Typologies of the Syllable

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Questions:

Why syllable structure?

What do syllables look like?

How does sonority fit in?

How does markedness fit in?

How to express edge effects?

I Why syllable structure?

(1) *Domain of application*;
 emphasis spread in *Cairene Arabic*

[tˤɑˤ:bˤ]	'ripened'	[ta:b]	'repented'
[bˤɑˤ:tˤ]	'armpit'	[ba:t]	'spent the night'
[bˤɑˤ:bˤɑˤ]	'dad'	[ba:ba]	name of month
[wˤɑˤlˤlˤɑˤ]	'by God'	[walla]	'or'

[kˤɑˤ:kɪ]	'cackle'
[tˤiˤ:nɪ]	'my mud'
[zˤʊˤlˤmɪ]	'my injustice'
[sˤeˤ:fɪ]	'my summer'

English Phonotaxis: Kahn's famous example <atktin> [ætktɪn] (Kahn 1976).

(2 *The distribution of tone in*
 Limburg (Gussenhoven 2004)

[kɑt]	'cat'
[pʊp]	'puppet'
[stæk]	'stick'

[kɑl²]	'nonsense'	[kɑl¹]	'to talk'
[stɑl²]	'stable, sg.'	[stæl¹]	'stable, pl.'
[pɪn²]	'peg, sg.'	[pɪn¹]	'peg, pl.'
[kɑn²]	'to be able'	[kɑn¹]	'jug'

[mɑt]	'mat'
[mʊp]	'joke'
[lɑt]	'lath'
[læk]	'to lick'

Hausa

tá	'via'
dà	'with'
sái	'until'
wàa	'who'
sôo	'pail'
zân	'I will'
kâr̃	'don't'
màcè	'woman'
mázáa	'wife, pl.'

(3) *The distribution of glides in*
  Lenakel

/i-ak-ol/	[yágɔl]	'I do it'
/t-i-ak-ol/	[tyágɔl]	'I will do it'
/i-n-ol/	[ínɔl]	'I have done it'
/iik/	[yík]	'you, sg.'
/uus/	[wús]	'man'
/uikar/	[wígar]	'seed'
/kiukiu/	[kyúgyu]	'to shake the body'
/uiuou/	[wíwɔw]	'boil'

  Berber

/i-ari/	[jari]	'he writes'
/u-ansa/	[wansa]	'place'
/i-ru/	[iru]	'he cried'
/u-mazan/	[umazan	'messenger'

(4) *The position of Stress* (Van der Hulst 1984)
  Dutch

cánada	
plátina	'platinum'
fárao	
sálomon	
ánanas	'pine-apple'
abó*rt*us	'abortion'
olý*mp*us	
reflé*ct*or	
kóli*br*i	'humming-bird'
pá*pr*ika	
ná*tr*ium	
á*br*aham	

(5) *Reduplication*
  Ilokano plural

pusa	pus-pusa	'cats'
jyanitor	jyan-jyanitor	'janitors'
kaldiŋ	kal-kaldiŋ	'goats'

Mokilese Prefix

pɔdok	pɔd-pɔdok	'plant'
mʷiŋe	mʷiŋ-mʷiŋe	'eat'
kasɔ	kas-kasɔ	'throw'
pilɔd	pil-pilɔd	'pick breadfruit'
kookɔ	koo-kookɔ	'grind coconut'
sɔɔrɔk	sɔɔ-sɔɔrɔk	'tear'
čaak	čaa-čaak	'bend'

Ilokano Prefix

buneŋ	si-bu-buneŋ	'carrying a buneng'
jyaket	si-jya-jyaket	'wearing a jacket'
pandiliŋ	si-pa-pandiliŋ	'wearing a skirt'

Diyari reduplication

singular	*plural*	
wila	wila-wila	'woman'
ŋankanti	ŋanka-ŋankanti	'catfish'
tʲilparku	tʲilpa-tʲilparku	'bird species'

Yidiɲ reduplication

mulari	mula-mulari	'initiated man'
tʲukarpa	tʲukar-tʲukarpan	'unsettled mind'
kintalpa	kintal-kintalpa	'lizard species'

(6) *Elimination of arbitrary devices*
   Final devoicing in Dutch

1ˢᵗ p.		*infinitive*		
/krɑb/	[krɑp]	/krɑbən/	[krɑbə]	'skratch'
/rɛd/	[rɛt]	/rɛdən/	[rədə]	'save'
/klɑp/	[klɑp]	/klɑpən/	[klɑpə]	'applaud'
/zɛt/	[zɛt]	/zɛtən/	[zɛtə]	'put'

