaimashita hon wa kore desu.*
This is [POL] the book that I bought [POL] yesterday.

kinoo watashi ga katta hon wa kore desu.
This is [POL] the book that I bought yesterday.

Comparing the two sentences above, the latter is considered to be the normal. However, as extremely polite expressions, it is not so unusual to have sentences

such as

kinoo watashi ga kaimashita hon wa kore de gozaimasu
This is [Super POL] the book that I bought [POL] yesterday.

However, it is unnatural to have sentences such as

**ma wa hon o yominasu ikan desu*
Now is [POL] the time to read [POL] books

**nanika tabemusu mono wa arimasen ka?*
Is [POL] there anything to eat [POL]?

We can see that while some sentence modifiers allow Polite Form elements freely, it is impossible to have them with some other modifiers. I have not discovered a clear basis for these differences.

However, roughly speaking, when the nouns you modify are time, place or nominative or accusative and when various elements of meanings are restricted and are made specific, they allow greater freedom of using Polite Form elements. For example,

kinoo shibarai de watashi ga kaimashita hon
the book I bought [POL] in Shibuya yesterday.

On the contrary, when there is less restriction or when various elements are less specific, (or if the meaning is general), Polite Form is less likely to appear. However, we need more investigation on this matter.

d) The adnominal modifier [*renjiai shinshokugou*] and appearance of the Honorific element in the predicate of the sentence containing that modifier. This should be seen as a condition necessary for the use of Honorific elements rather than conditions which restrict the use of Honorifics. When there are Polite Form elements in the sentence modifier, it is likely that the predicate of the sentence will also include Polite Form (or Deferential Form or Humble Form).

It is natural to say

kinoo sashitagemashita ebi wa moo oaguri ni narimashita ka?
Have you already eaten [DEF] the prawn I gave [HUM] you yesterday?

However, it is impossible to say

**kinoo sashitagemashita ebi wa moo tabeta ka?*
Have you already eaten the prawn I gave [HUM] you yesterday?

Similarly, the first sentence below is acceptable, but the second one is unacceptable.

kochira kara ookuri hashimasu yooshi ni go-shomei go-natsu-in
no ue, okaeshi kudasai mise.

After you sign [DEF] and put your seal [DEF] on the form that I send [HUM POL] from us [*lit.* this side], please send [BEN DEF] it back to us.

**kochira kara ookuri hashimasu yooshi ni go-shomei go-natsu-in*
no ue, kaeshitekure.
After you sign [DEF] and put your seal [DEF] on the form that I send [HUM POL] from us [*lit.* this side], please send [BEN] it back to us.

However when the sentence is decisive or has clear affirmative tone, we see different characteristics. For example,

10 nen ni watatte A-kun o shidoo saremashta B-sensei, kono kata
wa nakanka erai kata datta.
Teacher B who has given [DEF POL] instruction to Mr. A for 10 years;
this person was [POL] a great person.

It is also possible to have a sentence as below.

10 nen ni watatte A-kun wo shido saremashta B-sensei, kono kata
wa nakanka erai kata datta.
Teacher B who has given [DEF POL] instruction to Mr. A for 10 years;
this person was a great person.

I cannot explain clearly the conditions that make such a sentence acceptable but I think that the position of that sentence in the discourse has something to do with it.

10 nen ni watatte A-kun wo shido saremashta B-sensei, kono kata wa
nakanka erai kata datta.
Teacher B who has given [DEF POL] instruction to Mr. A for 10 years;
this person was a great person.

Kore wa shunai no hitobito no hanashi kara mo ukagatai shiru koto ga dekiranu
dewa nakikata.
We can guess this from the way people around talked [about him].⁹

e) As for the relation between the end of the sentence and appearance of the Honorific elements in the sentence modifier, there are other issues involved. For example, in contemporary Japanese society, parents generally do not use Deferential Form about their children's actions. However, many parents use the form *-nasai* in sentences which contain imperatives as in

hayaku ikimasai
Go [IMPERATIVE] quickly!
yoku kande tabemasai
Chew well and eat [IMPERATIVE]!

⁹ These two sentences were presented as a sequence in a discourse. I (N) put translation separately for the case of readers.

Also we use *-deshao* rather than *-danro* toward addressees that we don't usually use *desu* and *masu* in inferential [*suiryoo*] sentences. This means that with *-naai* Teinei [politeness] (or Sonkei [deference]) may be smaller. In any case, certain characteristics of the sentence (such as direct action toward the addressee) seem to be conditions required for the appearance of certain Honorific forms.

3) Conditions related to word structure

a) Words which can take *o-* and those which cannot take *o-*
 Shibata Takeshi (1957) has presented his study on this matter. Not all words can be prefixed by *o-*. There are many words which cannot take *o-* or where it is difficult to take *o-*. Shibata shows that the following categories tend not to have *o-* attached very easily.

words of foreign origin [*gaivango*]
 words starting with *o-*

long words
 words which convey a bad impression

e.g. *dangoppama* [snub nose], *itaku* [country], *torikku* [trick], *kuso* [swat]
 words related to nature or colours (related to nature, mineral, plants, shape, colour, mechanical industry, organisation)

On the contrary, as mentioned in 2) d) in External Conditions in this chapter, words related to meals, emotions, mental and bodily functions can take *o-* easily. Words related to colour or nature or words related to meals, emotions, mental and bodily functions should be seen as relating to external conditions. (Perhaps words which carry bad impressions should be seen as external conditions as well.) However, words of foreign origin, words starting with *o-* or long words should be treated as internal conditions. We need further analysis to establish more explicitly the conditions required to display such tendencies.

b) Whether words take *o-* or *go-*
 Whether you should use *o-* or *go-* is determined by the origin of words. Generally speaking, vocabulary of Japanese origin [*wago* or *yamatokotoba*] take *o-* and vocabulary of Chinese origin [*kango*] take *go-*. However, they are not necessarily true in all cases.

o-uchi [house, +DEF PREFIX], *o-ko-san* [child, +DEF PREFIX, + ADDRESS TERM], *o-sashimi* [sashimi, +DEF PREFIX], *o-temae* [way of serving tea, +DEF PREFIX], *o-namae* [name, +DEF PREFIX], *o-hana* [flower, +DEF PREFIX].

go-anshin [releief, +DEF PREFIX], *go-kazoku* [family, +DEF PREFIX], *go-shikatsu* [observation, +DEF PREFIX], *go-looksu* [success or winning, +DEF PREFIX], *go-nempai* [elderly, +DEF PREFIX], *go-fuufu* [couple, +DEF PREFIX].

What are listed above are common examples.

However, the following are examples where *o-* is attached to vocabulary of

Chinese origin.

o-danwa [telephone, +DEF PREFIX], *ohentoo* [lunchbox, +DEF PREFIX], *o-kyaku* [guest, +DEF PREFIX], *o-isha-san* [doctor, +DEF PREFIX], ADDRESS FORM], *o-chawan* [teacup, +DEF PREFIX], *o-benkyoo* [study, +DEF PREFIX], *o-shuugi* [calligraphy, +DEF PREFIX], *o-ryouri* [cooking, +DEF PREFIX].

As Shibata pointed out, words which take *o-* are often related to daily life, e.g. meals. If this is true, the external conditions which Shibata pointed out may take precedence over the internal conditions, i.e. whether they are *kango* (vocabulary of Chinese origin) or *wago* (vocabulary of Japanese origin). However we need more careful studies concerning this matter.

CHAPTER FIVE. FUNCTIONS OF HONORIFICS

Investigation by Oishi

How does Honorifics function in actual communication? As I mentioned in the previous chapter, Honorifics is used under various conditions, whether in the broad or narrow definition of the term. In each condition, it has some particular function. In other words, it must be used with the expectation of having some kind of effect [*hyogen kokoi*].

Oishi (1975) has presented his investigation into such functions of Honorifics, which he classifies as follows.

1. Expression of Respect [*ragame*]

The first is an expression of respect [*ragame*]. This is the function of Honorifics that ordinary people first think of, which is the use of Honorifics for showing respect. It is the use that is related to various kinds of vertical relationships which are mentioned as the 'external conditions' earlier. Oishi divides this use into four categories: 1, showing respect for status and ability; 2, showing respect for superiors; 3, showing respect for those who do us favours; and 4, valuing persons for themselves. In this type of expression, one simply expresses respect for someone. In other words, one reverses them.

Incidentally, Oishi has made interesting remarks that using the expressions of respect and having the feeling of respect or reverence [*kei*] are different. For example, the clerk who uses vocational Honorifics may not necessarily have respect for the customers.

2. Expression of Distancing [*hedate*]

When we talk to people met for the first time, or passers-by, we do not use the informal expressions that we use between close friends. We try to speak more politely. It is considered to be bad manners to talk to someone we meet for the first time casually without using Honorifics. On the other hand, a casual way of talking without use of Honorifics could sound friendly. Needless to say, these usages are related to degree of intimacy, which is part of the 'external factors' mentioned in the previous chapter. Oishi argues that after all, Honorifics is intrinsically standoffish or distant and it is used in a relation in which a psychological hedge exists. Therefore one way of using Honorifics is to speak with Honorifics to those who you want to keep at a distance.

Certainly, this way of using Honorifics erects a hedge between two human beings. To put it differently, we can perhaps say that it is to claim one's territory. For the speaker, the addressee or the third person to whom the speaker uses Honorifics is a person who is outside his territory. The one whom the speaker can talk without using Honorifics exists inside his territory, and therefore, is a fellow member.

For instance, there are parents who use Honorifics with their children only when they scold them. It appears that parents are temporarily pushing the children out of their territory and creating a hedge between them and their children. They might think that such use of Honorifics has the effect of not allowing their children to depend on them. On the other hand, Honorifics is not used within an in-group. For example, when the speaker is referring to his own company employee in conversation with out-group people, even if the referent is superior to the speaker, he does not use Honorifics. This is because he treats his superior as someone who exists within his own territory.

3. Expression of Formality [*aratamari*]

This use of Honorifics is related to 'situational conditions', which is part of the aforementioned 'external conditions'. Even people who usually talk casually with each other speak with formality in formal situations. Oishi states that it is natural that people use formal language with Honorifics as its main device on formal occasions such as at conferences, explication, presentation or reporting in front of large audience.

It is, so to speak, used as a lingua franca. Being involved in a formal occasion may motivate people to use Honorifics. However, the opposite may also be true. The speaker may use Honorifics in order to make it clear that it is a formal occasion. Using Honorifics may turn the occasion into a formal one.

4. Expression of Dignity [*igeni*], Decency [*hin-i*], Contempt [*keibetsu*] and Sarcasm [*hinkai*]

Honorifics is occasionally used to express the dignity and decency of the speaker himself or a feeling of contempt or sarcasm toward someone. Oishi states that in this use, Honorifics is used with a kind of superiority. He also claims that such use of Honorifics, connected with superiority and used to establish superiority, indicates that Honorifics is language of culture or sophistication [*kyougo-sei*]. One needs to be highly educated or sophisticated in order to manipulate Honorifics elegantly. Therefore Honorifics is used to show off the sophistication of the speaker. Oishi also states that it is natural that women who love elegance use Honorifics more frequently because it is considered as an elegant language.

Certainly we cannot deny the fact that one of the purposes of using Honorifics is to express such dignity [*igeni*], decency [*hin-i*], contempt [*keibetsu*] and sarcasm [*hinkai*]. Especially, Expression of dignity and decency is related to Speaker's concern toward Speaker himself/herself. However, it is questionable whether the expression of dignity and decency should be distinguished from aforementioned other expressions. Expression of Dignity or Decency seem to be related to Expression of Formality. Expression of Contempt and Sarcasm as well as that of Dignity and Decency may be related to Expression of Distancing. As Oishi says, if such expressions are also used to show off sophistication of the speaker, they also indicate that the speaker tries to portray that he is not of the same kind as the addressee or the third person (i.e. he is not the person in the same territory).

5. Expression of Intimacy [*shin-ai*]

Addressing people as *-san*, *-kun* and *-chan* shows more respect than calling them only by their name alone. Among these titles, *-chan* should be classified as a term of intimacy rather than that of respect. Oishi points out such use of Honorifics and also includes expressions addressed to small children such as

ojisan ga ii mono o ageyoo

Uncle [I] will give you a good thing.

obasan ni mixete choozai

Would you show [BEN] it to auntie [me]?

