Notes on the Lombardi Voicing Typology
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**GEN_LV**

To study the Lombardi Voicing Typology, we must construct GEN_LV and CON_LV in such a way that they pull out the essentials of her proposal.

0. A candidate consists of a triple: `<in, out, corr>`, where in is an admitted input form, out is an admitted output form, and corr is the correspondence relation between them.

1. We recognize three types of segment: V(owel), C[+voi], C[–voi], the latter being understood to be obstruents.

2. We are interested in strings of one or more Cs surrounded by V.

3. All outputs are exhaustively parsed into syllables, where a syllable takes the shape (C)VC*.

   (The symbol X* means any sequences of 0 or more instances of X.)

4. We assume that C before V is parsed as the onset of a syllable in the output.

5. Outputs for an input. For any input string In, an output has
   a. Exactly the same number of segments, of the same type, in the same order
   b. Any values of [±voi] for the Cs.

6. Correspondence. Items in the same serial position in input and output are in correspondence. No other correspondence relations, or lack of relation, are admitted.

**Remarks.**

I. **Onsets.** Lombardi’s core proposal doesn’t really attempt to deal with the facts, whatever they are, of onset obstruent clusters. Therefore we do not include this issue in our rendering of her core system.

II. **Syllables.** Lombardi’s proposal tacitly assumes the kind of syllabification given in (3) above. We state it explicitly. An interesting, and indeed important, further development would contemplate a system S in which a set of syllable structure constraints are part of CON_S, and GEN_S includes a variety of possible syllabic parses. [Note: we will do something like this when we study syllable structure systems in the next portion of the course.]

III. **Privative, Autosegmental.** Lombardi embeds her proposal in a view of phonological structure in which voicing is privative, being represented as [voi] and its lack, and the representation is autosegmental. I claim that neither of these matters for the system under scrutiny, since (a) we must be able to detect both voiced and voiceless properties [in what constraint(s)?], and (b) we must evaluate segmental values of voicing segment-by-segment rather than by a presumed autosegment [in what constraint(s)? and for what purpose?]. Therefore we substitute for her representation this simple system, which does exactly the same things.
CON_LV
m.*ObVoi Returns the number of voiced obstruents in the output form of a candidate.

m.AGR Returns the number of occurrences of CC in the output form of a candidate, where the first and second C differ in the value of [±voi].

f.voi Returns the number of pairs (C₁, C₂), where C₁ belongs to the input, C₂ to the output, C₁ corresponds to C₂, and C₁ and C₂ differ in the value of [±voi].

f/hd.voi Returns the number of pairs (C₁, C₂), where C₁ belongs to the input, C₂ to the output, C₁ corresponds to C₂, C₂ is in onset position in a syllable, and C₁ and C₂ differ in the value of [±voi].

**Remarks.**

0. Constraints are functions from candidates to 0, 1, 2, … — the nonnegative integers. The candidate argument is implicit in the statements here.

1. The constraint m.AGR is of course poorly and misleadingly named. It does not in itself force adjacent consonants to agree. It merely penalizes them for not agreeing. This leads to (a) confusion, and (b) shock at the discovery that there’s more than one unfaithful way to satisfy the constraint out there in the broader world. In the system LV, we have clamped down on the possibilities so that the only way to satisfy m.AGR is the one implied by its name. But the broader world commands our attention at some point.

2. The positional faithfulness constraint f/hd.voi is so named because in Lombardi proper it is not the onset as a whole that is being alluded to, but only what we might call the ‘head’ of the onset.

3. Clusters. Lombardi recognizes the whole cluster as a defined entity. We stick to localism, defining AGR to examine only adjacent Cs. The cluster remains important, but it emerges from the localistic calculation.

**Obtaining the typology**

- To obtain the typology implied by these assumptions, we need a universal support: a collection of candidate sets sufficient to determine every grammar. Lombardi does not quite succeed in supplying one, and therefore does not uncover the entire typology.

- To obtain a universal support, we need to consider (certain) CCC intervocalic clusters. This is because of the (perhaps not entirely obvious) way that f.voi and f/hd.voi play off against each other. You can figure this out by contemplating what happens in VCCCV, or by considering the whole lot of them and observing what emerges.

- In the workbook supplied, I have short-circuited the process by supplying a universal support. You can calculate from that using OTWorkplace, and draw the appropriate conclusions by studying how choices are made in the VCCCV candidate set.