<han*dz*aam>	'handy'	/dz/	[ts]
<he*bz*ucht>	'avarice'	/bz/	[ps]
<graa*fz*ucht	'digging urge'	/vz/	[fs]
<ABVA>	name	/bv/	[pf]

   Epenthesis in Lenakel

/t-n-ak-ol/	[tɨnágɔl]	'you (sg.) will do it'
/t-r-ep-ol/	[tɨrébɔl]	'he will then do it'
/n-n-ol/	[nɨ́nɔl]	'you (sg.) have done it'
/r-n-ol/	[rɨ́nɔl]	'he has done it'

4

/kam-n-m̄an-n	[kàmnɨm̄ánɨn]	'for her brother'
/əs-ət-pn-aan/	[ə̀sədbɨnán]	'don't go up there'
/k-ar-pkom/	[karbɨgɔm]	'they are heavy'
/ark-ark/	[argárɨkʰ]	'to growl'
/r-əm-əŋn/	[rəmə́ŋɨn]	'he was afraid'

Deletion in Diola Fogny

/ujuk-ja/	[ujuja]	'if you see'
/let-ku-jaw/	[lekujaw]	'they won't go'
/kob-kob-en/	[kokoben]	'yearn for'
/a-jaw-bu-ŋar/	[ajabuŋar]	'voyager'
/na-lañ-lañ/	[nalalañ]	'he returned'
/na-yoken-yoken/	[nayokeyoken]	'he tires'
/na-wañ-am-wañ/	[nawañawan]	'he plowed for me'
/ni-maŋ- maŋ/	[nimammaŋ]	'I want'
/ni-ŋan-ŋan/	[niŋaŋŋan]	'I cried'
/najum-to/	[najunto]	'he stopped'
/ni-gam-gam/	[nigaŋgam]	'I judge'
/na-tiŋ-tiŋ/	[natintiŋ]	'he cut through'
/ku-boñ-boñ/	[kubomboñ]	'they sent'

II What do syllables look like?

(1) A classical model:
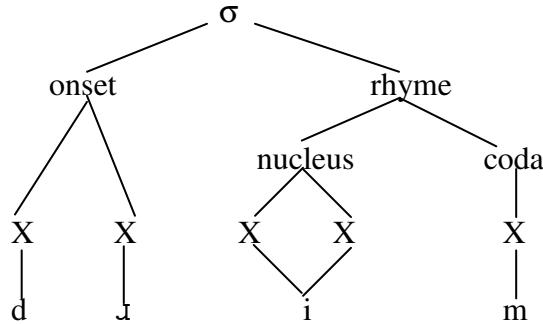
(2) Segments impose restrictions on each other in the domain of the onset, the nucleus, the rhyme. Furthermore, the restrictions holding among the prevocalic (tautosyllabic) segments are sometimes different from the restrictions holding among the postvocalic (tautosyllabic) segments.

One *Dutch* example illustrating rhyme restrictions:

<dop>	[dɔp]	'lid'
<dor>	[dɔr]	'barren'
<dorp>	[dɔrp]	'village'
<doop>	[do:p]	'baptism'
<door>	[do:r]	'through'
*<doorp>	*[do:rp]	

English is a good example of a language where the postvocalic consonant clusters are 'different' from the prevocalic clusters: consider the postvocalic clusters: /rl, rm, rn, lm, ln, nd, mp, ŋk/ and compare them with their mirror image in the onset.

(3) No relations exist between two segments across the onset-nucleus boundary, or if they exist they are of a special type.
For instance, in Dutch relations do exist between the prevocalic (tautosyllabic) consonant and the following vowel:

    *wy, *wø
    *sy, *sø
    *fø
    *je, *ji, *jy
    *kw + round vowel
    *sn + {i,y}

These relations differ from the ones holding between the postvocalic (tautosyllabic) consonant and the preceding vowel.

(4) Heavy and light syllables; a typology
   a) Khalkha Mongolian, Fijan, Selkup   heavy: CVV
   b) Kwakʼwala   heavy: CVV, CVL, CVN
   c) Cairene Arabic, Latin   heavy: CVV, CVL, CVN, CVO.

