**Optimality Theory** continues...

**Alternations/Rules**

"Rules" = violations of faithfulness/correspondence constraints: input and output don't match, due to the force of some higher ranked constraints.

Rules no longer apply just because they can; they apply because a constraint says they must.

**Markedness Constraints:**

| | | | |
|---|---|---|---|
| ONS: | syllables have onsets | NUC: | syllables have a nucleus |
| NOCODA: | syllables do not have codas | PEAK: | the nucleus is a vowel |
| *COMPLEX: | no complex constituents | SON: | follow SSP |

**Correspondence Constraints** (McCarthy and Prince 1995): fine tuning faithfulness

| | |
|---|---|
| MAX-IO(V): | vowels in the input appear in the output (No vowel deletion) |
| DEP-IO(V): | vowels in the output appear in the input (No vowel epenthesis) |
| MAX-IO(C): | consonants in the input appear in the output (No consonant deletion) |
| DEP-IO(C): | consonants in the output appear in the input (No cons epenthesis) |

**Language specific variation**: captured by different constraint rankings (markedness vs. faithfulness) for different languages/dialects

**Yawelmani** /logw-en/ = [logwen] /logw-hin/ = [logiwhin]

DEP-IO(V) violation forced by the ranking: *COMPLEX, MAX-IO(C), PEAK >> DEP-IO(V)

**Remember Tibetan?**

| | | | | | |
|---|---|---|---|---|---|
| [ʤu] | ‘10’ | [ʤig] | ‘1’ | [ʤugʤig] | ‘11’ |
| [ʃi] | ‘4’ | [ʤubʃi] | ‘14’ | [ʃibʤu] | ‘40’ |
| [gu] | ‘9’ | [ʤurgu] | ‘19’ | [gubʤu] | ‘90’ |
| [ŋa] | ‘5’ | [ʤuŋa] | ‘15’ | [ŋabʤu] | ‘50’ |

rank *COMPLEX, DEP-IO(V), MAX-IO(C), ONSET, NOCODA?

Try it:

| /bʤu + gʤig/ | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| ☞ [ʤugʤig] | | | | | |

**Syllable generalizations:**

| Jakobson's typology | | Onsets Required | Onsets Optional |
|---|---|---|---|
| Codas | Forbidden | CV | (C)V |
| | Optional | CV(C) | (C)V(C) |

| "Factorial typology" | | ONSET >> $F_i$ | $F_{all}$>> ONSET |
|---|---|---|---|
| Codas | NOCODA >> $F_i$ | CV | (C)V |
| | $F_{all}$>> NOCODA | CV(C) | (C)V(C) |

where $F_i$=some faithfulness constraint, $F_{all}$=all faithfulness constraints

**Archangeli on Optimality Theory**: Remaining Issues

Why did OT become so popular so quickly?

- representational advances had reached their limit
- rule approaches had little success at eliminating unattested/unlikely alternations
- rules were missing generalizations, and...
- constraints were everywhere, but inviolable ones were problematic
- syntax was having similar problems

OT constraints:

- are violable
- are in one place only: one level in the theory, one ranking in hierarchy
- eliminate the need for rules
- always produce some result, regardless of input (though it may be null)
- return our focus to universal properties and markedness cross-linguistically

**Problems/Issues:**

Input
- selection - lexicon optimization
- irregularities
- faithfulness/correspondence and extensions
- is there an input at all, or are there just constraints?

Gen
- infiniteness of candidate set
- how much can gen do? are there constraints on it?

Con
- constraints on the possible constraints?
- language-specific constraints?

Eval
- are all constraints ranked or are there ties?
- are any constraints universally in a fixed ranking (inherent ranking)?

Output
- where does it go? (still needs phonetic implementation)

Modularity of language

- can constraints from different modules (phon, syntax, morph) interact freely?

Extensions: borrowings, poetics, syntax, morphology, etc.