Oishi also treats these expressions as Expressions of Intimacy. Needless to say, this use of Honorifics is strongly characterised by degree of intimacy, which is part of

'external conditions'. They are expressions with which the speaker attempts to get closer to the addressee rather than distancing himself as in Expression of Distanting.

Another View of Honorifics

Functions of linguistic communication

It is possible to have a different view about the function of Honorifics. In this view, we first consider functions of communication in general (functions of linguistic communication) and then try to find out the place of Honorifics in these functions in particular.

The functions of verbal communication are varied. Thinking in a simple manner, the main function of language is to communicate some fact or information of some logical relations, such as "the wind is blowing hard here now" or "15 plus 7 is 22". However, functions of language are more than that. When we fail to do something, we might say "Damn it!". When we see a friend in distance, we call out to him, "Hello!". These are also functions of language.

When someone says to his friend whom he meets on the street "It is such a terrific wind, isn't it?", he does not do so in order to communicate that "a strong wind is blowing". Both parties already know that a strong wind is blowing; yet they say it because they want to reconfirm their mutual social relations through such conversational exchange. Language is used for such purposes, too.

Riddles and the Shiri-tori game¹⁰ are also linguistic expressions. The function, however, is 'play'. I was once reading a children's magazine and came across a riddle "What was the principal of the school doing at 11 am yesterday?" This is not a question expecting information about a particular activity of the principal. (The answer was "He was breathing.")

Various researchers' thoughts

Various researchers have expressed thoughts on the function of linguistic communication. A well-known example is R. Jakobson (Jakobson 1960). He first considered several factors necessary for linguistic communication to happen and acknowledged the function of each factor. He listed six functions: emotive (direct expression of emotion or senses), conative (appeal to or demand from the other party), poetic (functions concerning art and play), referential (function of pointing to something), metalingual (the function of representing language with language), and phatic (function concerning social contact) functions.

There are various thoughts among Japanese scholars about the function of linguistic communication. Iwabuchi (1965; 1970) lists four functions of language: 'recognising', 'communicating', 'thinking' and 'creating'. Also Tokieda (1955) lists 'practical [*Jitsuyō-teki*] function (as a means)', 'social [*shakai-teki*] function' and 'appreciative [*kanshō-teki*] function'.

Six functions

Having considered various researchers' opinions about the function of general communications, I will take up the functions that might have relevance to Honorifics and list them as follows:

1) Opening and closing of social relationship

Greetings when meeting or parting or calling and responding are typical examples of this function. How such kind of discourse appears and how various

Honorifics elements are used in these discourses are important.

2) Maintenance of social relationships

Activities such as continuing conversation and letter exchange has this function. Polite Form and other Honorifics expressions among people who are mentioned before, use of polite [*teinei-na*] expressions more distant. In such a case, not using close would make the relationship more distant. In such a case, not using Honorifics helps people maintain their social relationships.

3) Protection of social status

For example, following social customs concerning general good manners (or at least not going against them) serves as a guarantee that each individual exists as a member of that society. This is true about the use of language including Honorifics (especially when it is narrowly defined).

4) Exchange of essential information

This is an exchange of the information about some fact or logical relation. At a glance, Honorific expressions seem to be unrelated to this kind of function. Yet, even if the word which indicates the agent or patient is absent from a sentence, one can often understand who is doing what (and to whom) by the presence of elements of Deferential or Humble Form there. This kind of function enables the speaker to avoid the word that refers to the addressee by using Deferential Form and Humble Form, and show respect to him. When we read Old Japanese such as 'Genji Monogatari (The Tale of Genji)', we often rely on the use of Honorifics in the text and find out the semantic subject (agent) of the sentence. It is another example of using this function.

5) Forcing the other party to do something or making an appeal

This function appears in commands, requests or interrogative expressions. In short, it will demand that the addressee should perform some kind of action including some linguistic activities.

6) Expression of aesthetic value

This may not be the primary purpose of using Honorifics, but it perhaps accompanies such expressions. Typical examples may be manners in general, non-linguistic expressions that accompany speech (smiling, gesturing, the style of writing) and the manners of speech themselves. In some societies, rough or abrasive actions or speech are seen as favourable and may contribute to the maintenance of social relations or social status.

Thinking generally, Honorific expressions are always related to some kind of human relationship. Therefore out of the six functions listed above, the function of social relationships seems to be primary. Certainly this must be considered as the primary function of Honorific expressions in general. However, Honorific expressions are also related to other functions as I mentioned earlier. I will illustrate the relation between Honorific expressions and other functions in Table 8 below.

Expressions of aesthetic value are considerable in almost all the Honorific expressions. The specific contents vary considerably depending on the elements of expressions. A typical example is that the content of Beautification Expressions [*bitagō*] is manifestly different from that of Abusive Expressions [*hibō-hyōgen*].

¹⁰ a word game played by saying a word that starts with the last syllable of the word given by the previous player.

The element of each expression usually has more than one function. Some functions of linguistic communication may overlap with other functions. Some saw in the semantic content of the Honorific expressions we looked at earlier. For example, we see the function 'exchange of essential information' as a common feature in many linguistic expressions, but not so often in non-linguistic expressions. However, the function 'forcing the other party to do something or making an appeal' exists in command or request expressions but not in many other expressions.

	FUNCTIONS					
	Opening of SR	Maintenance of SR	Protection of SS	Exchange of Info.	Forcing/Appeal	Aesthetic
Sonkeigo 1 - <i>sama</i> , -(<i>ra</i>) <i>ren</i> , <i>o-ninuru</i>	±	+	+	+	+	+
Sonkeigo 2 - <i>te kadakaru</i>	±	+	+	+	+	+
Kenjogo 1 - <i>te moshigaru</i> , - <i>te sashigaru</i>	±	+	+	+	+	+
Kenjogo 2 - <i>imasu</i> , <i>zonziuru</i>	±	+	+	+	+	+
Teineigo 1 - <i>desu</i> , - <i>masu</i>	±	+	+	+	+	+
Teineigo 2 - <i>gozaimasu</i>	±	+	+	+	+	+
Bikago <i>o</i> , - <i>go</i> -	-	+	+	+	+	+
Hiba-Hyoogen - <i>me</i> , - <i>yogaru</i> , - <i>kasaru</i>	±	±	±	±	±	±
Kantooshi/Ootooshi 1 <i>moshimoshi</i> , <i>hai</i> , <i>ite</i>	+	+	±	-	+	+
Kantooshi/Ootooshi 2 <i>korakora</i> , <i>ou</i> , <i>iya</i>	+	+	±	-	+	+
Vocabulary of Chinese origin [<i>kango</i>]	±	+	±	-	+	±
Vocabulary of Children [<i>yoojigo</i>]	±	+	-	+	±	±
Command/Request 1 - <i>nasai</i> , <i>trasshai</i>	±	±	±	+	+	+
Command/Request 2 - <i>shite itadakeru</i> <i>tandesukedo</i>	±	±	±	+	+	+
Merged form - <i>chatta</i> etc.	-	+	±	-	+	+
Interjectional sound: sound of breathing air in	±	+	±	-	+	+
Handwritten letter	+	+	±	-	+	+
Printed letter	+	+	±	-	+	+
Formal clothing	+	+	±	-	+	+
Hesitant attitude	+	+	±	-	+	+

Figure 8 Honorifics and communicative functions

The six functions are abbreviated as follows.

- Opening and closing of social relationship—Opening of SR
- Maintenance of social relationship—Maintenance of SR
- Protection of social status—Protection of SS
- Exchange of essential information—Exchange of Info.
- Forcing the other party to do something or making an appeal—Forcing/appeal
- Expression of aesthetic value—Aesthetic

N.B. + - indicates whether each item has a relation or not.
± indicates that it may or may not have a relation.

Function of Non-use of Honorifics

Five strategies

We have been looking at the function of Honorifics with the assumption that we will use Honorifics. The opposite of use of Honorifics is non-use of Honorifics. There are occasions when we do not use Honorifics. We can imagine that there are certain occasions or expressions for not using Honorifics.

Hatsuzono Ootshi (1983) calls it 'avoidance [*kaihi*] of Honorifics'.

[*klasu-Honorifics*]. J. V. Neustupny (1983) calls it 'avoidance [*kaihi*] of Honorifics'. He claims that avoidance of Honorifics exists in Western languages but is conspicuous in Japanese society. For example, people avoid using Donatory Verbs [*warimorai dooshi*] regarding their own family members. Neustupny argues that it is because they don't particularly want to make a distinction whether their mother *yatta* [give, PAST PLAIN] or *agetta* [give, PAST +POL.] something. Similarly, suppose that someone received a telephone call at your workplace and was asked if a certain person was in the office or not. If *imasen* [exist, NEG +POL.], *trasshaimasen* [exist, NEG +DEF] and *orimasen* [exist, NEG +HUM] all seem inappropriate, this speaker would avoid all three expressions and try to find another form of expression.

Neustupny classifies the strategies that Japanese people use with other Japanese people to avoid Honorifics as follows:

Strategy 1. To avoid the predicate which has the most concentrated Honorifics element. For instance, instead of saying

Nihon-ni sunde trasshaimashita-ka?

Were you living [DEF] in Japan?

one may stop before *trasshaimashita-ka* and never finish the sentence. This is one of the reasons why Japanese often stop the sentence in the middle. Neustupny points out that in Japanese conversation the addressee is capable of sensing the speaker's attempt to avoid Honorifics and therefore would cooperate with the speaker in communication.

Strategy 2. To use a predicate which does not require the choice of Honorifics even if this changes the meaning slightly. For example, one can avoid using *daran* [COPULA INFERENCE PLAIN] and instead use *desho* [COPULA INFERENCE NEUTRAL] which requires no polite-plain distinction.

Strategy 3. To use Honorifics but at the same time use an expression which lowers the level of Honorifics. Use of direct questions to the addressee or use of final particles is examples of this strategy.

Strategy 4. There is a tendency to use Honorifics only once in one piece of discourse. So if you try to treat the two phrases as one, you can avoid the Honorifics in the latter part.

trashita kara odekimaru

Because [you] were[DEF] [there], you can [DEF] do.

↓

trashita kara dekiru

Because [you] were[DEF] [there], you can do.

Strategy 5. To direct the utterance not toward the addressee but toward the speaker him/herself as if *sishe* were speaking to him/herself.

e.g. *mezurashii desu.* → *waa, mezurashii...*
It is [POL] rare. Wow, rare.

Author's classification

As we have seen, there are various cases for not using Honorifics. I summarise my own classification in chart 1.

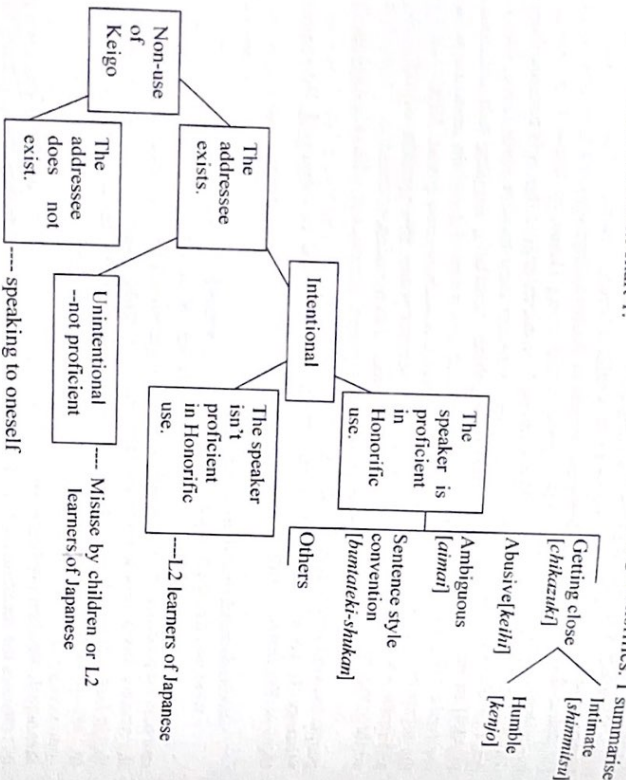


Chart 1 Classification of various non-uses of Keigo

In the above chart, "The addressee exists" is a case of ordinary communication. "The addressee does not exist" is a case where someone is speaking to him/herself. In such a case, the Honorifics element, especially polite expression, does not often appear. Neustupny's Strategy 5 belongs to this category.

'Intentional' is a case where someone intentionally does not use Honorifics for some purpose. 'Unintentional' is a case where someone does not use Honorifics but without the particular intention of not using it.