(5) *Fijian*:
   atómi   'atom'
   nˆdìkonési   'deaconess'
   perèsiténˆdi   'president'
   mˆbàsikètepólo   'basketball'
   mˆbè:léti   'belt'
   taràusése   'trousers'
   mˆbèlemˆbò:tómu   'bellbottoms'
   parò:karámu   'program'
   mì:sìniŋˆgáni   'machine-gun'

   mˆbasá: 'bazaar'
   nˆdòketá: 'doctor'
   palàsitá: 'plaster'
   mìnisìtirí: 'ministry'
   terènisìsitá   'transistor'
   paràimarí: 'primary'
   nˆdàirèkitá: 'director'

(6) *Latin*
   <amicus>   [amí:kus]   'friend'
   <domesticus> [doméstikus]   'belonging to the house'
   <simulus>   [símulus]   'flatnosed'

(7) In the classical models weight (stress attraction) is expressed at the rhyme level or the nucleus level. Onsets are (almost) always irrelevant to stress attraction.

(8) By the way, there are some difficult cases. Here is one:
   Pirahã (Hayes 1995).

Pirahã stress pattern; of the last three syllables in a word, main stress falls on the strongest according to the following hierarchy:

   KVV > GVV > VV > KV > GV   where K is [-voice], G is [+voice]

   k*a:* gai   'word'
   soi *oá* ga hai   'thread'
   po: *gáí* hi aí   'banana'
   ʔí bo gí   'milk'
   ʔa ba pa   proper name
   ko po   'cup'
   paó hoa hai   'anaconda/rainbow'

(9) A moraic model:
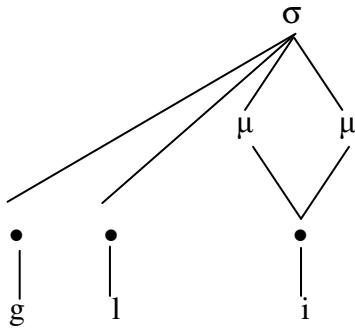
(10) a) Weight attraction (heaviness) is expressed at the moraic level. Onsets can therefore never attract stress.

   b) Length is also expressed with moras; long vowels have two moras; geminates have one mora.
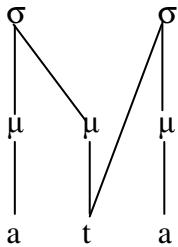
(11) This predicts that geminates always attract stress (in a language where stress is attracted by heavy syllables). *Selkup* and *Leti* are notorious problems for this hypothesis:

Selkup stress
In Selkup stress falls on the rightmost heavy syllable, or else on the initial syllable. CVC-syllables count as light; so do syllables closed by the first half of a geminate.

qumó:qi	'two human beings'
ámɨrna	'eats'
ú:cɨkkak	'I am working'

Leti stress
In Leti, word initial heavy syllables attract stress, in addition to penult syllables. However, initial syllables with geminates do not attract stress.

| má:n^{w}or^{y}óri | 'crow' |
| ppunárta | 'nest's edge' |

(12) The mora theory explains the onset/rhyme asymmetry in Compensatory Lengthening (Hayes 1989).

Greek CL
*woikos	>	oikos	'house'
*newos	>	neos	'new'
*odwos	>	oodos	'threshold'

Latin CL
*kasnus	>	ka:nus	'gray'
*kosmis	>	ko:mis	'courteous'
*fideslia	>	fide:lia	'pot'
*smereo:	>	mereo:	'deserve, 1st p. sg. pres.'
*snurus	>	nurus	'daughter-in-law'
*slu:brikus	>	lu:brikus	'slippery'

(13) There is one well-known problem for the hypothesis that the loss of an onset consonant cannot lead to the lengthening of a vowel (unless accompanied by resyllabification, as in Ancient Greek).

Samothraki Greek

Standard	*Samothraki*	
tirí	tií	'cheese'
hóra	úa	'hour'
forá	fuá	'time'
kávuras	kávuas	'crab'
méra	mía	'day'
ádras	áda:s	'man'
prásinos	pá:snus	'green'
padreyá	padi:yá	'marriage'
rúxa	ú:xa	'clothes'
rota	ó:ta	'ask'

(14) In many languages the loss of a vowel can lead to the lengthening of the vowel in the syllable on the left. This happened in English, for instance (Minkova 1982).

talə	>	ta:l

Mora theory explains this elegantly; too elegantly, in fact. The problem is that in many of these languages the quality of the intervocalic consonant is very important.

