The beginning of the word

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Abstract

In this paper an argument is made for the existence of an initial CV site to the left of every major category. In section 1, I will first discuss a noted asymmetry in the organization of word-initial consonant sequences. In section 2, the issue of word boundaries will be briefly revisited. Section 3 contains an answer to the questions raised in section 1. Finally, section 4 is a case study of definite article cliticization in French, and failure thereof in Biblical Hebrew.

1. Word-initial clusters

It has long been observed that some languages tolerate at most, one single consonant at the left margin of words, whereas other languages tolerate two, or more.[1] Kusaiean, a language spoken in Kusaie, one of the eastern Caroline Islands (Lee, 1975; 1976), or Ticuna, a language spoken in Colombia, Peru and Brazil (Montes Rodriguez, 1995), belong to the first type. English, or Maghribi Arabic, belong to the second type. It has, moreover, been observed that an implicational universal obtains, whereby a language tolerating a sequence of two word-initial consonants will tolerate single word-initial consonants (but, of course, not vice versa). The two types of languages just described appear to exhaust the attested cases. Indeed, to the best of my knowledge, no third type has been documented, whereby a language would tolerate two word-initial consonants while at the same time ruling out single consonants word-initially.

In turn, two types can be recognized amongst languages tolerating word-initial consonant sequences. One type strictly enforces an arrangement,

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[1]   sCC clusters will not be dealt with in this paper. See Harris (1994), Kaye (1992), Lowenstamm (1981) for discussion of their special status.

where the least sonorous consonant must appear to the left of the more sonorous one. Thus, English has *blue*, and *true* but not **lbue*, **rtue*, etc. The other type allows both sequences of increasing sonority and sequences of decreasing sonority in word-initial position. Here too, an implicational universal has been recognized: if a language displays word-initial sequences of decreasing sonority, then it displays word-initial sequences of increasing sonority (of course, not vice-versa). To be sure, no language has been reported to display the mirror image of the type exemplified by English, that is a language with word-initial sequences restricted to the decreasing sonority type.

The last two types are documented in (1), with English displaying familiar [obstr.][liquid] clusters, and Moroccan Arabic exhibiting similar sequences, but also their mirror images.

(1)   English   Moroccan Arabic
        obstr.–liquid   *obstr.–liquid*   *liquid–obstr.*
        brick   **br**ɪd   'cool down'   **rb**ɪṭ   'bind'
        dream   **dr**ɪb   'hit'   **rḍ**a   'accept'
        glow   **gl**ɪ\ʕ   'remove'   **lg**a   'find'

In fact, the range of word-initial sequences allowed in Moroccan Arabic extends well beyond the set defined in (1), including types of sequence that are not tolerated in English: sequences of stops, obstruent-nasal sequences, etc. each with their mirror image, e.g. ***bk**a* 'cry' vs. ***kb**ɪr* 'grow larger'; ***nz**ɪl* 'descend' vs. ***zn**a* 'commit adultery'; ***dn**a* 'come near' vs. ***nd**ɪm* 'regret'; ***bq**a* 'stay' vs. ***qb**ɪl* 'accept'.

The state of affairs in Semitic, only partially documented above, has led to the view put forward in Kaye, Lowenstamm & Vergnaud (1990), where templatic languages imposing no sequential restrictions on clustering are to be analysed as having only open syllables.[2] I assume here the results of Lowenstamm (1996), an attempt to generalize this view to all languages.[3]

The basic mechanism involved is Proper Government (henceforth PG), as shown in (2) with the English example *brick*.

(2)   C   Vᵢ   C   Vⱼ   C   V
        | | | | | |
        b   Ø   r   ɪ   k   Ø

In (2), V_i, the empty vocalic position between *b* and *r*, is licensed by PG from V_j, the phonetically identified vocalic position to its right and can therefore remain phonetically unidentified.[4] This example illustrates how PG correctly handles all the English and Moroccan Arabic cases in (1).

However, an entire area remains uncovered by this account. Clearly, the right predictions are made concerning the behaviour of the vocalic positions entering into the PG relation. The establishment of a PG relation also provides the formal means for surface clustering to occur. However, since PG is defined only with reference to vocalic positions adjacent on the nuclear projection, it has nothing to say about the nature of the consonants flanking the governee. That is, under PG, no particular order of those consonants is expected. Thus, everything being equal, Moroccan Arabic with its free order is the expected case. Accordingly, the absence of the hypothetical class of languages alluded to above, where clusters of decreasing sonority would be the only type allowed, becomes a non-issue: why should such an outlandish restriction obtain? More generally, why should any restriction obtain at all? However, by the same token, the strict ordering actually evidenced by English and many other Germanic and Romance languages becomes mysterious, indeed no less outlandish, than the hypothetical, unattested case just described.[5]

2. *Word edges, word boundaries*

An important notational convention of Chomsky & Halle (1968), henceforth SPE, is the assignment in certain places of the boundary symbol #. Thus, at some point in the derivational history of a syntactic string, an item, say the noun *kit*, becomes associated with occurrences of that symbol to its right and to its left as in (3).

