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*The beginning of the word revisited**

1 Introduction

The present paper aims to revise and re-evaluate some of the advantages gained from two suggestions made by Jean Lowenstamm. The first one (Lowenstamm 1996) introduced a new type of phonological skeletal structure, in which syllabic constituency and timing are merged into a skeletal tier consisting of strictly alternating C and V positions, and parametric variation in syllable structure is expressed with reference to the licensing of empty positions rather than branching. (The popularity of this suggestion amongst the practitioners of Government Phonology (henceforth GP) soon led to the birth of a radical offspring christened (Strict) CV Phonology.) The second one (Lowenstamm 1999) armed this bare skeleton with an empty CV unit attached to the left edge of every word of a major category. The urge to license the empty vocalic position of this boundary marker is then the source of various phenomena, dynamic (e.g., alternations in cliticisation (Lowenstamm 1999), and the lack of lenition in certain phonological environments (Ségéral & Scheer 1999, Dienes & Szigetvári 1999, Szigetvári 1999, Dienes 2000)) as well as static (e.g., the (absence of) phonotactic restrictions on word-initial consonant clusters in different languages (Lowenstamm 1999, Szigetvári 1999)).

The paper is structured as follows. Section **2** relates the story of the development Strict CV Phonology has undergone since Lowenstamm came up with the idea of the empty boundary marker. This includes a redefinition of the notions "government" and "licensing", and also a repartitioning of the CV skeleton into VC units. At the end, the issue of the source of the boundary marker is addressed, which leads us to go back in time in §**3** and investigate another line along which Chomsky & Halle's (1968) (henceforth SPE) theory of syntax–phonology mapping in terms of boundary symbols

* Part of this research was carried out at SOAS, University of London in autumn 2001, supported by the Eötvös Scholarship of the Hungarian State. I am grateful to Miklós Törkenczy, László Varga and an anonymous reviewer for their remarks. All the remaining errors are mine.

developed into the framework of Prosodic Phonology (henceforth PP), the theory of the domains of phonological rules (see e.g., Nespor & Vogel 1986). It is in §**4** that the two narratives meet; the inadequacy of both is pointed out and an attempt is made at reaching a compromise. Finally, this section concludes the discussion and highlights a set of data which undermines most previous analyses of, and sheds new light on, the data used.

Throughout the paper, one process attested in several dialects of English, e.g., in Standard American English pronunciation (General American, henceforth GA), is focussed on, namely the allophony resulting from *t/d*-flapping and the aspiration of voiceless plosives. GA stop allophones provide a case in point since their distribution is governed by the principles under investigation (prosodic constituency, morphosyntactic properties).

2 Strict CV/VC, the boundary marker and GA flapping

2.1 The beginning of the word (1999)

In this influential paper, Lowenstamm describes phonological processes characteristic of word-initial position but not of word-medial onsets. Since the present paper concentrates on the phonological rules affecting GA plosives, consider the data of *t*-aspiration vs. flapping given in (1). They illustrate the point made by Lowenstamm since word-initial *t*'s become aspirated whereas word-medial syllable-initial (single) *t*'s flap.[1]

(1) **GA flapping — Data set 1**
a. [t^h]: *T*óm, *t*omórrow
b. [ɾ]: á*t*om, compé*t*i*t*ive

The importance of such phenomena for phonological theory, as Lowenstamm argues, lies in their indication that even the introduction of syllabic constituency to replace linear representations of the SPE-type is unable to banish the word-boundary, #, altogether. Although all *t*'s in (1) are syllable onsets, the phonology treats them differently, which calls for different analyses.