Vowel Lengthening in Friulian (Kavitskaya 2002).

lá:t	'gone'	lád-e	fem.
nervó:s	'nervous'	nervóz-e`	fem.
ló:f	'wolf'	lov-út	dim.
fí:k	'fig'	fig-ón	big fig
tróp	'flock'	trop-út	dim.
brút	'ugly'	brút-e	fem.

III How does Sonority fit in?

A *The onset*

(1) The (bisegmental) initial consonant clusters of English (Clemens and Keyser 1983).

|	w	l	R	p	t	k	m	N	f	θ
p	-	+	+	-	-	-	-	-	-	-
b	-	+	+	-	-	-	-	-	-	-
f	-	+	+	-	-	-	-	-	-	-
t	+	-	+	-	-	-	-	-	-	-
d	+	-	+	-	-	-	-	-	-	-
θ	+	-	+	-	-	-	-	-	-	-
k	+	+	+	-	-	-	-	-	-	-
g	+	+	+	-	-	-	-	-	-	-
s	+	+	-	+	+	+	+	+	?	-
ʃ	+	+	+	?	?	-	?	?	-	-

The following consonants do not occur as the first member of a cluster:
/w, l, r, y, h, ð, z, ʒ, tʃ, dʒ, n, m, v/.

(2) A positive template:
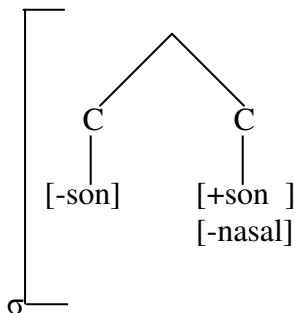
(3) And a few negative constraints:

*bw, pw, fw

```
*┐         ╱╲
 │        C   C
 │        │   │
 │     [+cor]  [+lat ]
 │     [-strid]
 σ
```
      *dl, tl, θl

```
*┐         ╱╲
 │        C   C
 │        │
 │     [-son    ]
 │     [+cont   ]
 │     [-stiff v.c.]
 σ┘
```
      *vw, zl ….

```
*┌┐        ╱╲
 │        C   C
 │        │   │
 │     [+strid] [+cor]
 │     [+cor  ] [+low]
 σ┘
```
      *sr
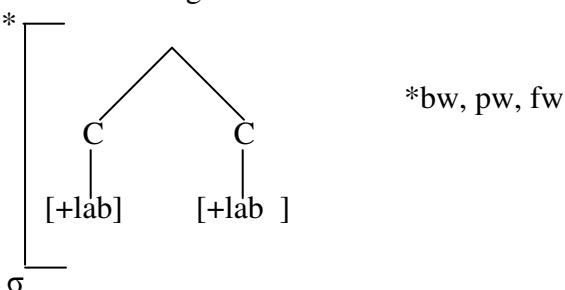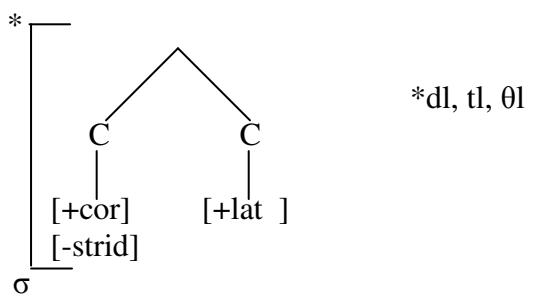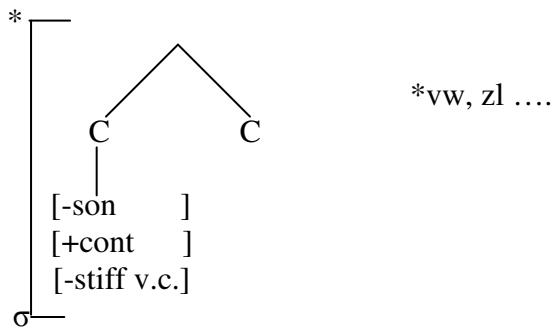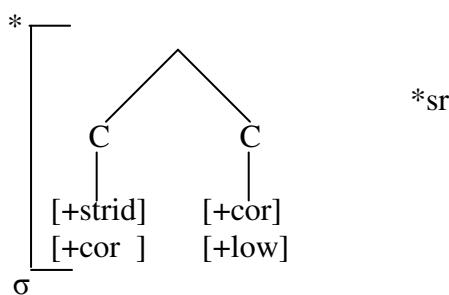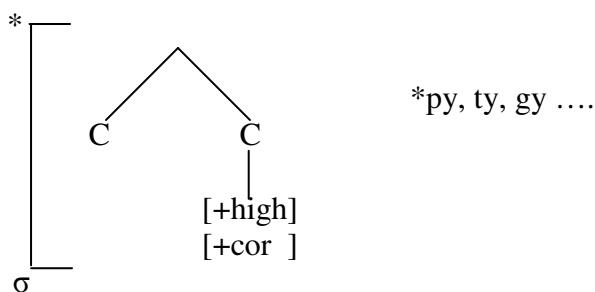
```
*┌┐         ╱╲
 │        C    C
 │             │
 │          [+high]
 │          [+cor ]
 σ┘
```
      *py, ty, gy ….