(3)   #kit#

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[4]   I adopt the proposals of Kaye (1990) for the licensing of the final empty nucleus, a topic not further discussed in this paper.
[5]   It has been pointed out to me that the peculiar form of clustering displayed in Germanic and Romance follows, in straightforward fashion, from a theory of syllable structure countenancing branching onsets. Thus, the inability of a strict CV framework to recognize branching onsets must, supposedly, be viewed as a serious, inherent flaw of such a program. Of course, the objection evaporates when it is realized that the only argument for branching onsets is precisely their being the seat of the restriction under discussion (see Blevins, 1995 for discussion).

Kahn (1976), in his important dissertation, observed that the expression $\left\{\begin{matrix} C \\ \# \end{matrix}\right\}$ occurs in the environment of many phonological rules. This can be illustrated by a process of monophthongization in Yiddish. In most dialects of Yiddish, a diphthong will shorten to a monophthong before two consonants in items belonging to the Hebrew-Aramaic component of the lexicon.

(4)   soyxır 'merchant'   soxrım (*soyxrım) 'merchants'
       soyfır 'scribe'   sofrım (*soyfrım) 'scribes'

The same phenomenon can be observed before a word-final consonant.

(5)   dor   'generation'   doyrıs (*doyr)   'generations'
       sod   'secret'   soydıs (*soyd)   'secrets'

In standard SPE notation, the phenomenon would be encoded as in (6).

(6)   Vy → V / __ C $\left\{\begin{matrix} C \\ \# \end{matrix}\right\}$

Kahn also noted that # shares virtually no properties with the class of segments with which it so often co-occurs in such expressions. In an attempt to solve this paradox (viz. the popularity of such rules and the highly unnatural character of their environment), Kahn submitted that $\left\{\begin{matrix} C \\ \# \end{matrix}\right\}$ is but a notational artefact standing in reality for the syllable boundary. While Kahn's proposal led to the recognition of the syllable in post-SPE phonology, thereby significantly reducing the number of occurrences of # in the rule component of individual grammars, the need for # was not evacuated altogether. Indeed, a number of phenomena are characteristic of left word edges, although not of word-internal onsets. For instance, reference to word-initial position must crucially be allowed for the statement of synchronic allophonic selection.

This point can be illustrated with an example from Chaha, an Ethio-Semitic language of the Gurage group. In Chaha, the segment /r/ is barred from word-initial position, where it is regularly replaced by its strong alternant /n/. Thus, all the Perfect forms of verb *näkʸäräm* 'win in a lawsuit' are n-initial, whereas the Present and Jussive conjugations faithfully restore the original form of the root-initial consonant /r/ in their prefixed forms.

(7)		*Perfect*	*Present*	*Jussive*
	1SG.COM.	näkʸärxʷɪm	äräkʸɪr	nɪräkɪr
	2SG.MASC.	näkʸärxäm	tɪräkʸɪr	näkɪr
	2SG.FEM.	näkʸärçɪm	tɪräkʸi	näki
	3SG.MASC.	näkʸäräm	yiräkʸɪr	yäräkɪr
	3SG.FEM.	näkʸäräcɪm	tɪräkʸɪr	tɪräkɪr
	IMP.	näkʸärim	yiräkʸri	yäräkʷri
	1PL.COM.	näkʸännäm	nɪräkʸɪnnä	nɪräkɪnnä
	2PL.MASC.	näkʸärxum	tɪräkʸro	näkro
	2PL.FEM.	näkʸärxɪmam	tɪräkʸräma	näkräma
	3PL.MASC.	näkʸärom	yiräkʸro	yäräkro
	3PL.FEM.	näkʸärämam	yiräkʸräma	yäräkräma

Another well-known example from the history of Biblical Hebrew which highlights the special status of the left word edge can be quoted from Gesenius (1910: 186):

In consequence of a phonetic change which prevails also with few exceptions in the noun, *w* in Hebrew and Aramaic always becomes *y*, at least when it is the initial consonant; but after preformatives it [...] reappears   Gesenius (1910: 186)

A third example of a phenomenon taking place only word-initially, is the palatoalveolarization of pre-consonantal /s/ in Standard German, e.g. *streng*, S*tadt*, *spazieren* vs. A*strid*, *erste*, W*espe*.