Kahn (1976) provides a solution by introducing the notion of ambisyllabicity (a segment's or skeletal position's simultaneous association to the

[1] Throughout the paper, the behaviour of *t*'s appearing in consonant clusters will be ignored since they are beyond the scope of the present discussion.

preceding *and* the following syllable) applying to the *t*'s in (1b), and therefore identifies the context of flapping as the onset of post-stress unstressed syllables. Other analyses like Kiparsky's (1979) and Nespor & Vogel's (1986) make use of prosodic constituents such as the foot, and deny the theoretical status of ambisyllabicity. Kiparsky claims that all foot-internal *t*'s following a [−cons] segment are "laxed" first, and then a post-cyclic rule voices all "lax" prevocalic *t*'s. According to Nespor & Vogel's analysis, the flapping rule of American English is a *U* domain rule, i.e., its domain of application is the phonological utterance; the aspiration rule is a "tensing" rule, which "tenses" all foot-initial *t*'s and precedes the flapping rule. Thus, by the time the rule of flapping becomes available, i.e., before [−tense] plosives are tapped intervocalically, foot-initial *t*'s have already undergone aspiration and thereby escaped flapping. What these accounts have in common is that both assume the creation of some kind of degenerate feet word- (and utterance-) initially to derive aspiration at the beginning of words of the *tomorrow*-type; and both let aspiration apply *first,* thus exempting foot-initial *t*'s from lenition, and then make the rest flapped, so they crucially depend upon the notion of *rule ordering.*

Lowenstamm, however, cannot follow in the footsteps of either analysis. Although he does not even consider the possibilities in his paper, it is clear that neither ambisyllabicity nor rule ordering is available in the theoretical framework he works within, viz., Strict CV Phonology, initiated by himself in his 1996 article (referred to in the Introduction), which reduces the phonological skeleton and syllabic constituency to strictly alternating C and V positions, illustrated in (2).

(2)

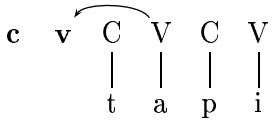
closed syllable	geminate	long vowel
pit	Hu *ittas* 'drunk'	*pea*
C V C V	C V C V	C V C V
| | |	\ / |	| \ /
p ɪ t	... t ɑ ...	p i

Strict CV Phonology, not having any syllabic constituents, is unable to make reference to ambisyllabicity on the one hand, and, being a theory belonging to the GP family, rejects derivation in the form of a set of ordered rules on the other. The possibility that remains open for Lowenstamm is rediscover word-initial #, which he translates into an empty CV unit.

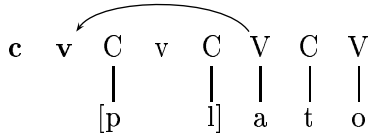
(3) Rather than being conventionally marked by the insertion of a # symbol to its left, the word is preceded by an empty CV span. The major difference between this proposal and the traditional view lies in the fact that the initial empty CV span is a true phonological site, over which a number of operations will be shown to take place, or in terms of which a number of generalizations will be shown to receive expression. (Lowenstamm 1999 : 157)

Therefore, the representational difference between word-initial and word-medial onsets is that the former but not the latter is preceded by an empty CV unit in the phonological skeleton. This explains, e.g., the presence and absence of certain word-initial consonant clusters in a language like French. To describe the situation in (4), we need two assumptions: (i) in French, the initial site is always licensed (=properly governed),[2] (ii) in accordance with Scheer (1996), a sequence of an obstruent and a liquid constitutes a closed domain, transparent for proper government. In line with this, (4a–b), reconstructed from Lowenstamm (1999 : 159), are well-formed structures in French, whereas in (4c) the initial CV site is not properly governed.[3]

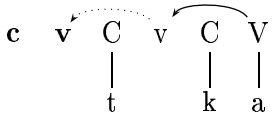
(4) a. tapis [tapi] 'rug'



b. plateau [plato] 'tray, plateau'



c. *#tka



A similar analysis accounts for the behaviour of clitics, which, being irrelevant for the present discussion, will not be illustrated here. Still the question

[2] Although it is always the V part of the initial CV that is properly governed, in Lowenstamm's conception of licensing this is enough for the whole CV unit to be licit.

[3] Single arrows link the source and target of *government*; the dotted arrow indicates the impossibility of the relation. Lowercase c's and v's are empty positions, while the initial empty CV unit is boldfaced.

remains what accounts for the difference of the *t*'s in the English data in (1). An answer is provided by the theory of Coda Mirror.