(4) And another positive templatic constraint:

```
 ┌┐        ╱╲
 │        C   C
 │        │   │
 │     [+strid] [-cont]
 │     [+cor  ]
 │     [+ant  ]
 σ┘
```
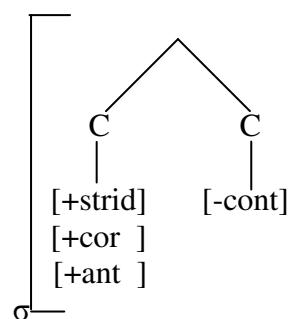
(5) Sonority Sequencing Generalization (SSG)

Between any member of a syllable and the syllable peak, a sonority rise or plateau must occur

(6) Sonority scale

Obstruent   Nasal   Liquid   Glide   Vowel

——►

Increasing Sonority
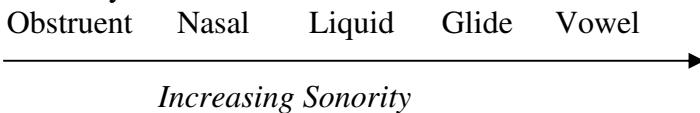
(7) Minimal Distance

Segments associated to X_1 and X_2 must be non-adjacent on the sonority scale

(8) In some languages highly sonorous segments are banned from the onset

Rhotic and glide onsets banned in Sestu

(a) Expected [r]-initial words (Bolognesi 1998: 42)

arːɔza	'rose'	< Lat. *rosa*	arːiu	'river'	< Lat. *rivus*
arːana	'frog'	< Lat. *rana*	arːiku	'rich'	< Ital. *ricco*
arːuβiu	'red'	< Lat. *rubeum*	arːaðiu	'radio'	< Ital. *radio*
arːɔða	'wheel'	< Lat. *rota*			

(b) Expected [j]-initial words (Bolognesi 1998: 44)

Sestu form		Other Campidanian dialects (including Iglesias; see below)
ajaju	'grandfather'	jaju
ajaja	'grandmother'	jaja
dʒu	'yoke'	juu

(c) Initial laterals, nasals, obstruents (Bolognesi 1998: 30, 41, 43–4)

luʒi	'light'	nazu	'nose'
ledʒu	'ugly'	femina	'woman'
latːi	'milk'	bia	'road'
luðu	'mud'	konilːu	'rabbit'

B *The coda*

Often, a coda is severely restricted in terms of sonority. Interestingly, it can happen that a consonant can be rescued by fleeing to the onset.

(9) *Japanese*; homorganic clusters (Itô 1986)

kappa   a legendary being
tombo   'dragonfly'
gakko: 'school'
kaŋgae   'thought'
kitte   'stamp'

(10) Only a nasal glide is allowed in final position

hoN   'book'
hombuN   'main text'
tʃawaN   'cup'

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(11) Borrowings
    konekuʃoN   'connection'
    suturaiki   'strike'
    pa:sona:rukomp^{j}u:ta: 'personal computer'

(12) *Ponapean*
    arewalla   'to return to the wild'
    kemmat   'to change into dry clothing'
    nappa   'Chinese cabbage'
    nampar   'tradewind season'
    naŋkep   'inlet'
    mand   'tame'
    emp   'coconut crab'

(13) Repair in *Ponapean*
    /ak-t̯ei/   [aket̯ei]   a throwing contest
    /kitʂik-men [kitʂikimen]   'rat'
    /p^{w}i:k-men/ [p^{w}i:kimen]   'pig'
                  [sit̯amp]   'stamp'