"The speaker is proficient in Honorific use." The majority falling into this category are native Japanese adults. Of course there are proficient speakers of Japanese among foreigners. "The speaker is not proficient in Honorific use." Children who are not yet competent in using Honorifics or L2 learners of Japanese who have not acquired Honorifics either. 'Getting close [chikazuki]', 'Abusive [keihi]', 'Ambiguous [aimai]', 'Sentence style habit [bunataeki-shunkan]' and 'Other' all appear when the speaker intentionally decides not to use Honorifics. "Getting close [chikazuki]" is a case where *chikazuki*, one of the characteristics of the meaning of Honorifics, mentioned in Chapter 3, is chosen. 'Intimate [shimatta]' refers to the

situation when people who are intimate with each other intentionally do not use Honorifics. 'Humble [kenyo]' refers to the situation where the speaker, in lowering himself to those who are in his in-group, chooses not to use Honorifics.

'Abusive [keihi]' is a case where the speaker does not use Honorifics to the

addressee of the referent or an abusive attitude toward him.

'Ambiguous [aimai]'. This is literally ambiguous and hard to explain. Sometimes the speaker wants to leave the relationship (whether it is based on social status or degree of intimacy) between the addressee or referent ambiguous or neutral. In such cases, the speaker intentionally avoids using Honorifics. Neustupny's Strategy 1 or 5 may be used, or the speaker might use the noun expression in order to avoid the predicate which includes the verb requiring explicit Honorific elements.

Instead of saying

A-san ga o-dekakeninaru no wa tisu datte kana.

I wonder when Mr A was leaving [DEF].

One can say

A-san no shuppatsu wa isu datte kana.

I wonder when Mr A's departure was.

and avoid using Honorifics.

To what degree you use Honorifics is an important issue to consider. To the addressee, *-de gozaimasu* may be too polite. However, *-da, -suru* may sound a bit rough. Therefore it might be safe to use *-desu, -masu* and to leave the final part of the sentence ambiguous. When someone does not want to refer to someone with *-san* but does not feel comfortable addressing them without any honorific titles, he might use an expression like *-to iu hito* ('the person who is called -').

'Sentence style convention [bunataeki-shunkan]' refers to the situation when 'Form is avoided in newspaper or magazine articles or academic theses. In polite form is avoided in newspaper or magazine articles or academic theses. In academic articles, the honorific titles of the researchers are omitted. We also cite the names of athletes without titles in sports broadcasts.

'Other' People do not use Honorifics in such in emergency situations. We shout "*Ahanai* (Watch out!)" rather than politely saying "*Ahanoo gozaimasu* (It is [POL] dangerous.)".

'Intentional' and 'not proficient in Honorifics' refers to the case where L2 learners of Japanese who are not confident about using Honorifics intentionally choose expressions which do not require use of the Honorifics.

'Unintentional' and 'not proficient in Honorifics' refers to misuse by children or L2 learners of Japanese. They are not using Honorifics but their non-use is not intentional. Misuse of Honorifics is not just non-use. There are other kinds of mistakes in using Honorifics, which I will mention later (cf. p.188).¹¹

¹¹ This part is not included in this article. This reference page number is from the original Japanese version.

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**Philology and endangered languages:
the case of Western Abenaki**

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1 Documentation and philology

Often our knowledge of languages depends completely on documents that were produced for reasons that have nothing to do with linguistics. Without the corpus of Gothic from Bishop Ulfilas (IV. Century), consisting of fragments of a bible translation and religious commentaries, we would know very little about that language. More recently, knowledge of the Eastern Algonquian language Massachusett is based largely on the translation of the bible by John Eliot, deeds and town records and the like. The Massachusett example is especially apposite here as this material has formed the basis for the current revival of the language, now called Wampanoag.

Often in current fieldwork situations, linguists will come across various kinds of documents and records (sometimes recordings). The main point to be made here is that the study of such records can play a crucial role in efforts to document and strengthen endangered languages. Such study falls under the heading "philology", or 'love of the word'. I wish to illustrate this point by looking at the case of another Eastern Algonquian language, Western Abenaki (WA).

After giving some basic information on Western Abenaki, I will give four "snapshots" of documenters and documentation of the language stretching back several centuries, and then show how several gaps in our knowledge of the language can be filled by looking at this material.

2 Western Abenaki

Algonquian is one of the largest linguistic families in North America (present day Canada and United States), both in number of languages and in geographical spread. It is distantly related (under the family name Algic) to Yurok and Wiyot (Northern California). The languages of the Algonquian family spread from the northeast of the continent (historically down the eastern seaboard as far as what is now Virginia) all the way across the northern parts of present day US and throughout Canada. Some of the better-known languages and groups of the family are Cree (various languages), Anishinabe (Ojibwa /Chippewa), Blackfoot, Menominee, Lennape (Delaware).

Linguistically, the Algonquian languages are well known for the grammatical category of obviation, intricate verbal morphology and agreement systems. Some highlights of Western Abenaki follow:

Syntax: word order pretty free. Some second position clitics: **ji** 'future,' **ba** 'conditional'. Complex verbs can include a preverb, which carries subject prefixes (in the relevant categories) and a kind of ablaut ("changed conjunct"). The two parts of a complex verbal construction can be separated by other material.

Noun classes / gender: ANimate, INanimate. Reflected in verbal morphology with big four-way distinction between Animate Intransitive (AI), Inanimate Intransitive (II),

Transitive Animate (TA) and Transitive Inanimate (TI) – latter according to gender of object.

Oblivation: when more than one third person appears in a sentence, one must be **proximate (3)**, all others **obviative (3')**. In WA, this distinction operates in animate nouns only, and such nouns (and inflections for them) go for singular and plural.

Verbal categories: As mentioned, there are four major classes of verbs: AI, II, TA, TI. Within each, there are three sets of forms, traditionally called Orders: Independent, Conjunct, Imperative (including 1st and 3rd person forms), and within each of these a number of categories: Indicative, Subordinative/Subjunctive, Conditional, Present and Preterit tenses, and for some points in the paradigms a full set of negative forms. The person/number categories include exclusive and inclusive 1st person forms, and special forms for indefinite animate subjects. In addition, Independent Indicative forms of transitives (TA and TI) encode a distinction between definite and indefinite objects.

In common with all Algonquian languages, WA has an active and complex system for deriving complex nominal and especially verbal bases.

History and geography. The current home of the Western Abenaki people is Odanak, Québec (formerly St. Francis; hence in some older literature: St. Francis Indians). Name: *Wôbanaki* (Abenaki). *Odanak* = 'at (locative case) town, village'. Many place names in New England in the final *life* or *et cetera* are from Algonquian localities. In earliest contact times the precursors of the Abenakis were apparently located primarily in present day Vermont and New Hampshire, especially along the eastern shores of Lake Champlain. The Winooski River incorporates in its name the WA word for wild onion: *winoz* + *-ki* 'territory, land'. Population movements during the 17th and 18th centuries resulted from invasions, wars between the French and English with their various Indian allies. The groups ending up in Odanak generally were allied with the French. Western Abenaki oral traditions recurrently mention "Rogers' Raid", conducted by Major Robert Rogers, under command from Lord Jeffrey Amherst, in 1759. One of the persistent historical problems has been locating the places and groups that went into the current population of Odanak. The question was dealt with in detail by Gordon Day (1981, except reprinted in Day, 1998). Today, people of Western Abenaki heritage also live in northern Vermont (Swanton) and scattered in urban areas, such as Troy, New York, or towns in their historical territories (Bellevue, Massachusetts).

The Dartmouth connection. Dartmouth College in New Hampshire was originally founded as a place to educate Indian boys. P. P. Wôshklian and Joseph Laurent (see below) were educated there. Gordon Day taught there for a number of years, and it is still important as one of the places where Day's works and collections are archived.

3 Snapshots of Western Abenaki times: four people and their work
Pial Pol Wôshklian: Abenaki educator, fl. c. 1830. Writings: *Abenaki Primer*, Book of homilies, etc.; Anon. Translation of Mark, Anon. Roman Catholic Catechism.

Here is a typical philological problem: establishing the authorship of the Mark translation and the RC Catechism. Day (1998) accepted the ascription to Wôshklian.

The Mark translation is especially useful as it tracks the English bible quite closely. Here is a sampling from Chapter 1 (with interpolated text from a King James bible, EB, the underlined and glossed words are relevant to the discussion later in this paper):

1.5. Ni mziwi Juden wjank wdlosanôssa agna ai ta
 [wja?jak Jersusalem, ni wzognehôlgonôssa tall Jordini sibok,
 .halmôtozinôl wzagawakôwôganowôl
 [And there went out unto him all the land of Judaea, and they of Jerusalem, and
 were all baptized of him in the river of Jordan, confessing their sins.]
 >>wzognehôlgonôssa he baptized them Independent Indicative Preterit 3'-3p

1.10. Ni annegita waji kposat nepik wnamton spem-
 kial fôwdatal, ta wnamhó. Wjijwimwaskwifiji paki wôbi
 pelaz sókhi pnosat ni ôskikôgon.
 [And straightway coming up out of the water, he saw the heavens opened, and the
 Spirit like a dove descending upon him.]
 >>ôskikôgon 3'-3 descending on him

Joseph Laurent / Sozap Lolô was an Abenaki chief and educator. He published in 1884 *New Familiar Abenakis and English Dialogues*. This work is an outstanding example of a linguistic work by a native speaker of a North American language. The book deserves to be published in a critical edition.

Gordon M. Day (1911–1993) was the principal modern researcher on Western Abenaki. Originally trained in forestry, Day became interested in the ecological and agricultural practices of the original inhabitants of his home country in Vermont. He was one of the first ethno-historians to correct the traditional myth of the "wild and uninhabited land" that formed a big part of the English invaders' self-serving ideology. Day devoted his life to the study of the eastern Algonquian nations, especially the Western Abenaki (cf. Foster and Cowan, 1998). He produced a considerable body of published work on the language and history of the Western Abenaki, and left behind quite a lot of material, including recordings, archived at Dartmouth and in the Museum of Civilization in Hull, Québec.

Steven Laurent (Atian Lolô), 1909-2001, was the son of Joseph Laurent. He lived in New Hampshire and devoted many years to work on his language, published edition with English translations and index of Abenaki dictionary by Father Joseph Aubrey (1673-1755), Jesuit missionary. In 1957 he recorded (with Gordon Day) the entire text of his father's book Laurent, 1884.

4 Paradigms lost
 1. Day (1964) reports: WA does not show special forms for obviative subject in Animate Intransitive verbs. In general, examples displaying crucial forms are hard to find, almost impossible to elicit (in my experience).

bemôzô [sic for *bemôzwo* in GDD]: *she* lives (3, 3') [Day 1964]

Ives Goddard in the major work on the Algonquian Independent Indicative (Goddard, 1967) cites Laurent's paradigms for WA, includes no AI 3' forms nor any inverse Obviative on Proximate (3' - 3) TA forms.

Phonological attrition has made the obviative inflections either invisible or very unobtrusive: 'horse' *ases*, obviative form *asesa*; 'woman' *phanem*, obv.: *phanemo* (<...mw-a); 'man, male' *zanôha* obv.: *zanôha*.

In general, many final vowels, especially *a*, were lost, some restored by analogy.

In verbal paradigms, one mark for obviative arguments is *-a / -i*. The choice depends on morphological environment, the variable vowel is coded usually as *-V*, occurring also in the plural inflections *-Vk / -VI (AN / IN)*.

So there are two questions: (1) has the obviative been lost from modern WA, remaining perhaps only in vestigial form (possessed animates, see below)? (2) if lost, when did the loss take place? These are philological / historical questions.

In a book published in 1932, Henry Lorne Mastia (another Abenaki educator and chief) gives paradigms for nouns in which he calls the obviative forms "accusative". But this identification is belied by the texts in the same book.

5 ...and regained

1. Obviative AI forms. Here is a general Algonquian fact about the obviative: in 3rd person possessing forms, the possessed noun is always in the obviative form. Compare from Laurent, 1884:

- | | |
|---------------------|-----------|
| 1. <i>W'kaozema</i> | 'his cow' |
| 2. <i>N'kaozem</i> | 'my cow' |

Note: *-em* marks possessed items, 'cow' is *kaoz*.