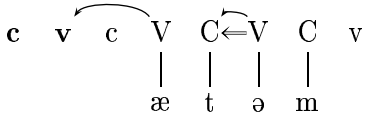
2.2 Government and licensing as two antagonistic forces

The big innovation came in Ségéral & Scheer's (1999) new conception of government and licensing. First, the two are opposing relations originating from nonempty V positions in such a way that the same vowel position is capable of contracting both at the same time. Second, they operate between a V position and a V or C position of the strict CV skeleton in the way specified in (5). Most importantly, both V and C positions can be affected by them, and both in the same way.

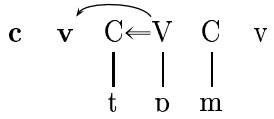
(5) a. Proper Government inhibits segmental expression of its target.
b. Licensing comforts segmental expression of its target.
(Ségéral & Scheer 1999 : 20)

According to (5), then, the *t* in *atom* is governed (and also licensed) by the following V position, causing it to lenite (6a), as opposed to the one in *Tom,* which is licensed only, the governing potential of the following vowel being consumed by the empty v position of the CV site marking word boundary (6b).[4]

(6) a. atom



b. Tom



The most important message conveyed by the paper is that not only is it possible to subsume the $\_\_\left\{\begin{smallmatrix}\#\\C\end{smallmatrix}\right\}$ environment of linear models under the single label "syllable coda" (as shown by Kahn (1976); this is equivalent to "a C position before an empty vowel" in the Strict CV framework), but its mirror image, $\left\{\begin{smallmatrix}\#\\C\end{smallmatrix}\right\}\_\_$, the "Coda Mirror", is also a theoretically relevant site (and translates "a C position *after* an empty vowel").

[4] Single arrows show government, double arrows indicate licensing. Both relations are head-final.

The first comprehensive account of English stop allophones was provided in Dienes & Szigetvári 1999, Szigetvári 1999 and Dienes 2000 under the name of Coda Mirror Plus (proposing an adaptation of Ségéral and Scheer's theory) and VC Phonology (suggesting a skeleton comprising strictly alternating VC units rather than CV spans). For the time being, the division of the skeleton into units will be ignored; the point made by the two authors is the distinction between two types of lenition on the one hand, and the stress sensitivity of lenition in English, illustrated by the word pair *á*[ɾ]*om* ~ *a*[t^{h}]*ómic,* on the other. The basic principles of their theory that are relevant for the present discussion are given in (7) and (8).

(7) a. Vocalicness is loud, not only acoustically but also in the sense that V slots in the phonological skeleton aim at being pronounced. (Szigetvári 1999 : 62)
b. Consonantalness is mute, if nothing intervenes a C position will stay silent. (Szigetvári 1999 : 62)
c. Government spoils the inherent properties of its target. (Szigetvári 1999 : 66)
d. Licensing comforts segmental expression of its target. (Ségéral & Scheer 1999 : 20)

(8) **The Antipenetration Constraint**
Government cannot penetrate a stress domain. (Szigetvári 1999 : 79)

The principles in (7) specify the inherent properties of skeletal positions (7a–b), which are affected by government (7c) and licensing (7d) in ways familiar from Coda Mirror. The Antipenetration Constraint, (8), ultimately expresses the difference between stressed and unstressed vowels: since the former start a stress domain, they are prevented from emitting government. Thus, in English at least, the *t* in *atómic* is treated differently from the one in *átom*: the former escapes being governed and gets aspirated instead (cf. (10a–b) below).

To sum up, a *t* is aspirated in a phonologically strong position, viz., when licensed but ungoverned; this situation emerges before stressed vowels (since, in accordance with the Antipenetration Constraint, they are unable to govern into a preceding stress domain) and word-initially (when the vowel's governing potential is used up by the requirement to silence the empty V in the boundary marker). There are two types of phonologically

weak positions, one is before an empty V, which is roughly before a consonant and word-finally[5] (recall $\_\_\left\{\begin{smallmatrix}\#\\C\end{smallmatrix}\right\}$) — in such cases consonants remain ungoverned and unlicensed and exhibit "consonantal" lenition, i.e., *t*'s are glottalised. The other weak position is that of foot-internal intervocalic C's, which receive both government and licensing from the following (unstressed) vowel; here consonants tend to move towards vocalicness, e.g.,GA *t*'s are flapped.