(14) *Diola Fogny*
    kaŋkan   'made'
    ɛkʊmbaj   'the pig'
    kaband   'shoulder'
    aŋkaŋk   'hard'
    nɪɲaɲɲaɲ   'I rub arms'
    saltɛ   'be dirty'
    arti   'negative'

(15) Repair in *Diola Fogny*
    /lɛt-kʊ-dʒaw/   [lɛkʊdʒaw]   'they won't go'
    /ʊdʒʊk-dʒa/   [ʊdʒʊdʒa]   'if you see'
    /na-laɲ-laɲ/   [nalalaɲ]   'he returned'
    /ɛ-rɛnt-rɛnt/   [ɛrɛrɛnt]   'it is light'

C *The coda and the onset simultaneously (the Contact Law)*

(16) *Kirgiz* loanword adaptation

|	Russian	Kirgiz	
LO	l^{j}vof	ilvop	name of city
NN	mnemonitʃeskij	ɯmnemonitʃeskij	'mnemonic'
OL	trupka	turupke	'pipe'
ON	kniʃka	kineʃke	'book'

(17) Syllable contact in *Sidamo*

/ful-te/	[fulte]	'your having gone out'
/qaram-tino/	[qarantino]	'she worried'
/hab-nemmo/	[hambemmo]	'we forget'
/has-nemmo/	[hansemmo]	'we look for'

D *Can we derive the scale and what is the mapping?*

(18) A representative attempt with traditional features:
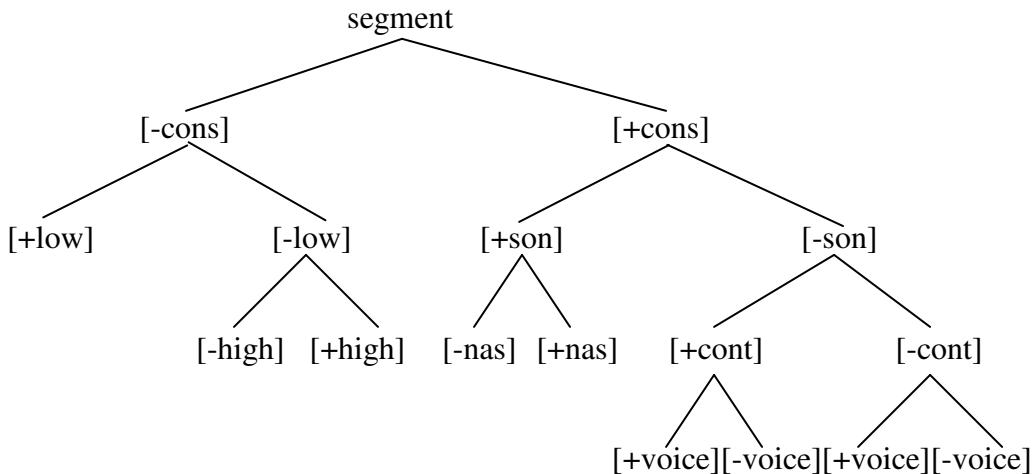
(19) Clements

	Vocoid	Approximant	Sonorant	Value
Vowel	+	+	+	3
Liquid	-	+	+	2
Nasal	-	-	+	1
Obstruent	-	-	-	0

(20) An approach based on Dependency Phonology (Anderson and Ewen 1987)

(21) OT-style mappings (Zec 2007)
   a) *ONS/L » *ONS/N » *ONS/O
   b) *μ/O » *μ/N » *μ/L » *μ/V
   c) *μ_h/O » *μ_h/N » *μ_h/L » *μ_h/V
   d) *ONS/MSD0 » *ONS/MSD1 » *ONS/MSD2
   e) *SC/MSD+2 » *SC/MSD+1 » *SC/MSD0 » *SC/MSD-1 » *SC/MSD-2

(22) Minimal Sonority Distance (Onset)
   MSD0   OO, NN, LL
   MSD1   ON, NL
   MSD2   OL

(23) Minimal Sonority Distance (SC)
   MSD+2   OL
   MSD+1   ON, NL
   MSD0   OO, NN, LL
   MSD-1   LN, NO
   MSD-2   LO

(24) A mapping based on Dependency
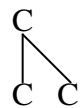
O+O clusters   N+N, L+L, N+L, L+N clusters

```
     C                                  C
    /|                                 /|
   C C                                V V
```

O+N, O+L clusters

```
     C
    /|
   C V
```
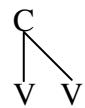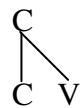
IV How does markedness fit in?