So we should be able to make up easy examples with possessed nouns as subjects to test for distinctive inflections? There are in fact some such examples in Laurent 1984:

- | | |
|----------------------------------|------------------------------|
| 3. <i>Wibnigio n'-d-aasonn</i> . | 'My horse is grey.' |
| 4. <i>Wibnigio w'-d-asomma</i> . | 'His (her) horse is grey.' |
| 5. <i>W'meljassa wazabizoa</i> . | 'His (her) mitens are thin.' |
- (mitens are Animate, notice lack of sg / pl distinction: 4 also means 'his horses'.)

Compare also these examples from Laurent, 1884:

- | | |
|-------------------------------------|-------------------------|
| 6. <i>N'kaozem -ji ônkohôn</i> . | 'My cow will be sold.' |
| 7. <i>W'kaozema -ji ônkohônna</i> . | 'His cow will be sold.' |

- | | |
|--------------------------------------|--------------------------|
| 8. <i>N'kaozemak -ji ônkohônak</i> . | 'My cows will be sold.' |
| 9. <i>W'kaozema -ji ônkohônna</i> . | 'His cows will be sold.' |

(These examples are actually historically a different category: indefinite subject TA forms, with the *-a*-marking the obviative object; the analysis in WA is somewhat up for grabs.)

So it looks in fact, contra Day, that WA, at least in 1884, could inflect AI verbs for obviative subjects.

6 The other gap: TA inverse 3' - 3 forms

Joseph Laurent (1884) includes a section in his paradigms called "Relative Conjugation". It includes what are disparate forms (from a contemporary analytic point of view): ThemeSign 2 forms for 3 and 3p subjects and "Me and You" forms (ThemeSigns 3 and 4). Some examples (from Laurent 1884):

- | | |
|-----------------------------|-------------------|
| 10. <i>K'kezalmel</i> . | 'I love thee.' |
| 11. <i>K'kezalmelbena</i> . | 'We love thee.' |
| 12. <i>K'kezalmegw</i> . | 'He loves thee.' |
| 13. <i>K'kezalmegok</i> . | 'They love thee.' |
| 14. <i>K'kezalmi</i> . | 'Thou lovest me.' |
| 15. <i>K'kezalmitha</i> . | 'You love me.' |
| 16. <i>N'kezalmegw</i> . | 'He loves me.' |
| 17. <i>N'kezalmegok</i> . | 'They love me.' |

Of these forms only those with 3 and 3p subjects show ThemeSign 2 (*egw*) (underlying *-gok* < *gw*-(*V*)k).

As reflected in Goddard's 1967 summary, there are no examples in his source, Laurent 1884. These forms in the Independent Indicative should be built on the ThemeSign 2 (*egw*), Inverse TA are all those with 3 or 3' subject and 1st or 2nd object, or 3' (obviative) subject and 3 or 3p objects. Or are there none?

However, in other older sources we find lots of examples of 3' - 3 and 3' - 3p forms.

Mark (1830) (cf. above for the first two):

- | | |
|------------------------------|---|
| 18. <i>wzognebôlgonôssa</i> | 'he baptized them' [Indrnc Preterite 3' - 3p] |
| 19. <i>oskitôggon 3' - 3</i> | 'descending on him' |
| 20. <i>wdihigo</i> | 'he said to him (3' - 3) Mark 1.40 |

Mastia (1932):

- | | |
|---------------------------|--|
| 21. <i>wmitgon</i> | 'gives' 3' - 3 (in return receives...) |
| 22. <i>weskoh8gon8zsa</i> | 'they were intercepted by the Iroquois' 3' - 3p Pret |
- (note: 8 = 0)

These forms in *-go(n) 3' - 3* and *-gonó 3' - 3p* appear regularly in Mark, Masta, and in Day's manuscript materials. Still, there are many mysteries (to EB at least) in how to analyze these forms synchronically and diachronically. Comparing Penobscot paradigms (Voorhis, 1979) there seems to be a mixing in of an old definite-indefinite ("finite-absolute") distinction and forms from "indefinite subject" and inanimate subject patterns.

From these dates, spanning the work of J Laurent, I conclude that the absence of these forms in 1884 is fortuitous, but there is still conflicting evidence, some hard to interpret.

FINAL MORAL: Multiply the philological and linguistic work to be done on Western Abenaki thousands-fold. There is a huge need for workers and work! The intellectual rewards are tremendous.

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* (EB Website: <http://www-unix.oit.umass.edu/~ebach/papers/lingka.htm>)

Linguistic reconstruction: methods vs. interpretations*

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0 Objectives

The aim of this paper is to investigate the central methods of linguistic reconstruction and the theoretical models associated with them. By "central methods" I understand the two basic ones, Comparative Reconstruction (CR) and Internal Reconstruction (IR). They can be considered central because, despite the advent of other methods such as glottochronology, they still form the nucleus of reconstructive techniques, without which no serious reconstruction can be attempted. This is because both methods, unlike other, more marginal ones, are strictly based on the absolute *sine qua non* of any historical linguistic study: the Regularity Hypothesis. Both CR and IR will be considered in the light of their alleged theoretical background, which for CR is held to be the Neogrammarian model, while IR relies on structuralism. I will come to the conclusion that this distinction is irrelevant for the method itself, because Neogrammarians and Structuralists differ not so much in the method but in the interpretation of the results of reconstruction; the difference follows from the different theoretical models of phonological change. I will point out, furthermore, that because IR is not a historical method as such but, instead, it is the historical interpretation of a basically non-historical method (from which it follows that it has serious flaws), CR still remains as the central (possibly only) really historical and exact method of reconstruction, but, interestingly, not because it is inherently historical, but thanks to the nature of the data it works with.

This paper is structured as follows. In Section 1, I provide a brief outline of the Comparative Method, followed by a summary of Internal Reconstruction in Section 2. Section 3 discusses the differences between how the Neogrammarians and the Structuralists differ in their views on reconstruction. Finally, Section 4 concludes the discussion.

1 Comparative reconstruction

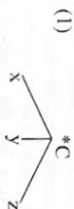
The theoretical basis of CR is the Neogrammarian doctrine known as the Regularity Hypothesis. In its strongest form, it claims that all sound change is regular in the sense that it occurs according to fully mechanical phonetically conditioned rules, operates "with blind necessity" (it is not aware of its own consequences), and due to this it admits no exception. To take a simple example, if in a language L voiced stops are lenited to fricatives intervocalically, they will always do so in that environment, and no word can escape the consequences of the change. The Regularity Hypothesis makes it possible to set up regular sound correspondences between related dialects¹. To return to the previous example, if L has a relative L' in which the given change does not take place, then any intervocalic voiced fricative of L regularly corresponds to a homorganic voiced stop in L', and vice versa.²

* My heartfelt thanks go to my professor and colleague Ádám Nádasy and my colleague András Cser, who have made extremely valuable comments on an earlier version of this paper. Of course, I am alone responsible for remaining errors (especially because I have not followed some of their suggestions).

¹ Or languages. I will use the terms *dialect* and *language* interchangeably, since there is no principled difference between them from a comparative viewpoint.

² Assuming, for the sake of simplicity, that no other change has taken place in either language as well as that there are no voiced fricatives in the proto-language, at least intervocalically.

The existence of regular correspondences is what makes CR possible. The method is a rather simple mathematical operation in its first stage, as pointed out by Lass.³ I will use this example here. Take three related languages X, Y, and Z; let x, y, and z respectively, be regularly corresponding units (sounds, for our purposes) in these languages. We can create a set $C = \{x, y, z\}$, where C stands for "cognateness". This, of course, is a simple relation, which is symmetrical ($x \in C_y \supset y \in C_x$) as well as transitive ($(x \in C_y \text{ and } y \in C_z) \supset x \in C_z$). So far C is nothing but a label to give a name to the set; as a result, we have not yet made any historical statement: all we have is a static pattern. We can, however, move on to the second step and assume that C is not a label but an entity, i.e., a physically existing object which is related to x, y, and z historically: it is their ancestor. The relation "ancestor of", of course, is neither symmetrical nor transitive. We can conceptualize the relation in the form of a tree as in (1):



If C is a physically existing object, it is possible (or even obligatory; see Section 3.1.) to assign physical properties to it. In case x, y, z are sounds, these will be, of course, phonetic properties. This is the final stage of reconstruction (at least on this level; we can move one level up and reconstruct morphemes, etc.).⁴

Let us take a specific example, using material illustrating a correspondence that derives from intervocalic spirantization. Standard Portuguese intervocalic [d] regularly corresponds to [ɔ] in Castilian Spanish: Portuguese *canhada, lado, cidade* ('sung-fem', 'side', 'city') correspond to Castilian *cantado/a, lado, ciudad*, respectively. We can set up $C = \{d, \emptyset\}$, and assign C historical-ontological status, which requires (or makes it possible) to assign a phonetic value to it. Since we know that intervocalic position is a typical lenition site, we assume that $C = [d]$ in Proto-Western-Romance, the ancestor of both languages.⁵ We can represent this as in (2):



This is simple so far: we assume a change in one language. The projected proto-character (sound) is thus represented in a presumably unchanged form in one descendant. But this is not always the case: there are many instances where the comparative method requires one to reconstruct something that hasn't in fact survived. A classical example of this is what can be labelled the "back stop series" of Proto-Indo-European (PIE). For a detailed account, see any good textbook on Indo-European linguistics, such as Szemerényi (1990): I will give a simplified and rather abstract presentation here. I will use the following abbreviations: K = velar stops, K^w = labiovelar stops, S = sibilants, P = palatal stops.

³ 1993:161f.

⁴ Cf. Fox (1995:58ff) for proposed stages of reconstruction.

⁵ This stage itself represents a lenited state of intervocalic stops, since the ultimate source of these cognate items is Vulgar Latin **canhada*, **lado*, **ciuitate*, with an intervocalic voiceless stop.

The Indo-European languages have been divided into two major groups labelled "Salerni" and "Centum". Between the two groups, the following correspondences hold:



We can make three correspondence sets:

$$(4) \quad \begin{array}{l} C_1 = \{K, S\} \\ C_2 = \{K^w, K\} \\ C_3 = \{K, K\} \end{array}$$

The Neogrammarian reconstruction of the three proto-segments is as follows⁶:

$$(5) \quad \begin{array}{l} *P = \{K, S\} \\ *K^w = \{K^w, K\} \\ *K = \{K, K\} \end{array}$$

The crucial point is that no daughter language has palatal stops deriving from the proposed *P series: it is reconstructed only because there are three correspondence sets, hence there ought to be three proto-segment series. I will return to the significance of this fact in Section 3.2; let us now turn our attention to IR.

2 Internal reconstruction

The best-known early application of the method known as IR was Ferdinand de Saussure's influential *Mémoire* (1878), probably one of the most important books ever written on a linguistic topic.⁷ Saussure used the method to reconstruct the phonological system of Pre-Indo-European, i.e., the stage preceding PIE reconstructed via CR.⁸ The essence of IR is that it starts out from (*non-suppletive*) alternants within one language at a given time; assuming that the alternation (i.e. non-identity) reflects earlier identity, i.e., it arose at some point in the history of the language due to some sound change(s); it attempts to reconstruct the original single form which the alternants are derived from by regular sound changes.⁹

Take as an example the word-final devoicing of stops in German. Let T be any voiceless stop and D any corresponding voiced one, where corresponding, of course, means that the difference between T and D is in voice only. There are many stems which sometimes occur with final T (if it is also word-final), sometimes with a final D (if it is not word-final but followed by suffixal material). So, for example:

⁶ I neglect the detailed argumentation here, since it is quite immaterial for this discussion.

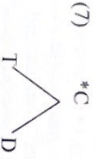
⁷ Not the first one, though, in spite of the fact that this is what textbook wisdom says. As Andreas Czer has pointed out to me, some earlier Neogrammarian laws had already been arrived at — partially, at least — by the application of IR. The most notable example is probably Verner's Law, based besides comparative evidence — on voiceless — voiced alternations within Germanic itself.

⁸ Szemerényi 1990:86–97, 127–137.

⁹ Lass 1997:232–41, Anttila 1989:264–73.

- (6) Ra[ɫ] 'wheel-NOMSG' ~ Ra[ɫ]dɛs 'wheel-GENSG'
 We[ɫp] 'woman-NOMSG' ~ We[ɫ]bɛs 'woman-GENSG'
 Ta[ɫk] 'day-NOMSG' ~ Ta[ɫ]ɛ 'day-NOMPL'

We can now set up a correspondence set $C = \{T, D\}$ as the first step. As the second step, we interpret C as the ancestor of both T and D, as in (7):



As the final touch, we assign phonetic properties to *C. We can safely assume, on both theoretical and language-internal grounds, that *C = D, i.e., historically, such occurrences of voiceless stops derive from voiced ones via the regular sound change of Word-final Devoicing.