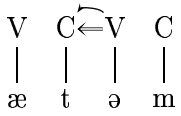
A summary of all the possible consonantal positions is given in (9), taken from Szigetvári (1999). Although Szigetvári's table does not only cover the cases under investigation here, let us focus our attention on the word-initial and pretonic environments in (9a), and the foot-internal position in (9c).

(9) **Possible consonantal positions** (Szigetvári 1999 : 135, chart (95))

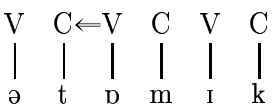
	LIC'D	GOV'D	LENITION TYPE	POSITION[6]
a.	yes	no	none	# __ , oc1, bc2, cc2, __ V́
b.	no	no	c-lenition	__ #, bc1
c.	yes	yes	v-lenition	V __ V̊
d.	no	yes	c-/v-lenition	cc1, within a long V

The situation in (9c) is exemplified by atom in (10a). In both (10b) and (10c) the *t* finds itself in a strong position (subcases of (9a)). Since the skeleton here is partitioned into VC units, stress domains (indicated by brackets) start with the stressed vowels and exclude any consonant(s) preceding it. A characteristic feature of the VC framework is that only consonant-initial words contain a boundary marker to the left of the first segment.

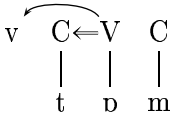
(10) a. (atom)



b. (at)(omic)



c. (vTom)



[5] In VC Phonology, word-final C's are unlicensed and ungoverned because they are followed by nothing.

[6] Abbreviations: bc*n*, cc*n* and oc*n* mean the *n*th position in a bogus, coda and onset cluster, respectively; V́ is a stressed, V̊ an unstressed vowel.

2.3 GA flapping in connected speech

The data problematic for a VC skeleton are given under (11). They illustrate how the stress-sensitivity of flapping vanishes when word-final *t*'s (glottalised when followed by a consonant or a pause) are affected by a following vowel-initial word, irrespective of whether the vowel is stressed or not (11a). However, it is only final *t*'s that change according to the context, word-initial consonants are always strong (cf. *a tissue* and *at issue* in (11c)).

(11) **GA Flapping—Data set 2**
(Kahn 1976, Kaisse 1985, Nespor & Vogel 1986)
a. hi[ɾ] Ánn, hi[ɾ] Aníta, hi[t$^{\text{ʔ}}$] me
b. grow [t$^{\text{h}}$]omátoes
c. a [t$^{\text{h}}$]íssue, a[ɾ] íssue
d. wai[ɾ] a mínute

As I point out in Balogné 2001, a skeleton comprising VC units accompanied by Coda Mirror Plus is inadequate for the description of the facts: it incorrectly predicts that the *t* in *hit Ánn* is in a strong position, and only the one in *hit Aníta* undergoes flapping. Clearly, the difference between stressed and unstressed vowels must be one that can be got rid of across words.

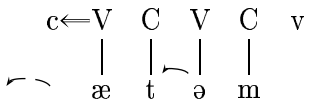
In Balogné 2001 I make an attempt at modifying Coda Mirror Plus to account for the data in (1) and (11). The first suggestion is that the government responsible for flapping operates between melodies. This is responsible for the difference between word-internal and cross-word flapping: while word-internally the target *t* and the following vowel are adjacent both skeletally and melodically, thus the (un)stressedness of the vowel does have an effect on the relation contracted by the two positions, the reverse is true of a word-final *t* and the following word-initial vowel due to the intervening boundary marker (cf. (13) below).

Second, stressed vowels seem to have a tendency to support the segmental makeup of preceding consonants and prefer licensing to government (i.e., if the conditions of both are met they choose to license) whereas unstressed vowels are more prone to damage their consonants within their CV units and so prefer to govern. This distinction is the equivalent of the Antipenetration Constraint, but the fundamental difference is that whereas the Antipenetration Constraint deprives the stressed vowel of its governing potential altogether, here it is only restricted to certain situations. The

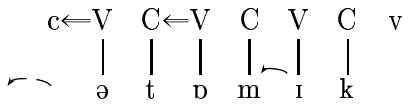
restriction comes in the form of a principle claiming a complementary relationship between government and licensing, spelt out in (12) below, and the resulting representations are given in (13).