(1) Typology

	v	cv	Cvc	vc	ccv	ccvc	cvcc	vcc	ccvcc	cvccc
Hua	-	+	-	-	-	-	-	-	-	-
Cayuvava	+	+	-	-	-	-	-	-	-	-
Cairene	-	+	+	-	-	-	-	-	-	-
Mazateco	+	+	-	-	+	-	-	-	-	-
Mokilese	+	+	+	+	-	-	-	-	-	-
Sedang	-	+	+	-	+	+	-	-	-	-
Klamath	-	+	+	-	-	-	+	-	-	+
Spanish	+	+	+	+	+	+	-	-	-	-
Finnish	+	+	+	+	-	-	+	+	-	-
Totonac	-	+	+	-	+	+	+	-	+	+
English	+	+	+	+	+	+	+	+	+	+

(2) Let us extract the generalizations.

(3) Why vowel epenthesis, and why consonant deletion? Why is VCV universally syllabified as V.CV? What explains homorganic glide insertion in Dutch and glottal stop insertion in German?

(4) OT's markedness constraints express the implications hidden in the table above and they relate it to phonological processes. *OT explains conspiracies*.

(5) The relevant constraints
   a) ONSET
      A syllable must have an onset

   b) NOCODA
      A syllable may not have a coda

   c) NOCOMPLEXONSET
      A syllable may not have more than one segment in the onset

   d) NOCOMPLEXCODA
      A syllable may not have more than one segment in the coda

   e) MAX
      An input segment has a correspondent in the output (no deletion)

   f) DEP
      An output segment has a correspondent in the input (no insertion)

(6) Let us try to derive epenthesis in *Lenakel*, and deletion in *Diola Fogny*. What explains the universal absence of VC.V syllabification? What explains glottal stop insertion in *German* and homorganic glide insertion in *Dutch*?

(7) Universal absence of VC.V?! What about the 'checked' vowels in a language like Dutch? They appear to be ambisyllabic.

(8) ambisyllabic consonants in Dutch
    <koffie>   [kɔfi]   'coffee'
    <Willie>   [wɪli]   proper name
    <rabbi>   [rɑbi]   'rabbi'
    <kudde>   [kʏdə]   'herd'

(9) Lax vowels (in Dutch) can only appear in a closed syllable. This is why they are 'ambisyllabic'. Evidence:
    a) no words end in a lax vowel; Canad[a] vs. *Canad[ɑ]
    b) no lax vowels in hiatus position; *[hɪa:t], *[krɛo:l vs. *[hia:t], *[kreo:l]
    c) lax vowels attract stress; déc[i]bel vs. kan[ý]nik.

(10) Geminate representation of ambisyllabic consonants (phonetically they are short)
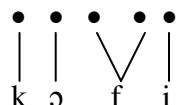
(11) Clearly, superheavy syllables are also marked. There are many languages where processes are activated to eliminate them.

(12) Tilburg Dutch (Swets 2004)

blɛ:və	'to stay'		hɛi blɛft	'he stays'
lʊ:pə	'to walk'		hɛi lʊ:pt	'he walks'
stʊ:tə	'to push'		hɛi stʊt	'he pushes'
bɛ:nə	'to tie'		hɛi bɛnt	'he ties'
rœ:mə	'to empty'		hɛi rœmt	'he empties'

(13) Yawelmani

NONFUTURE	IMPERATIVE	DUBITATIVE	FUTURE	
[ʂaphin]	[ʂapka]	[ʂa:pal]	[ʂa:pen]	'burn'
[doshin]	[dosko]	[do:sol]	[do:sen]	'report'
[lanhin]	[lanka]	[la:nal]	[la:nen]	'hear'
[mekhin]	[mekka]	[me:kal]	[me:ken]	'swallow'

(14) Turkish

POSS	NOM	NOM PL	
[mera:kɯɪ]	[merak]	[meraklar]	'curiosity'
[seva:bɯɪ]	[sevap]	[sevaplar]	'good deed'
[usu:lʲy]	[usulʲ]	[usulʲlʲer]	'method'

V How to express edge effects?

(1) Blevins (1995: 209): 'in all languages, syllable edges correspond with the word/utterance edges …'.

   This is either blatantly trivial, or utterly untrue (depending on your interpretation).