Anyone familiar with phonological analysis will have noticed that this is the same as what one does in a process-based paradigm (such as the SPE model) when analyzing synchronic alternations. Indeed, Anttila says, "Internal reconstruction (...) is *exactly* the same as morphophonemic analysis" (emphasis mine).¹⁰ Please note the word *exactly*: it implies that there is no difference between the two things. Indeed there isn't: the method is exactly the same. But then, where is the difference? After all, synchronic analysis is *not* internal reconstruction. The answer is that the difference lies not in what one does but how one interprets the results. In synchronic analysis, we set up C as a set and assign a theoretical status to it, and we may as well stop there, but we can go on and claim that the alternants are actually derived from it (if we believe in phonological processes); in other words, we can regard C as an underlier. Internal Reconstruction is none other than assigning historical status to C, that's where IR is, for the historian, more than simply a synchronic analysis: that's why it's something historical. In other words, set up an alternation, label it, and whether you do IR or synchronic analysis depends on the content you give to your set: in synchronic analysis, it is "alternates with"; in IR, it is "cognate with".¹¹ I will return to this point later, but now let us see the limits of IR and its fundamental dependence on CR.

As Anttila says, IR is but morphophonemic analysis as far as the method goes. In fact, I take the opportunity to correct Anttila here: IR is not necessarily based on *morphophonemic* alternations, although this is indeed the majority case: any purely *phonologically governed* alternation is liable to such an interpretation. (See below for such an analysis of Non-thoticity.) Second, as alluded to above, I must disagree with Anttila in equating IR with synchronic analysis: IR is not the same as synchronic analysis: it is a historical interpretation of the same data as used for synchronic analysis. Or, to put it differently, IR = synchronic data + historical interpretation.

¹⁰ 1989:264.

¹¹ "Cognate with" is understood here, of course, in a non-comparative sense (roughly, "having the same ancestral form").

Nonetheless, IR has serious flaws. I illustrate this with two examples. First, take English Spirantization, illustrated by pairs like *defend* ~ *defens(ive)*, *omit* ~ *omission(s)*, etc. At first sight, we might be tempted to use IR to reconstruct an earlier single stem form underlying the present-day alternation. But we know that these words are Latinate borrowings, in which the alternation is already present: in other words, English borrowed the alternation hand in hand with the words. It would be wrong to assume a Spirantization Rule as a sound change in the history of English: a synchronic rule, then, is not necessarily a historical change.

Second, although an alternation may point to a historical change, it may do so in the wrong way. Consider those non-rhotic accents of English which have obligatory, full R-liaison, i.e., both Linking and Intrusive R, such as London English. This means that a set of words ends either in a non-high vowel or a non-high vowel + R, as in *car* /ka: ~ kar/, depending on what follows the word. In a synchronic analysis, we can assume a rule of R-insertion to handle the alternation. But we know that historically, there are two distinct processes: (1) R-dropping, (2) R-insertion. If we did not have any historical information at our disposal, we could not choose which process to assume: it is due to the testimony of other accents (as well as orthography, grammatical descriptions, etc.) that we know what happened. For example, take the words *spa* and *car*: both have R-ful and R-less alternants, in exactly the same environments; there is no difference between the two words. Historically, though, one of them is R-ful, the other R-less: but based on the present-day language alone, we can't tell which is which. The appearance of Intrusive R results in what we can regard as a kind of merger: the historically distinct categories -V# and -V# merge, yielding a situation where they have become context-dependent variants. This reflects a basic problem one must face when doing IR: unconditional merger, which renders previous contrasts unrecoverable for the method. To sum up, IR requires comparative backup, and therefore, it is insufficient to solve this particular problem.

This much has often been said. Yet, we must be careful here, because CR is not almighty, either. Consider another type of accent, in which there is no R-liaison whatsoever, such as Southern US English (SUSE). Here, it would not even occur to anyone to reconstruct anything, because we have no alternation: *car* is always pronounced /ka:/. Let us now imagine the situation that all we have access to is SUSE and London English. In an analysis of the latter, we are faced with the problem described above: but would SUSE provide the necessary 'comparative backup'? It would not. We are still faced with the same problem, because the difference between two accents can still be accounted for in two ways: either by assuming that SUSE is conservative and London E innovates (via R-insertion) or that SUSE is innovative (R-dropping). We need even further comparative support, either from thotic accents or from ones which have linking but no intrusive R (if there are any such accents left, maybe conservative RP speakers have it). The possibilities of thoticity and R-liaison are summed up in (8):

- (8) > London E: /ka: ~ kar/, /spou: ~ spou/
- > Southern US E: /ka:/, /spou/
- > GenAm E: /kar/, /spou/
- > ? Cons RP: /ka: ~ kar/, /spou/

To sum up this lengthy discussion: the fact that IR is not flawless is not in itself an argument against it or in favour of CR, because CR is not flawless either.¹² The point is that when we have access to both IR and CR, and the two disagree, CR takes precedence, but this is a logical consequence of the fact that CR works with data from several dialects. It is in this sense only that CR is superior.

3 Comparative reconstruction: the method vs. its interpretations

In Section 2, we saw that IR is not an independent historical method, but simply the historical interpretation of a fundamentally non-historical procedure. Furthermore, it has been pointed out that, whenever possible, it must be checked against results provided by CR. In this section, I will examine CR against the two theoretical models widely used in reconstruction: the Neogrammarian and the Structuralist models. I will argue that the two theoretical frameworks differ not so much in their reconstructive methods but rather in how they interpret the results. First, however, I will discuss two differing views on the status of reconstructed entities: the "idealists" versus the "realists" positions.

In Section 1, I established three steps of reconstruction: (1) setting up the correspondences; (2) assigning historical status to the set label; (3) assigning phonetic properties to the reconstructed item. Step 1 is the basis for any reconstruction whatsoever, but what about the rest? Do we really need to go on? In fact, why assign phonetic reality to our hypothesized entity? Why not omit Step 3? Or, why not omit Step 2 as well, and say, with Meillet that "the reconstructions are merely symbols with which we express the correspondences in an abbreviated form"¹³ Indeed, this stance has been taken by many linguists including Meillet and it has been labelled the "idealist" or "formalist" position (as opposed to a "realist" stance).¹⁴ For an idealist, then, there are either no "proto-segments"; reconstructed forms are just set labels; or, a bit less abstractly maybe, "proto-segments" are not labels, but quite abstract (past) entities, whose phonetic content is immaterial; what counts is that the entity underlies the correspondence set. Few (if any) historians would nowadays take the rather extreme position formulated by Meillet, and it must be pointed out that Meillet himself was much more a "realist" in practice. I'll return to this point below, but first I will consider CR as a historical method; then I compare the Neogrammarian and the Structuralist models as far as their reconstructive techniques are concerned.

Step 2 of (any) reconstructive technique, i.e., the assignment of some "thing" status to a set label, yields tree diagrams such as the one in (1), repeated here as (9) for convenience:



This is what we get either by IR (= synchronic analysis) or by CR. In both cases, take a correspondence set, label it, and call the label an object, which "turns into" other

¹² In fact, no scientific method is flawless, because we can only use what we have access to; as formulated so beautifully and appropriately by the British physicist John D. Barrow in *The world within the world*, our universe is what we can see; what we cannot is beyond it.

¹³ Fox 1964:42; my translation.

¹⁴ Fox 1993:7-17, Lass 1993, 1997:270ff.

objects. In synchronic analysis, the "object" is an underlying unit from which surface forms are derived by (ordered) rules; in IR and CR, it is a historical (past) object, from which attested (present) ones derive by chronologically ordered sound changes. The method, then, is no different, and we have seen this already in the case of IR and synchronic analysis. We can now see that CR is based on the same method. There is, however, a crucial difference: *x, y, z* are, for CR, from different languages. This is very important, because *C*, whatever it is, cannot be sensibly interpreted as a common "underlying representation"; the only sensible interpretation is genetic, i.e., historical: the relation "cognate of" is reinterpreted as "ancestor of". Alternatively, we are left with the possibility of not interpreting it at all, or rather, not even calling it an object: this is basically the idealist position. If one prefers not to be an idealist, one must interpret *C* as a historical object; as it is a historical object, from which physically existing present-day objects are derived, it must have physical (phonetic) form. Note, however, a very important point: CR as a method does not start out as a historical method; either: the basic procedure is the same as for synchronic analysis or IR. What makes CR historical is the nature of the data it has to work with: that the data are from related languages, assumed to be related because they derive from a common ancestor: relatedness equals ultimate monogenesis. CR is not inherently historical: it is forced to be historical. A synchronic alternation (within one dialect, of course) in itself does not force one to do a historical analysis. But if one does choose to do so, it is called IR. We can sum up the similarities and differences in a table, as in (10):

(10)

	Sync. analysis	IR	CR
Set up correspondence?	Yes	Yes	Yes
Content of set?	"Alternates with"	"Cognate of"	"Cognate of"
Interpretation?	"Underlier of"	"Ancestor of"	"Ancestor of"
Phonetic content?	Yes/No	Yes/No	Yes/No

The position of a full interpretation up to assigning phonetic content, is basically the position of the Neogrammarians, for whom the question of "idealism" would not have occurred. As opposed to them, the Structuralist school found it not only acceptable, but often desirable (of course, not necessarily everyone!). Of the two central reconstructive techniques, CR and IR, the former is said to be a Neogrammarian invention, while IR is considered to be a structuralist one. We have seen that the two methods are fundamentally the same in their procedures: it is the nature of the data they differ in. IR, then, is none other than CR applied to a different type of data, and as such, it does not constitute a principally new method.¹⁵

Furthermore, let us recall the Neogrammarian (comparative) reconstruction of the "back stop series" of PIE (cf. (5) above). Why are there three different series reconstructed? After all, no daughter language has so many; they have two series only. The answer is, because there are three different correspondence sets. There's no direct phonetic proof for the "palatal" series at all; the whole system is typologically suspicious (it is at least highly unusual for a language to have palatal *and* velar *and* labiovelar stops); moreover, the [K,K] correspondence is extremely rare. Why did the Neogrammarians reconstruct such a system? Because they applied the comparative formula in a rigorous manner. In this sense, they were more structuralist than the Structuralists themselves. It is highly enlightening to consider Meillet's

¹⁵ Anttila 1989:229.

position on the PIE stop system: he (and many other linguists) represents the view that PIE had only two back series, *K^w and *K; the Centum group preserves both intact, while the Satem group palatalizes the velar (*Kj) series (which then ultimately turn up in the atested languages as sibilants) and de-labializes the labiovelar series. Meillet uses typological and phonological-historical arguments against the Neogrammarian position, pointing out that the paucity of {K,K} correspondences may be an indication of "deviant" developments. Interestingly, Meillet is, in fact, much less "structuralist" than the Neogrammarians (and, moreover, a realist in practice).

The two schools, then, do not really differ from each other so much as far as reconstruction goes. The main difference is in the interpretation of the results. We can now ask where the differences come from. The answer lies, as far as I can see, in the different conceptions of phonological change. Neogrammarians thought in terms of sound change; Structuralists concentrated on changes in the phoneme system. For them, a sound change in itself was not a linguistic change if it did not alter the phoneme system. For example, if in a language [u] is fronted to [y], which is a novel decrease, only the phonetic realization of one phoneme alters. This, of course, is an abstract view that few if any phonologists would nowadays take.¹⁶ But it explains the origins of the idealist position: it is phonemic differences that count, so we must reconstruct phonemes (we cannot reconstruct allophones anyway, unless we have some special clue). Phonemes, however exactly one conceptualizes them, are abstractions. This is what makes the idealist position possible (but not obligatory: that is a further step). Neogrammarians dealt with sounds, hence idealism was impossible for them.

4 Conclusion

To sum up, the basic difference between Neogrammarians and Structuralists is that for Neogrammarians, all three steps of reconstruction are self-evidently compulsory; Structuralists can omit the last step(s). As far as IR is concerned, it is but a historical interpretation of a non-historical method. This is not to deny its significance: there are many instances where comparative evidence is not available, either because the language has no (close) relatives or because we want to reconstruct earlier stages of a proto-language (as Saussure did). But the central core of reconstruction is still the comparative method: IR is the application of CR, a method devised to handle data from a historical perspective, to data which need not be interpreted historically. Furthermore, IR — generally associated with Structuralism — is not a Structuralist invention: the 1870's had seen several examples. Linguistics may have undergone revolutionary changes during the twentieth century, but in reconstructive techniques, we still use what our Neogrammarian predecessors invented. This note is not meant to devalue the work of twentieth-century historical linguists (including Structuralists — they have done an excellent job, especially in our understanding of language change) and to imply that we have no reason to be satisfied, but to turn the reader's attention to the extraordinary achievement of the old nineteenth-century masters — who deserve the highest respect and whom we can take pride in.