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

(13) a. átom



b. atómic



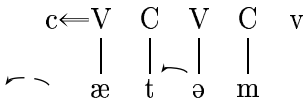
In (13a), the word-initial vowel (/æ/) is stressed so will first license the preceding empty c position, but since it is empty, the vowel has the potential ability to govern some other consonantal material at the melodic level (indicated by the broken single arrow), which would result in "ambisyllabicity" across word boundaries. The second vowel (/ə/), however, being unstressed, will first govern the preceding consonant but doing so loses the opportunity to do anything else: it cannot also license the consonant once it governs it because of (12), and there are no other possible targets. Hence, the /t/ in *atom* will be tapped and so will the underlined /t/ in, e.g., *hit atoms.* In (13b) the same word-initial vowel is not stressed, thus tries to govern first, which will not materialise until the word is put into such a context where it is preceded by a consonant-final word, e.g., *hit atomic elements.* In that case government reaches the underlined /t/ surfacing as a tap. At the same time, the initial empty c position gets licensing since this will not violate (12). The stressed vowel in (13b), on the other hand, will license the /t/ making it aspirated, but cannot simultaneously govern it (in accordance with (12)), consequently its governing power will remain unexploited. A fundamental property of this analysis is that it assumes a CV skeleton.

Finally, consider the data in (14).

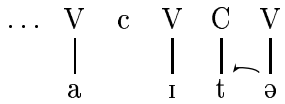
(14) **GA flapping — Data set 3**
a. I want you [ɾ]o help me
b. Don't lie [ɾ]o me
c. [t^{h}]o tell the truth
d. [t^{h}]omorrow
e. see you [ɾ]omorrow[7]

What they show is that function words behave differently from major categories. The initial *t* in *to* is only aspirated when at the beginning of the utterance (14c), otherwise it may get flapped if it is preceded by a vowel-final word and therefore appears in the conditioning environment (14a–b). The flapping cases are easy to account for in the framework sketched out above: following Lowenstamm's (1999) definition of the boundary marker (3), they only characterise lexical words to the exlusion of function words. Consequently, function words like *to* lack it, that is why ... *lie to* ... creates exactly the same context for the *t* as *atom* does.

(15) a. atom



b. lie to



The question is how the boundary marker appears to the left of function words at the beginning of utterances (14c). In my view, there are just two ways of explaining this. Either Lowenstamm is mistaken and all words carry the empty CV span, which is deleted in certain environments; or the above analysis is correct (as far as the absence of pre-function word boundary markers is concerned), and the empty CV unit is inserted utterance-initially. What seems to be clear is that a VC analysis fails in either case. Since in consonant-initial words it is the V position of the first VC unit that functions as a boundary marker (i.e., it absorbs the governing potential of the following nonempty V), it can be neither deleted nor inserted under any circumstances as "VC units [...] are here claimed to be inseparable" (Szigetvári 1999 : 108).

We will try to answer the question of the source of the empty CV in §4, but to do so we need first to glance back on the beginnings and familiarise ourselves with the other thread of the word boundary story.

[7] John Harris, p.c.

3 Boundaries versus prosodic constituents

3.1 The boundary # and the word in SPE: the beginning of the story

The theory of the domains of phonological processes in Generative Phonology was launched in SPE by introducing two boundaries, the formative boundary (symbolised by +) and the word boundary (#), presumed to have relevance in all languages. In what follows, we will concentrate on the latter.

The general convention governing the appearance of the word boundary in the phonological surface structure is given in (16).

(16) The boundary # is automatically inserted at the beginning and end of every string dominated by a major category, i.e., by one of the lexical categories "noun", "verb", "adjective", or by a category such as "sentence", "noun phrase", "verb phrase", which dominates a lexical category (SPE : 366).