Building on the representational format of Lowenstamm (1996), I offer in (8) an alternative to the traditional representation #kit#.

(8)   C V C V C V
       | | | |
       k i t Ø

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.

In addition, I adopt the revised version of PG put forward in Scheer (1996). In the context of what must be the most comprehensive discussion of vowel/Ø alternations in Czech, Scheer examines the behaviour of prefixes

such as *od/ode*, which can be loosely glossed as 'away'. The selection of the long and short forms of the prefix is partially illustrated in (9).[6]

(9)   a.   ode-psat   (*od-psat)
      b.   od-pisovat   (*ode-pisovat)
      c.   od-blanit   (*ode-blanit)

Cases (9a–b) are perfectly straightforward, as shown in (10a–b) respectively: an ungoverned prefix-final V position must be phonetically identified (10a), and a governed prefix-final V position remains silent (10b).

(10)   a.   C V C V - C V C V C V   b.   C V C V - C V C V C V C V
            | | | | | | | | | | | | | | | | | |
            o d e   p Ø s a t   o d Ø   p i s o v a t

More problematic is (9c). Under the standard view, the vocalic position realized as ***a*** (bold in (11a)) governs the vocalic position to its left. Consequently, the final V position of the prefix remains ungoverned and should surface as [e]. Addressing this challenge, Scheer (1996) develops an independently motivated account of consonant interaction such that a sequence consisting of an obstruent followed by a liquid constitutes a closed domain.[7] As a result, the position identified by ***a*** (11a) in *od-blanit* governs the final vocalic position of the prefix, as shown in (11b).[8]

(11)   a.   C V C V - C V C V C V C V   b.   C V C V - C V C V C V C V
            | | | | | | | | | | | | | | | | | | | |
            o d Ø₍?₎ b Ø l **a** n i t   o d Ø   [b Ø l] a n i t

The descriptive potential of this revised model will be illustrated in the form of a second pass at the issue raised in §1.

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[6]   While the examples in (9) illustrate the point at hand in this paper, they hardly do justice to the complexity of the overall situation in Czech, or to the wealth of material dealt with in Scheer (1996). Readers with a closer interest in the analysis of Czech are urged to reserve judgement on these results until Scheer (1996) has been directly consulted.
[7]   This idea is reminiscent of a proposal put forward in Hirst (1985).
[8]   Certain aspects of Scheer's analysis are reminiscent of the proposals put forward by Gussmann & Kaye (1993) for Polish.

3. Word-initial clusters, *again*

In this section, we return to the challenge raised by the shape of word-initial strings of consonants, namely: why are the options limited to the strict increasing sonority type, or to the entirely unordered type?

Let us first consider the case of a language of the first type, French. French word-initial configurations of the type discussed in this paper, i.e. with the exception of sC(C) clusters, are exhausted by the two cases exemplified in (12), by a 'single' onset in (12a) and by a 'branching' onset in (12b).

(12) a. *tapis*   [tapi]   'rug'
      b. *plateau*   [plato]   'tray, plateau'

The representations of these forms, in the terms advocated here, are given in (13).

(13) a. **C V** C V C V   b. **C V** C V C V C V
          t **a** p i s   [p ∅ l] **a** t o

In both cases, the first vowel (bold) governs the V position of the initial site. Consequently, the generalization in (14) obtains for French, and languages of the same type.

(14) Initial site always licensed in French

Consider now the case of Biblical Hebrew, a language of the second type. A number of roots appear in the first column of (15), along with the singulars and plurals of the segholate nouns derived from those roots.

(15) Root   Singular   Plural
      a. √**kl**b   kéleβ   'dog'   **k∅l**aβim   'dogs'
      b. √**lk**d   léxeð   'capture'   **l∅x**aðim   'captures'
      c. √**qr**b   qéreβ   'midst'   **q∅r**aβim   'midsts'
      d. √**rq**ħ   réqaħ   'spice'   **r∅q**aħim   'spices'

The careful reader will have noticed that the first two consonants (bold) in the roots of (15a–b), and those of (15c–d), are mirror images of each other, viz. /kl/ vs. /lk/ and /qr/ vs. /rq/. The plurals in the segholate class are derived by syncope of the initial vowel, thus blindly giving rise, in this case, to surface sequences of obstruents and liquids of the strictly unordered type *qr*, *rq*, etc. Representations of those forms appear in (16).