¹⁶ In fact, Structuralists were also interested in the phonetic content of oppositions, so I am being somewhat unfair, my excuse is that I use these *extreme* examples to refute an *extreme* position.

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What is wrong with linguistics?*

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1 Introduction

My answer to the question raised in the title of this paper is simply that Linguistics is, traditionally, one of the Humanities, and that thus its explanations suffer from a certain lack of precision and lack of testability which is not unusual in the Humanities.

In order to make this point clearer, I will first explain why inductive reasoning, which is very wide-spread in linguistics, is flawed. (An example of inductive reasoning would be a case in which someone tries to provide evidence for a proposal by pointing to examples where the proposal "works" but not to where it does not work.) I will then clarify in what way Popper's demand that a hypothesis must be testable is epistemologically sound.

After this preparation, I will illustrate why a number of widely-held and supported linguistic hypotheses/theories are untestable or falsified, and therefore flawed. The set of problematic views discussed will include the (1) Phonetic Hypothesis, i.e., the claim that phonological phenomena are phonetically motivated, (2) Lexical Phonology, (3) Optimality Theory, the (4) Grammaticality Hypothesis, i.e., the communis-opinio view that there exists a Language Acquisition Device on the basis of which anyone (or, possibly, any child) acquiring a language knows (albeit unconsciously) about any form it is presented with whether that form is grammatical or not, and (5) Descriptive Linguistics.

Subsequently, I will sum up the main strategies employed in Linguistics in order to maintain problematic theories.

2 The problem of inductive reasoning

Popper elaborated on the problem of inductive reasoning in a number of seminal works (1934, 1959, 1972). In short, a case of inductive reasoning occurs when we think that we can infer from statements about which we do have experience (e.g., *The sun rose in the morning on the last 124,485 days*) statements about which we have no experience (e.g., *The sun will rise tomorrow morning* or *The sun rises every morning*.)

As Ploch (2003c) has shown, inductive reasoning typically occurs when researchers try to avoid arbitrariness and end up building a flawed version of non-arbitrariness into their theories. So in order to understand the problem of inductive reasoning, let us approach this topic via an explanation of why arbitrariness is scientifically bad and what unsound non-arbitrariness as a misguided attempt to avoid arbitrariness looks like.

Ad-hoc-ness/arbitrariness in scientific research arises when untestable assumptions¹ that prevent the falsification of another assumption are employed in order to *immunise* this other assumption *against refutation* ("immunisation against refutation", Popper's

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¹ An assumption is testable only via its (existential!) predictions, not by itself, i.e., not without such predictions, cf. section 3.

phrase, cf., e.g., 1934, 1959). This point should become clearer by looking at the following two examples.²

(1) Examples of unscientificity via arbitrariness (*ad-hoc-ness*)

a. *Biorhythms*:³

"...there are many people who do not fit the predicted patterns of biorhythm theory. Rather than accept this fact as refuting evidence of the theory, a new category of people is created: the arhythmic."

b. *Astrology*:

"Astrologists are often fond of using statistical data and analysis to impress us with the scientific nature of astrology. Of course, a scientist's analysis of the statistical data does not always pan out for the astrologer. In those cases, the astrologer can make the data fit the astrological paradigm by the ad hoc hypothesis that those who do not fit the mold have other, *unknown influences* [my emphasis] that counteract the influence of the dominant planets."

Generally, we can say that "whenever the theory does not seem to work, the contrary evidence is systematically discounted" (Carroll, "ad hoc hypothesis"). Note that an *ad hoc* hypothesis often consists of a reference to unknown influences. It goes without saying that the terminological (labeling without testable predictions) of such influences does not make them more known, testable or repeatable.

The common mistake that I want to refer to here occurs when researchers try to avoid arbitrariness as exhibited in (1) and end up getting the flawed version of non-arbitrariness into their theories. This is to say that they try to countermand *ad-hoc-ness* by deriving observable facts from assumptions/explanations which they propose because they mistakenly believe that abstraction is the opposite of *ad-hoc-ness*, and that therefore the derivation of observable data from generalisations provides evidence for these generalisations. As a result, this method consists in pointing to data accounted for by some generalisations, a method which subscribes to assumption that explanations can be confirmed or verified by some data or accounts for data. This is a justificationist⁴ approach to science, which, for logical reasons, does not work.

It is important to demonstrate that the notion "confirming evidence" is methodologically problematic and why observations cannot confirm assumptions, i.e., why assumptions cannot be provided evidence for by pointing to data they account for, and why an ever increasing amount of such data cannot confirm or probably any assumptions. So for example, no matter how many phonological phenomena the "Phonetic Hypothesis" for example, no matter how many phonological phenomena the "Phonetic Hypothesis"

² Cf. "ad hoc hypothesis", "biorhythms", "astrology" in R. T. Carroll's Skeptic's Dictionary. The examples quoted in (1) are taken from there too.

The precise details as regards the claims made by biorhythm theory are not relevant here. What matters is that falsifying data is systematically discounted in this pseudoscientific theory. However, those interested may want to look at Hines (1998) and the references therein. To provide one detail, biorhythm theory claims that life is subject to cycles, each type of cycle with its own specific duration (e.g., the 23-day physical cycle and the 28-day emotional cycle), and that, based on where one's life is situated at the moment in terms of these cycles, every day corresponds to a specific likelihood for each person to do better or worse in specific areas of their life which these cycles cater for (their physical, emotional life, etc., are such areas).

⁴ Regarding justificationism, cf. the index of Popper (1983: 414).

is, i.e., the doctrine that phonological phenomena are motivated phonetically (cf. Kaye 1989; Ploch 1997, 1999, 2003a; Piggott 1999), accounts for, none of them and no number of them provides evidence for the Phonetic Hypothesis; in addition, no matter how many more pieces of data that the Phonetic Hypothesis can account for will be found, not one piece of data will make this hypothesis more likely to be true.

The basis for my (or, really, Popper's) claim that explanations cannot be proven or probabilified is based on logic and mathematics. Consider the equations in (2):

(2) Two intuitively sound equations

a. Error!

b. Error!

We all "know" in the intuitive sense, that if we add a number greater than zero, e.g., 3 000 000, to any other number x , then the result of x divided by some other number y , say 10 000 000, is smaller than what we get if we first add that other number greater than zero (3 000 000) to x , and then divide the result of this addition by y . So one quarter is smaller than two quarters is smaller than three quarters. Analogously, if we have observed the sun rise three times and compare this to a situation in which we have observed served the sun rise four times and compare this to a situation in which we have observed it rise 10 000 times, we think intuitively that in the second scenario it is more likely to rise again. The more often we observe something happen the more likely we feel it is to happen again. When we think like that, we induce a universal statement (*The sun rises every morning*) from one or a number of existential statements (e.g., *On 5 November 1998, the sun rose in the morning*, *On 6 November...*, etc.). Since a (strictly) universal statement encompasses an infinite number of existential statements (based on an infinite number of observations), i.e., since *The sun rises every morning* is a statement that is generally true and is thus valid for an infinite number of mornings, the observation of three mornings on which the sun rose in comparison to the observation that it rose on 10 000 mornings is a comparison between three or 10 000 mornings out of an infinite number of mornings. So when we look for confirming evidence for any assumption (say, *The sun rises every morning* or *The phonology is phonetically grounded*) by finding more and more examples (i.e., observations resulting in existential statements) where our resulting existential statements are existential versions/instantiations of the (universal) assumption that we are trying to prove/confirm, then we very much believe that the equation in (2b) is valid. Given this validity, we also think that the more existential "instantiations" we find the more likely the assumption we are trying to confirm is to be true (because we have observed a higher percentage of all the cases that are "out there" and could possibly be observed).

This induction is, however, not logically valid, as Hume had already found out.⁵ It is neither the case that a universal statement can be logically inferred from any number of existential statements nor can its truth be probabilified by an ever increasing number of

⁵ Cf. Hume (1739) 1888, [1777] 1966). Hume could not solve the problem connected to the invalidity of inductive reasoning, i.e., how it is possible, then, to count on, say, the sun rising again, as we all do. For Popper's solution to Hume's problem, cf. Popper (1934, 1959), or, for an even more detailed discussion, Popper (1983: chapter 1).

"confirming" evidence. The reason for this can be made apparent by the equation in (3), which in opposition to (2b) is valid:

- (3) The definition of the two symbols $+\infty$ and $-\infty$ (excerpt from Apostol 1974: 14, section 1.20, definition 1.24)
 By the extended real number system \mathbf{R}^* we shall mean the set of real numbers \mathbf{R} together with two symbols $+\infty$ and $-\infty$ which satisfy the following properties:

a) $\forall x \in \mathbf{R}$, then we have

Error!

So any real number divided by (positive or negative) infinity equals zero. Consequently, no piece of data (existential statement) confirms any explanation/assumption (universal statement). In a comparison of two situations in the first one of which one has observed something happen 5 000 times and in the second one of which, say, 10^{1000} times, it is not the case that, in the second scenario, one has provided more evidence for the assumption in question or at least made it more likely to be true; in both scenarios the relation number of observations divided by the number of all possible observations exhibits the same result: 0. As will become clearer in section 3, this fact has been the main reason for the misunderstood non-arbitrariness. After all, the flawed assumption that an assumption is not *ad hoc* if it can account for large amounts of data stems from the belief that data can confirm assumptions.

Let me at this point of our discussion counter one argument someone may want to raise against my (or, rather Hume's and Popper's) claim that (strictly) universal statements cannot be deduced or probabilified by any number of existential statements. Someone could say that above, only a specific type of universal statement, i.e., *strictly universal statements*, were referred to above; instead, we could make use of *numerically, not strictly, universal statements*, which would render our claim that (strictly) universal statements are not provable, confirmable or probabilifiable pointless.

The problem is this: While strictly universal statements refer to an *infinite* set of arguments in some proposition, numerically universal sets refer to a *finite* set. For example, the universal statement *All sharks have teeth* can be interpreted strictly (referring to an infinite set of sharks) or numerically (referring to a finite set of sharks). Which interpretation is used has important meta-theoretical consequences: If a numerical interpretation is chosen, as in *All sharks (that have been observed in recorded history) have teeth*, the set of sharks referred to is finite, and thus, any number of observations of sharks with teeth is out of a *finite* number of possibly observable sharks and *not* out of an infinite set. Therefore, the equations in (2b) and (3) are not applicable, while the equation in (2a) is. So if we compare a situation in which x number of sharks with teeth have been observed with one in which it was $x+y$ number of sharks (with both x and $y \in \mathbf{R}$, and > 0), then the relation of the number of observations divided by the number of all possible observations *does not* exhibit the same result and *does not* equal 0 in both scenarios, and corresponds

to a higher number in the second scenario (in which a higher number of sharks has been observed).

Importantly, there is no flaw in the logic of this argument once we accept that we could simply make use of the numerical interpretation useless for the following reason: Remember how an argument works. It is necessary to assume a universal statement (*All sharks have teeth*) and an existential statement (the initial condition, e.g., *The object that has joined me in the water five minutes ago is a shark*). If one interprets the universal statement strictly (referring to an infinite set), then it is perfectly logical to deduce from these two assumptions that any shark one may encounter must have teeth. However, it does not follow from the numerical universal statement *All sharks (that have been observed in recorded history) have teeth* that any shark one may encounter must have teeth too. Actually, *absolutely nothing* follows from the assumption of a numerically universal statement and an existential statement. The reason for this is that each numerically universal statement can be expressed as a number of existential statements (*Shark 1 that has been observed in recorded history had teeth, Shark 2 ... etc.*), and since nothing ever follows from any finite number of existential statements, nothing ever follows from a numerically universal statement (because it refers to a finite set of propositional arguments). No *strictly* universal statement, no prediction, no potential falsifiers, no universal falsifiers, *no explanation*. Therefore, the attempt to counter my claim that universal statements cannot be deduced or probabilified by any number of existential statements by trying to make use of the numerical interpretation of a universal statement fails.