The above mechanism inserting #-boundaries applies at the syntactic surface structure (represented with labelled bracketing indicating categorisation) and generates a representation which is then modified by readjustment rules replacing some occurrences of # by + as well as deleting (and perhaps also introducing) some in various positions. The resulting phonological surface structure is the one that enters the phonological component of the grammar.

The application of the convention in (16) also provides a definition of the notion "word", which can be roughly given as a string of formatives sandwiched between pairs of #-boundaries (i.e., ## __ ##). (For a more precise definition see SPE : 367.) Ignoring the exact number of boundary symbols, later # became shorthand for word edges, featuring in the "notorious" disjunctions $\_\_ \left\{ \begin{matrix} \# \\ \mathrm{C} \end{matrix} \right\}$ and $\left\{ \begin{matrix} \# \\ \mathrm{C} \end{matrix} \right\} \_\_$, the frequent contexts for phonological processes. However, the reintroduction of hierarchical structure (i.e., the syllable) into supraskeletal representation (e.g., Kahn 1976 for English, identifying $\left\{ \begin{matrix} \# \\ \mathrm{C} \end{matrix} \right\}$ as a notational artefact standing for the syllable boundary) and its advent in subskeletal melody (Autosegmental Phonology, Goldsmith 1976) forced analysts to reinterpret phonological domains.

3.2 Prosodic Phonology

Among other aspects of the linear framework of phonology, word boundary theory was found inadequate as laid down in SPE. (For a discussion of its

disadvantages, see Kaisse 1985, chapter 5). A new branch of phonological theory, Prosodic Phonology (henceforth PP), was introduced to account for the syntax–phonology interface, the way the syntactic and phonological components of the grammar are organised with respect to each other. According to PP, "the mental representation of speech is divided into hierarchically arranged chunks" (Nespor & Vogel 1986 : 1), the so-called prosodic constituents (see (17)). The basic idea is that syntax does not provide domains for phonological rules in a direct fashion, but another level of representation, dubbed "p-structure", must be posited (for the arguments, see e.g., Nespor & Vogel 1986). P-structure mediates between syntactic surface structure (frequently referred to as s-structure) and the phonological module, and functions as the locus of their interaction.

The difference between the SPE-type early version of p-structure and the one proposed by PP lies in the fact that while in the former p-structure directly derives from s-structure, and the only syntactic property governing the syntax–phonology mapping is constituency and phrasal rank expressed by the number of boundary symbols, in the latter the two representations are distinct, not (necessarily) isomorphic, and only indirectly related. Researchers do not agree on the nature of the syntax–phonology mapping; for a summary of the different mapping algorithms proposed see Inkelas & Zec (1995).

The possible domains of phonological phenomena are enumerated in the form of a hierarchy of prosodic constituents, given in (17).[8]

(17) (segment)
(mora)
(syllable)
(foot)
phonological word
(clitic group)
phonological phrase
intonational phrase
utterance

PP is therefore a theory of phonological domains, a subsystem of the phonological component of the grammar that organises strings of language

[8] The phonological units given in parentheses only feature in some of the analyses written within the framework of PP; some of them, e.g., the clitic group, are even rejected as a prosodic constituent by most authors.

into these phonological units, which constitute the domains of application of phonological rules.

3.3 GA flapping in PP

Most of the data of *t*-flapping presented in this paper come from PP publications, indicating that this issue has long been in the focus of attention in analyses in terms of prosodic constituents. For the sake of convenience, the ones usually treated are repeated in (18), together with a few cases not yet discussed.

(18) **GA flapping—Data set 4** (Kaisse 1985, Nespor & Vogel 1986)
- a. á[ɾ]om, a[t^{h}]ómic
- b. hi[ɾ] Ánn, hi[ɾ] Aníta, hi[t^{ʔ}] me
- c. grow [t^{h}]omátoes
- d. a [t^{h}]íssue, a[ɾ] íssue
- e. wai[ɾ] a mínute
- f. Please wai[ɾ]. I'll be right back.
- g. They didn't wai*[ɾ]. I'll be right back.