(2) Onsets and codas do not slavishly mimic word edges. Syllable structure is not phoneme driven. Syllable structure is not parasitic on segment strings.

(3) An (unexpected) typology of closed syllables related to position in the word (Harris, J. and E. Gussmann 1998):

Final VC]	Internal VC•	
	NO	YES
NO	Zulu …V•CV]	Italian …V(C)•CV]
YES	Luo …V•CV(C)]	English …V(C)•CV(C)]

(4) In many languages the final consonant fails to make the syllable heavy:
tormént	cajóle	édit
lamént	maintáin	astónish
collápse	caróuse	cáncel

(5) In many languages the final consonant fails to 'affect' vowel length
   a) *English*
        VC]   lid, run, back, top, step, foot, fill, spliff, rich
        VVC]   slide, spoon, soap, rake, boot, feel, leaf, reach

Domain-final	*Domain-internal*
perceive	perceptive
describe	description
reduce	reduction
five	fifty
wise	wisdom
retain	retentive

  b) *Icelandic*

fɛ́ːla	'hide'	táːla	'speak'
ráuːða	'advise'	jɛ́ːta	'devour'
θɔ́ːla	'tolerate'	íːvɪr	'over'
síːmɪ	'telephone'		

bɛ́:trɪ	'better'	nɛ́:pjɑ	'cold weather'
vǿ:kvɑ	'water flowers'		
pántɑ	'to order'	sɛ́ndɑ	'send'
máʸltɪ	'speak, p.t.'		
tɑ:l	'number'	vɔ:n	'hope'
hai:ð	'height'	θjou:ð	'nation'
rø:k	'cause'	pɪ:l	'moment'
fɛ:t	'step'		
snʏ:pr	'scolding'	flɪ:sj	'peeling'
pʏ:kr	'secretiveness'	sø:tr	'slurping'
kʏmr	'bleating'	ɛmj	'wailing'
bølv	'cursing'		

(6) In many languages CC] clusters obey the same phonotactic restrictions as internal coda-onset or complex-onset clusters.

(6a) *English*

Medial	Final	Medial	Final
Stop-Stop		**Sonorant-Stop**	
chapter	apt	pamper	damp
vector	sect	winter	flint
		wrinkle	rink
		filter	guilt
		scalpel	scalp
Fricative-Stop		**Sonorant-Fricative**	
mister	mist	cancer	manse
after	raft	dolphin	golf
whisper	wisp	whisker	whisk

(6b) *Irish*

Medial		Final	
Sonorant-Stop			
torpa	'clod'	corp	'body'
gorta	'hunger'	gort	'field'
rialta	'regular'	oscailt	'open'
folca	'flood, pl.'	folc	'flood, sg.'
garda	'police'	bord	'table'
rangaigh	'classify'	long	'ship''

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	Fricative-Stop		
donachta	'badness, gen.'	donacht	'badness, nom.'
postaire	'messenger'	post	'post'
taoscach	'gushing'	taosc	'drain'

(7) *The disaster of extrametricality*; a CC] cluster behaves just like an internal coda-onset cluster because it IS a coda-onset cluster. In some languages it can even behave like a complex onset, because it IS a complex onset.

(8) CC] patterning with onsets

(8a) *Polish*

Word-initial		Word-final	
trawa	'grass'	jesiotr	'sturgeon'
droga	'road'	wydr	'otter, gen.pl.'
błądzić	'err'	zasłabł	'he fainted'
długi	'long'	zbladł	'he grew pale'
tłusty	'fat'	zamiótł	'he swept'
flądra	'flounder'	trefl	'clubs'
fraza	'phrase'	szyfr	'code'
kląć	'curse'	cykl	'cycle'
kret	'mole'	akr	'acre'
głowa	'head'	biegł	'he ran'

(8b) *French*

Word-initial		Word-final	
bras	'shoulder'	sabre	'sabre'
trou	'hole'	vitre	'pane'
drap	'drape'	poudre	'dust'
gris	'grey'	maigre	'slim'
vrai	'true'	pauvre	'poor'
clou	'nail'	boucle	'buckle'
flotte	'fleet'	soufle	'breath'
blanc	'white'	lisible	'legible'
plaisir	'pleasure'	people	'people'

(9) In languages like French and Polish we predict the existence of final C•CC] clusters. Here they are:

French		Polish	
arbre	'tree'	chandr	'blues, gen. pl.'
		filtr	'filter'

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