What I would like to show in the following (section 4) is that, in order for their explanations not to be falsified but to appear *non-ad hoc*, three of the most successful philosophical paradigms of the last few decades, i.e., the Phonetic Hypothesis, Lexical Phonology and Optimality Theory, employ arbitrariness in tandem with a meta-theoretically flawed version of non-arbitrariness. Before that, let me however explain how a scientific argument is set up.

3 A way out: testability and deductive reasoning

Each scientific argument contains an assumed generalisation, i.e., a strictly universal statement referring to an infinite set of entities (e.g., *Sharks have teeth*), an assumed initial condition, i.e., an existential statement (e.g., *The object that has joined me in the water five minutes ago is a shark*), and a consequence/theorem (existential statement) that is predictable via logical derivation from the assumptions (e.g., *The object that has joined me in the water five minutes ago has teeth*).

An assumed strictly universal statement can be testable in that each affirmative universal statement corresponds to a negative existential statement. For example, *Sharks have teeth* corresponds to *There is no shark that does not have teeth*. If it is possible to observe a case in which the corresponding affirmative existential statement is true (*There is a shark that does not have teeth*), one has discovered a logical contradiction ($A \wedge \neg A$), which means that the affirmative existential and the negative existential statement cannot both be true. In other words: (the assumption of) the truth of the affirmative existential statement proves wrong the negative existential statement *and thus the affirmative universal statement* (and with that, the proposed explanation). Thus, the existence of certain entities can disprove the truth of certain universals/explanations (cf. Popper 1934, 1959).

We note: an assumption is testable not by itself but only via the *existential statements it predicts*.

Finally, we see that there is an asymmetry between verification and falsification. Even though, as was shown in section 2, explanations *qua* strictly universal statements cannot be verified (and not even be probabilified), they can be falsified, or rather, their falsity can be logically *deduced* from the assumption of an existential statement which matches an observational statement) which is in conflict with the negative existential statement that the assumed strictly universal statement is a transformation of. This is why an approach that makes use of this fact is a *deductive* approach.

What follows from this is Popper's method of trial-and-error: Compare different hypotheses as to how badly they are doing when you severely test them (i.e., try to show that they are wrong); the one that comes out best (i.e., least wrong) must be closest to the truth, i.e., has the highest amount of *verisimilitude* and the highest degree of *corroboration*. Popper sums up his method of trial-and-error in the following way:

"In any stage of your researches be as clear as you can about // your problem, and watch the way it changes and becomes more definite. Be as clear as you can about the various theories you hold, and be aware that we all hold theories unconsciously, or take them for granted, although most of them are almost certain to be false. Try again and again to formulate the theories which you are holding and to criticize them. And try to construct alternative theories — alternatives even to those theories which appear to you inescapable: for only in this way will you understand the theories you hold. Whenever a theory appears to you as the only possible one, take this as a sign that you have neither understood the theory nor the problem which it was intended to solve. And look upon your experiments always as tests of a theory — as attempts to find faults in it, and to overthrow it. If an experiment or observation seems to support a theory, remember that what it really does is to weaken some alternative theory — perhaps one which you have not thought of before. And let it be your ambition to refute and replace your own theories: this is better than defending them, and leaving it to others to refute them. But remember also that a good defence of a theory against criticism is a necessary part of any fruitful discussion since only by defending it can we find out its strength, and the strength of the criticism directed against it. There is no point in discussing or criticizing a theory unless we try all the time to put it in its strongest form, and to argue against it only in that form" (Popper 1973: 265–266).

4 Examples of problematic linguistic theories and approaches

4.1 The Phonetic Hypothesis

The first problematic linguistic view I would like to discuss is the Phonetic Hypothesis (PH). Kaye (1989) deconstructed the PH and concluded that it was wrong. His argument has not, however, been widely adopted in the literature.

Kaye's (1989) main arguments against the PH are: (1) The PH predicts the whole-sale phonetic and thus phonological convergence of the languages of the world. **But:** no such convergence can be observed: we see that *the PH is falsified* (2) The PH predicts that the input of a synchronic or diachronic phonological change in one language should not be the result of a process in another. **But:** Latin *kt* and *pt* changed to Italian *t* [t], avoiding the supposedly articulatorily too costly sequences *kt* and *pt*. Classical Arabic *katāba* 'he wrote' changed in Moroccan Arabic to *kīb*, thus creating the supposedly articulatorily too costly sequence *kt*. Obviously, *the PH is falsified*.

Kaye (1989) also discusses a number of potential counterarguments and shows why they are flawed: Counterargument (1): A given process is not necessarily equally costly to speakers of different languages. However, (a) since any human can learn any human

language natively without marked differences, this assumption is baseless. (b) Furthermore, Kaye states that no-one has been able to successfully formulate a theory of language-specific scales of muscular effort. Let me add here that I have never come across a theory that can explain in what way it should be possible for the human articulatory system to be subject to various language-specific scales of muscular effort.

Counterargument (2): The predicted phonetic-phonological convergence has not happened yet but will happen, or it happens so slowly that linguists have not been around long enough to study them, or the observable phonological phenomena are not as drastic in their convergence as the ones to come. However, (a) this counterargument requires the scientist to have faith in the PH since there is no evidence. (b) Since there *are* phonological phenomena one would still expect them to support the claim of wholesale convergence. (c) There are limits to what phonological phenomena look like. It is questionable why future processes should be different from the ones we can see now, begging why future happens quite rapidly (rapid as in the Romance languages evolving from Latin in less than 2000 years). Romance languages should show signs of phonetic-phonological convergence. But they did not converge, they diverged.

Counterargument (3): To answer Kaye's argument that the input of a diachronic or synchronic change in one language should not be the output of another, one could refer to examples of backtracking in biological evolution (e.g., loss of flight). However, phonological phenomena are not adaptive to the environment, so biological backtracking does not support the PH.

Counterargument (4): The PH can be maintained at an *individual* level. However, this would predict correlations between the quantity (and, let me add, even quality) of phonological phenomena and the physical state of the individual. There is no evidence for such a correlation.

Finally, note also that an acoustic version of the PH (e.g., in Stevens & Blumstein 1978) again predicts the phonological convergence of the languages of this world (albeit according to acoustically motivated parameters), which cannot be observed (cf. Ploch 1999: 24).

4.2 Lexical Phonology

One of the main characteristics of Lexical Phonology (e.g., Kiparsky 1982) is the assumption that phonological processes operate on certain strata/levels which are ordered in sequence, and that affixes must typically be assigned to specific levels. As an example, let us look at velar softening in English (/k/ → [s] / _/V).⁶ Important for our purposes is that, even though velar softening takes place before the suffix *-ing*, it does not do so before, say, *-ing*: e.g., *electric*[k], *electric*[s]ing; **electric*[k]ing; but *kick* [k^hk], *kick*[s]ing; **kick*[s]ing (Kaye's examples, p.c., SOAS, 1992). In order to get this result, the relevant levels would have to be ordered in the following way:

⁶ It has no bearing on the following discussion whether one assumes /k/ → [s] / _/V or /k/ → [s] / _/V.

(4) Velar softening à la Lexical Phonology

Stratum x	-ty	velar softening	<i>electric</i>	<i>kick</i>
Stratum x + 1	-ing		<i>electric|s|ly</i>	<i>k|k|ing</i>
Result			<i>electric|s|ly</i>	<i>k|k|ing</i>

In this theory, *-ing* is affixed on a stratum which is ordered *after* the stratum on which velar softening takes place and *-ty* is affixed. This ordering ensures that the phonological process velar softening is not applied on any later levels, e.g., the one on which *-ing* is affixed.

So where is the problem? It is that the assumption that phonological processes are restricted to specific levels is not testable since the ordering of levels is arranged in a completely *ad hoc* manner. This means, there is no independent evidence for any proposed ordering of levels. It appears that this problem is not recognised as such because many phonologists believe that a derivation makes the generalisation it is based on less "redundant" (which is a case of inductive, i.e., logically flawed, reasoning). In some way, only operative at a specific stratum is supposedly "simpler" than assuming a human brain which has to remember each form ending in *-ty* as it is. In other words, one tries to derive whatever one can derive, and one does this because one is convinced that storage in the human brain is most limited (cf. Bromberger and Halle 1989: 56, to whom it is "at a premium"⁷ or Chomsky 1995: 235 to whom the lexicon is a "list of exceptions"), at least limited enough in order to justify that one must derive and therefore not store whatever wherever one can.

The reluctance to investigate the possibility of mental storage of relatively unlimited size is, metatheoretically speaking, unscientific.⁸ How small the storage capacity of the brain is in relation to the needs of human language cannot be decided upon *a priori*. So if the only way to avoid a mnemonic (lexicalisation-based) explanation consists of assuming untestable *ad hoc* strata (only so that something appears as derived or is described in terms of derivation), then it is better to assume that phenomena which would otherwise have to be considered to be accounted for by *ad hoc*-levels are not derived and are understood, in this way, as undervived, completely lexicalised forms (which does not exclude the possibility that humans can recognise patterns/regularities within the stored data after the data has become attested or with the data becoming attested, as opposed to some generative rules generating the data in question and, in this way, generating and deriving the patterns). The central tenet of Lexical Phonology, i.e., that phonological processes and suffixes are limited to specific strata, is not supported by testable evidence. All that Lexical Phonology does is account for data, which, as I have explained above, provides no evidence for whatever account. Furthermore, it does not matter whether the Lexical Pho-

⁷ I fully agree with the following statement from Kaye (1995: 319–320): "I only wish to suggest that B&H's [Bromberger and Halle's 1989] assumptions... are not a priori true. Since they are unaccompanied by any form of argumentation I feel justified in dismissing them."

⁸ Cf. S. Jensen 2000, especially chapter 1, for a more detailed discussion.

nology view of what is described in terms of derivation is intended as derivation in the usual sense or as some "lexical" and thus "undervived but ordered" phenomenon.⁹

Importantly, the methodological tool on the basis of which the fallacy of ordered levels is achieved within Lexical Phonology is the arbitrarily established *ad hoc* arrangement of levels and the *ad hoc* assignment of affixes and processes to these levels, without independent evidence. An example of independent evidence would be found if, say, all independent affixes are dealt with at a stratum prior to the level at which derivational affixes are dealt with. In light of this it can be said that it is metatheoretically most problematic to regard Lexical Phonology as a scientific theory only because some data are derivable from some premises in this theory. No degree of abstraction of this sort and no amount of data accounted for can make Lexical Phonology analyses any less *ad hoc*. Only independent evidence for each of the assumed levels could, and this is precisely where we find Lexical Phonology's weak point.

4.3 Optimality Theory

This paper does not provide enough space to discuss the methodology of Optimality Theory in detail. A treatment of this topic that may not be complete but is certainly more detailed can be found in Ploch's review of Rachel Walker's optimality-theoretical analysis of nasals and nasal harmony (Ploch, ms.).

The case of unscientificity to which I would now like to direct the reader's attention is the untestable nature of each violable constraint and thus, in some fundamental manner, of each Optimality-theoretical analysis.¹⁰ To pick an analysis of a set of data reasonably well known in the literature, let us look at Turkish vowel harmony and how it is treated within Krämer's (ms.) optimality-theoretical account. Consider the *tablan* in (5) and the constraints in (6):¹¹

⁹ The last statement is also important in relation to the discussion in section 4.3.4.3 of Optimality Theory, a framework that is conceptually non-derivational but still distinguishes inputs and outputs, i.e., a "before" and an "after". The important point to remember here is that it is irrelevant in what way the definitions/concepts "derivation" versus "non-derivation" generation differ, only propositions matter. For a similar view on the inductive character of Optimality Theory as regards derivation in opposition to its claim that it is a non-derivational approach, cf. Mohanan (2000).

¹⁰ I am not saying that all Optimality Theory analyses are completely untestable. Given that the number of constraints proposed as part of Universal Grammar must be limited because the human brain as a physical entity must be limited (too), there are, even under factorial ranking, also only a limited number of constraint rankings (and, in this way, language types). This makes it possible, in theory, to come up with language types that are not covered by any specific constraint ranking. In other words, there can be language types that would prove a proposed set of constraints wrong. Since this set is always identical to the full universal set because all constraints, no matter how low ranking and unobservable, are operative in all languages), and since within that set, none of the constraints is itself testable, any improvement to the whole universal set of constraints can only be achieved by abandoning the whole (universal) set. Unfortunately, even if someone were to find a set that, even though falsifiable, cannot be falsified, this set would still exclusively contain untestable constraints, i.e., constraints that no evidence can be provided for.