As pointed out by Nespor & Vogel (1986 : 46), flapping may apply across two words in different sentences but not across just any pair of sentences. Where the two sentences are unrelated, flapping is ruled out. It has been identified as a *U* domain rule, i.e., it applies in the domain of the phonological utterance. The phonological utterance is the largest constituent in the prosodic hierarchy. Like the other prosodic constituents, it makes use of syntactic information in its organisation but is not necessarily isomorphic to any syntactic constituent; moreover, its structuring does not only depend on phonological and syntactic factors but is also driven by factors of a logico-semantic type. The crucial factor determining whether two or more sentences form a single utterance seems to be the nature of the relationship between the sentences. Namely, adjacent utterances may be joined into a single *U* when certain pragmatic and phonological conditions are met; in addition, the *U*'s must contract a certain syntactic and/or a positive semantic relation (hence the situation in (18f–g)) (for an exact definition of the phonological utterance and further details see Nespor & Vogel 1986, chapter 8).

As the PP analysis in Nespor and Vogel has already been outlined in §**2.1,** it will not be repeated here. Instead, let us consider Jensen's (2000) account of GA stop allophones along the same lines. Essentially, it consists

of a set of ordered rules that can be sketched out as follows: (i) tensing of all consonants in foot-initial position; (ii) aspiration of [+tense] voiceless noncontinuants; (iii) flapping of [−tense] nonstrident coronal stops between a [−cons] segment and a vowel within the utterance; (iv) glottalisation of [−tense] voiceless stops between a sonorant and zero or more syllable-final consonants. This is virtually the same as all other PP derivations of GA *t/d*-alternation, and as such it suffers from a serious weakness, arbitrary (extrinsic) rule ordering (also pointed out in §**2.1**). We suggest, however, that this drawback is avoided if PP is accompanied by the representations and "derivational" machinery offered by Strict CV Phonology.

4 A compromise and a conclusion

In the above sections two theoretical frameworks have been introduced, and the inadequacy of both in properly handling the GA data of flapping has been emphasised. On the one hand, Strict CV Phonology offers congenial analytical tools in the form of a universal CV skeleton and the redefinition of government and licensing, though it is unable to tackle the problem posed by flapping penetrating phonological units higher than the word. On the other hand, PP does account for all the facts in the four data sets (points (1), (11), (14), (18)), but it does so making use of a rather outdated notion of derivation.

It is proposed here that both would benefit from a framework featuring a combination of their strengths. Thus, PP would be freed from rule ordering, and CV Phonology as outlined above would also improve to cover more (all?) occurrences of flapping. According to this suggestion, the prosodic hierarchy above the phonological word providing the domain within which flapping applies is built on top of the CV skeleton, and the empty CV unit standing for the word boundary is inserted at the beginning of the phonological word and/or utterance-initially (to take care of the non-flapping *t*'s of function words)—a precise description of the process is still to be found, which calls for further research.

Additional support for expressing syllabic and foot-level constituency in terms different from the prosodic units is given by the observation of the differences made by proponents of PP and based on independent evidence:

(19) "... in light of many differences between metrical units and those which function as rule domains, a number of researchers have suggested that the two constituent types belong to separate hierarchies[9](Selkirk 1986, Zec 1988, Inkelas 1989)" (Inkelas & Zec 1995 : 549, endnote 3)

A final remark concerning GA *t/d*-flapping is in order here, and it includes a rather puzzling set of data first observed by Withgott (1982) and cited in Jensen 2000 : 209.

(20) capi[ɾ]alístic vs. mili[t^{h}]arístic, sani[t^{h}]isátion, mono[t^{h}]onícity

Despite being in identical stress environments in the two columns of (20), the *t*'s are realised in two different ways. Jensen (2000 : 210–211) explains this in terms of a cyclic derivation of stress; namely, it is the stress occurring in the syllables starting with the *t* in *military, sanitise* and *monotone*, from which the words in the right-hand column of (20) have been derived, that prevents flapping in those cases. These data, if cannot be analysed otherwise, contradict a long-standing view about flapping as a postlexical rule, being insensitive to the internal structure of words — a major assumption of this whole paper.

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[9] That is why syllables and feet are bracketed in (17) — BBK.

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