(16)   a.   *obstr.–liquid*   b.   *liquid–obstr.*

```
         [k Ø l] a b i m                         l Ø k a d i m
          | | |  | | | |                         | |  | | | |
     C V  C V C V C V                       C V  C V C V C V
          | | |  | | | |                         | |  | | | |
         [q Ø r] a b i m                         r Ø q a ħ i m
```

In (16a), the obstruent and the liquid occur in such an order that the first
vowel can govern the V position of the initial site. In (16b), on the other hand,
the order of the first two consonants is such that government of the inter-
vening empty vocalic position is required. As a consequence, in this case,
the V position of the initial site remains ungoverned. Hence, the generaliza-
tion in (17) can be said to obtain of Biblical Hebrew, and languages display-
ing initial consonant sequences of the same ilk.

(17)   Initial site "not always" licensed in Biblical Hebrew

The claim made here is that the government status of the initial site pro-
vides a rationale for the mysterious state of affairs under scrutiny: lan-
guages strictly abiding by the increasing sonority sequencing generalization
will display a systematically licensed initial site, and languages oblivious to
that generalization will not.

It can readily be seen that no third option is available in terms of the pro-
posed rationale, i.e. that the empirically correct dichotomy opposes "always
licensed by government" and its logical negation "not always licensed by
government". The obvious alternative dichotomy might oppose languages
in which the initial site is always licensed by government and those in which
it is never licensed by government.

Under what conditions would the initial site never be licensed by gov-
ernment? Surely, a language that displayed only word-initial sequences of
decreasing sonority, would meet such a condition. In such a language,
sequences of liquids and obstruents would appear in just that order, say
rdab, *lbad*, etc. to the exclusion of the reverse order, **drab*, **blad*. Words of that
type would exhibit an unlicensed initial site as shown in (18), where /a/
governs the empty vocalic position between /l/ and /b/, leaving the V of the
initial site ungoverned.

(18)   Initial site status: unlicensed

```
          l Ø b a d
          | | | | |
     C V  C V C V C V
```

It could then be said of such a language, that the initial site of its cluster-initial words is never licensed by government. However, for the initial site never to be licensed by government across the entire lexicon of that hypothetical language, an additional condition would have to be met, namely (19).

(19)   No lexical item may display an initial sequence of a consonant followed by a vowel

Unless such a condition were met, items such as say *dab*, *tap*, etc. would exist, alongside **lbad*, **rdab*, etc., the former exhibiting an inevitably licensed initial site, as shown in (20).

(20)   Initial site status: licensed

C V C V C V
       t **a** p
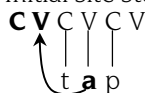
In actual fact, no language has been reported to enforce a requirement such as (19). I conclude that a state of affairs where the initial site would never be licensed is unsubstantiated, and that the empirically correct dichotomy opposes languages in which the initial site is always licensed, and those in which it is not always licensed.

Consequences of that dichotomy are examined in the next section.

4. *Clitics*

In this section, I intend to argue for the thesis in (21).

(21)   a.   The initial CV site is the site of cliticization.
       b.   Cliticization can take place iff the site is licensed.

The discussion in this section will be limited to definite article cliticization in French and Biblical Hebrew. However, (21) includes in its scope pronominal cliticization to the left of verbal forms. Accordingly, several cautionary comments are in order before (21) can be illustrated. First, cliticization can be construed as a syntactic phenomenon or as affixation, two approaches to which the proposal put forward here is neutral. (For an overview and discussion, see e.g. Miller, 1992; Van Riemsdijk, in press, and references therein.) Indeed, (21) is to be viewed as an attempt at sketching out a subset of the factors conditioning cliticization, namely the morphophonological conditioning. Accordingly, it is to be expected that overriding syntactic or morpholexical considerations may block cliticization even under

morphophonologically favourable circumstances. Consequently, failure of cliticization to take place under such conditions will not be construed as necessarily problematic for (21). On the other hand, cliticization is not expected to take place under unfavourable morphophonological conditions, viz. when the site is unlicensed. Accordingly, cliticization occurring in spite of such unfavourable conditions would have to be construed as a possible source of refutation of (21). Second, the discussion below is restricted to clitics assuming a CV shape in the sense of the French data soon to be adduced. Clitics of a shape larger than CV will be dealt with elsewhere.

French definite articles are reputed to cliticize onto the nouns they determine. Examples appear in (22).