¹¹ The tableau in (5) is from Krämer (ms.: 22). The page numbers on which the constraints in (6) can be found are: the Ident(F) constraint family: 16 (from McCarthy and Prince 1995: 264); *LORO: 22; S-Ident (back) and S-Ident (round): 21. In (6), I have not followed Krämer's rules for capitalisation, paragraphing, italicisation and setting-of-quotes.

(1997, 1999) notion "sympathy", and at Ploch's (2001) argumentation against Optimality Theory in terms of its unscientific handling of non-monotonic logic (i.e., logic dealing with situations in which theorems derivable from new assumptions can take precedence over old theorems).

4.4 The Grammaticality Hypothesis

The Grammaticality Hypothesis is, in Jensen's (2003) terms, "the belief that there exists a faculty in the human mind that is able to take any well-formed phonological form as input and state whether that form is *grammatical* or not." There is not much space here to go into much detail; the interested reader is referred to Jensen (*ibid.*) and Ploch (2001). It suffices to say here that native speakers' intuitions range over more judgements than "grammatical" and "non-grammatical" or "acceptable" and "unacceptable", and therefore all in-between judgements have to be systematically reanalysed as one of the obligatory judgements or allowed for as "foreign data" *that need not be accounted for* by the "grammar", thus rendering the Grammaticality Hypothesis untestable. An alternative explanation for speakers' judgements is provided in Jensen (*ibid.*) and Ploch (*ibid.*).

4.5 Descriptive Linguistics

I have often come across the view expressed by descriptive linguists that "only the data counts", and that theories are secondary. Such a view of data would however only be sensible if it was possible to observe objectively, i.e., without theory-ladenness. This is not possible though: all observations are theory-laden (cf. Popper 1959, 1972, 1973; Ploch, forthcoming). Therefore a scientist chooses their assumptions, and different sets thereof, and tests them, to find out which one comes out best.

Generally, any approach to linguistics that is dismissive of theories and "only interested in the data" is inductivist (cf. section 2) and subscribes to the view that based on supposedly (but not really) "objective" observation, some supposedly relevant (but really quite arbitrary) corpus of data can be collected, on the basis of which some generalisations are made, which unfortunately only apply to this arbitrary corpus of data. To point out to examples where the generalisation holds (and not, in a testability-based manner, where it *does not hold*), i.e., to examples within their corpus of data, which is a justificationist mistake that goes hand-in-hand with inductivism. For more details on this, cf. Popper (1934, 1959, 1973) and Ploch (2001).

So, descriptivism cannot exist without theory: one can only observe *with* theory (theory in a wide sense, i.e., including all expectations, no matter how precise or imprecise).

5 Problematic strategies to maintain unscientific theories

The most prominent unscientific methodological strategies that are used in linguistics are (cf. Ploch 1997, 1999, 2003a): (1) justificationism or verificationism; (2) denial; (3) flexibility of applicability; (4) the causality fallacy, i.e., falling into the so-called whodunnit trap; and (5) flawed reductionism.

5.1 Justificationism (or verificationism) suffers from the mistaken belief that evidence for a justificationist (or more specifically, a strictly universal statement) can be provided by a general statement "in favour" of it, i.e., by finding instances in which a predicted situation (finding evidence "in favour" of it, i.e., by finding instances in which a predicted situation (existential statement) can be matched up with an observation. Note: this is logically flawed. As Hume [1739] (1888) and [1777] (1966) showed, it follows from no finite number of sunrise that the sun will rise tomorrow. In other words, no matter how many instances one has seen in which a prediction of a strictly universal statement can be matched up with an observation, this prediction (or no matter how many such predictions) is (are) always in relation to an *infinite* number of instances that the strictly universal statement is (are) always in relation to. Since any finite number divided by plus or minus infinity ($\pm\infty$) equals 0, no explanation (which must at least contain the assumption of a strictly universal statement referring to some entities x with some property y plus the assumption of an existential statement about an instance of x) can be proven to be true nor can be probabilified (cf. section 2).

Clearly, explanations cannot be proven or probabilified. For more details about this, cf. Popper (1934, 1959) [1963] (1972), [1972] (1973).

Unfortunately, justificationism in phonology is quite standard and wide-spread. As a student of phonology one is always presented with cases where some phonological phenomenon is described in phonetic terms, and this provides the "evidence" for the claim that the phonetics involved motivates the phonology. Obviously, this is not logical and a case of justificationism: instances where the PII works, i.e., where some phonological data can be described in phonetic terms and thus be "accounted for" by the PII, are taken to be evidence for the PII. The question why most "phonetically motivated" phonological phenomena do not occur in most languages (so how most speakers can resist most "phonetically motivated" urges to increase ease of articulation) is not even asked. Testability is often not relevant in mainstream phonology (at least as far as the acceptance of the PII is concerned; cf. section 4.1).

Also, one of the key words of justificationists is "account for": the PII accounts for phonological facts, and so it actually does. But this provides, as Popper has shown and Ploch has extensively written about in relation to phonology, absolutely no evidence for the PII.

Importantly, astrology works in exactly the same manner: If we look long enough we can find enough meticulous virgos "confirming" the universal claim *Virgos are meticulous*. However, not a single meticulous virgo nor any number thereof can support this universal claim. Claims must be *corroborated* by evidence, i.e., one must come up with different *testable* hypotheses, try as hard as one can to find counter-evidence and then see which hypothesis comes out best, in this way, one hones in on the truth (cf. the references to Popper's work). The astrological hypothesis accounts for meticulous virgos, but this provides no evidence for astrology. The relevant question here is: Is it possible to prove the statement *Virgos are meticulous* wrong, i.e., are there virgos that are not meticulous? Or, are there languages whose speakers can resist the natural phonetic urge to increase ease of articulation by vowel harmony? The answer to both questions is: Yes, this planet is full of unmeticulous virgos and unharmonic languages.

In summary, the PH and the astrological hypothesis (i.e., that the character traits and deeds of people are influenced by a number of planets) are maintained by the same strategy: justificationism; only "confirming" evidence matters.

5.2 The strategy of denial

The strategy of denial¹⁴ (Ploch 1997, 1999, 2003a) is closely linked to justificationism. It is the refusal to look at counterexamples. I have been in conversations with PH supporters for a number of years now. Commonly, the PH is subscribed to without counterexamples sent "evidence" for the "phonetic foundation" of phonology which pre-emptively deny counterexamples.

5.3 The strategy of flexibility of applicability

When this strategy is applied, one explicitly immunises some universal claim, e.g., the PH, against refutation. This is probably the most widely used method on the part of the supporters of the PH. The PH is not applied whenever it would otherwise be proven wrong. I have found three versions of this strategy:

1. Parameterisation of "phonetically motivated" phonological phenomena: a universal claim, e.g., assimilation being caused by the attempt on the part of speakers to increase ease of articulation, is parameterised; when something does not happen in some language, the parameter is "off" in that language. So when a spoon held up by a magnet does not fall down, gravity is 'off' for the spoon? (Example adapted from Mohanan 2000.)
2. Lexical phonology: a universal claim (e.g., a constraint) is only universal at a certain level/stratum. Other constraints operate at other levels. If a constraint (which in order to explain anything *must* be a strictly universal statement) is not applicable to certain affixes, then the constraint is said to operate at a level prior to the level at which the non-undergoing affixes are dealt with by the grammar. In this way, counterexamples to any universal claim can be ordered *after* the claim they are counterexamples too, and in this way, the universal claim is immunised against refutation. Is a spoon held up by a magnet dealt with after gravity has applied, and so the spoon is just not subject to gravity?
3. Optimality Theory: Violable constraints (note: a violable constraint is an explicitly violable, i.e., immunised, constraint) are ranked. Actual output forms are said to be those candidates that violate the highest ranking constraint least. Of course, similarly to Lexical phonology, any form that would prove a constraint wrong can be accounted for by some other higher ranking constraint. In this way, no OT constraint is testable; that is to say that all OT constraints are unscientific.

¹⁴ Note, in Ploch (1997, 1999, 2003a), I called the strategy of denial what in this paper is referred to as justificationism. For example, in Kenstowicz (1994) and Archangeli & Pulleyblank (1989) there is a large number of phonological phenomena accounted for in these works, but counter-evidence is not discussed; this is an example of justificationism or of what I used to call 'strategy of denial'. In this paper, the strategy of denial is used by those who insist on not taking into account counter-evidence.

5.4 The whodunit trap and the causality fallacy

One could try to counter my arguments against the maintenance of the PH by saying that all phonological phenomena are phonetically "natural" or "neutral" towards phonetics, but that there are no phonological phenomena that are "counter-natural". One could try to claim that since the PH makes the prediction that there are no counter-natural phenomena, it is testable, and since there are no counter-natural phenomena, it has proved its claim that since the PH makes the prediction that there are no counter-natural phenomena, it is testable, and since there are no counter-natural phenomena, it has proved its claim.

There is unfortunately a logical flaw in this kind of counterargument, more specifically a flaw that I would like to call the "causality fallacy" (and which I have before referred to as "falling into the whodunit trap"). The fallacy consists in the conflation of the notions "relation" and "motivation/causation". Note that only some relationships between, say, *A* and *B*, are of the kind that *A* motivates/causes *B*. So the problem with the above counterargument is that it conflates a relational link between phonetics and phonology with a causal link *from* phonetics *to* phonology. The causal situation may as well be different. It may be the phonology that causes both phonetics and phonology (mediated link).

I used to refer to this logical mistake as "falling into the whodunit trap" because one can find the same mistake in countless whodunit movies or novels, in which the police, when it arrests the wrong guy, think that some guy *caused* the murder just because they can find him to be the murderer. As we have seen again and again in such movies, it does not follow from such a link that the guy really committed the murder, nor does it follow from the fact that the hypothesis that they guy committed the murder *accounts for* the data that there is something to that hypothesis.

5.5 Flawed reductionism

As Popper (1973) has pointed out, there is nothing wrong with trying to reduce one science to another, e.g., with the attempt to reduce all chemistry to physics. However, one must do this in the right way. What one must avoid at all costs, is that one looks at chemistry from a physicist's perspective (through physicist's glasses, so to speak) and then reduces everything one "sees" this way to physics. — Of course, this is always possible. There is no such thing as objective observation, and looking at chemistry from the perspective of a physical theory is in itself a reduction to physics that makes sure that one can only see what is reducible to physics. A genuine reduction of chemistry to physics would contain a *chemical* analysis of chemistry, a *physical* analysis of physics, and then with chemistry and physics established by themselves and in this way independently of each other, one could try to see whether either physics or chemistry (each viewed by itself or from its own perspective) is reducible to the other, and if so to what extent.

Similarly, the attempt to reduce phonology to phonetics (to bring phonology and phonetics "closer together" as the modern jargon goes, or to encode "phonetic reality" into the phonology) can only be valid if (and only if!) the phonology in question is established *phonologically* (i.e., it must under no circumstances be a theory that cares about phonetic details) and the phonetics in question is established *phonetically*. (I still have not seen any phonetics that does not have to refer to phonologically, i.e., non-phonetically, established phonetics; I therefore doubt that phonetics is an independent discipline, but this is another matter.) So the attempt to reduce phonology to phonetics can only be done in a scientific manner if the very thing that is actually attempted is abandoned: bringing phonetics and

phonology' closer together. Keep them separate, establish them independently of each other, hypothesise non-phonetically motivated phonological theories; otherwise any reduction to phonetics is problematic.

6 Some conclusions

1. There is no evidence for any phonetic motivation of phonology.
2. Phonetics is not an independent discipline. Without phonology there is no phonetics, but without phonetics as a scientific discipline, there is phonology. In other words, the importance of phonetics in phonology is greatly overrated.
3. Those who want to reduce phonology to phonetics should value non-phonetically motivated phonological frameworks, even though they do generally not.
4. It is not surprising that automated speech recognition that is based on phonetically motivated frameworks of phonology is still not working properly.
5. Lexical phonology is not a scientific framework.
6. Optimality Theory is not a scientific framework.
7. The Grammaticality Hypothesis should be dropped.
8. Descriptive Linguistics is suffering from a lack of (scientific) theory and thus of explanatory power.
9. The philosophy of science should be studied as part of Linguistics. I particularly steer clear of objectivity-denying philosophies through which we could be seen to be subjectivist, irrealist, skepticist, pragmatist, nihilist or such-like.

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