(22)   a.   *Before "single initial onset" words*
           le + tapis   'the rug'   →   [lətapi]
           la + tasse   'the cup'   →   [latas]
           les + tapis   'the rugs'   →   [letapi]
   b.   *Before "initial branching onset" words*
           le + plateau   'the tray'   →   [ləplato]
           la + place   'the place'   →   [laplas]
           les + plateaux   'the trays'   →   [leplato]
   c.   *Before initial empty onset words*
           le + ami   'the male friend'   →   [lami]
           la + amie   'the female friend'   →   [lami]
           les + amis   'the friends'   →   [lezami]

The respective positioning of the ingredients of cliticization just prior to its operation, I claim, are as shown below in (23). That is, the candidates to cliticization, *le, la, les* approach the item they are about to cliticize onto, from the left.

(23)   a.

```
   C V +  C V  C V C V         b.   C V +  C V  C V C V C V
   | |    | |  | | | |              | |    | |  | | | | | |
   l ə    t a  ...                  l ə    [p Ø l] a  ...
   l a                              l a
   l e z                            l e z
```

   c.

```
   C V +  C V  C V C V
   | |    | |  | | | |
   l ə    a m i
   l a
   l e z
```

The status of the initial site (licensed/unlicensed) undergoes checking. As the initial site is always licensed in French, cliticization successfully takes place in the form of a movement of the candidate item into the site, as in (24).

(24) a.
```
C V + C V C V C V
      | | | | | |
      l ə t a ...
      l a
      l e z
```
b.
```
C V + C V C V C V C V
      | | | | | | | |
      l ə [p Ø l] a ...
      l a
      l e z
```
c.
```
C V + C V C V C V
      | |  ↑ | | |
      l ə | a m i
      l a |
      l e z
```

The deserted CV, to which the article was originally attached, now stands ready to host a further candidate for cliticization if one is queuing up.[9] In the absence of candidates, it will simply wither away.

We now turn to the behaviour of Biblical Hebrew definite articles. Consider the ingredients involved in the combination of the definite article /ha/ and some of the plurals of the segholate class discussed earlier.

(25) ha + kØlaβim 'the dogs'
     ha + rØqaħim 'the spices'

Representationally, the configurations involved, shown in (26), are very similar to the French analogues in (23), prior to cliticization.

(26) a.
```
h a        [k Ø l] a b i m
| |         | | | | | | |
C V + C V C V C V C V C V
| |         | | | | | | |
```
b.
```
h a         r Ø q a ħ i m
```

However, the status of the initial CV site in Biblical Hebrew differs from its French counterpart. Whereas the site is always licensed in French, it is not always licensed in Biblical Hebrew. I assume here the convention in (27) for the interpretation of a language such as Biblical Hebrew.

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9 This is essentially the mechanism behind unbounded cliticization, e.g. *je ne te le donnerai pas* [I NEG you it give-will NEG] 'I won't give it to you'.

(27) *The Uniformity Convention*
For any given language, cliticization operates in uniform fashion with respect to the licensing status of the host site

The intended meaning of (27) can be illustrated by a comparison of (26a) and (26b). In (26a), owing to the specific ordering of the obstruent and the liquid, the site is governed; by contrast, for the reverse reason, the site is ungoverned in (26b). However, according to (27), checking does not operate item by item.[10] Rather, if the initial CV is not be licensed in all cases, then the site must remain unlicensed throughout the language. Accordingly, definite article cliticization in Biblical Hebrew is blocked across the board.

A phonological consequence ensues: the manifestation of the initial site. Whereas an empty, uninterpreted initial CV normally remains silent, the initial CVs in the Biblical Hebrew cases under consideration are now stuck in the midst of a phonological word. As such, they have become part and parcel of that word, and they must undergo phonetic interpretation. Two strategies are available. The first, more popular strategy involves gemination of the root initial consonant, /k/ in (28a); the second strategy, activated when the root initial segment is one of the five consonants resisting gemination, involves compensatory lengthening of the definite article's vowel, (28b).[11]

(28) *Gemination (=a.) vs. compensatory lengthening (=b.)*

5. Conclusion

In this paper, a number of arguments have been put forward to the effect that an empty CV site precedes every major category. The postulated site rationalizes the organization of word-initial consonant sequences. More-over, it accounts for the differential behaviour of definite articles in languages such as French and Biblical Hebrew. Further work on Korean

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[10] Evidently, Biblical Hebrew enforces a version of the Uniformity Condition. While I am not familiar with languages in which checking would operate in an item-by-item fashion, such an option cannot be ruled out in principle.

[11] This phenomenon is described in every grammar of Hebrew, see Bauer & Leander (1922), Ewald (1870), Gesenius (1881), Joüon (1923), and Lowenstamm & Kaye (1986) for discussion.

compounds, the Berber construct state, Fulani nominal classes, sC(C) clusters in French, German and Spanish, Romance clitics, etc., is expected to yield additional evidence for the hypothesized site.

Acknowledgements

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