

Mfm Fringe meeting 2015

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We need a theory of computation

It will be recalled that OT is a theory of computation, not a theory of phonology. And that in order to make a theory of phonology you need a theory of computation and a theory of representations, which must not be reducible one to another. OT has no, and has never had the ambition to have or develop genuine representations: it works with the stock inherited from the 80s, in the segmental area typically with SPE-type features alone. That is, given the natural inclination of OT towards computation, on the one hand no effort was put into the development of representations (we are still driving a car from the 80s), and on the other hand representations have been demoted to decoration. This follows from the fact that in an OT grammar (with unmarshalled GEN and Richness of the Base), the only locus of decision about (a)grammaticality is the constraint chamber, i.e. computation. There is no independent and unoutrankable arbitral award coming from representations. The OT mainstream was happy with that and actually advertised the final elimination of representations as a goal (introduction to de Lacy's 2007 Handbook). There is no principled reason, though, to go this way, and a situation where OT computation coexists with a theory of representations, each autonomous and not the slave of the other, is perfectly feasible (and there is a minority movement in OT going into this direction).

On the basis of this I'd like to suggest that one reason of the loss of velocity of OT is this: the misconception that phonology reduces, or may reduce, to computation. Coming from Government Phonology, I am aware that this theory may sometimes have been prone to the opposite temptation, i.e. to believe that a theory of representations will suffice to make a good theory of phonology. GP is kind of the symmetrical enterprise with respect to OT: it does not (really) have a theory of computation, and computation is often only decorative, existing at best in prose statements of the kind "and then X spreads to Y" or "and then the floating suffix-initial vowel associates to the final empty nucleus of the stem".

The computation-is-king direction that OT was misguided enough to engage in betrays Prince & Smolensky's original conception, which was the idea that constraint-based computation relate representations (i.e. allow us to go from one derivational stage to another). I suggest that the decline of OT is also due to the fact that there are a few more promises that OT did not bring home and/or betrayed: universality of the constraint set, anti-derivationalism, absence of evaluation of intermediate forms (surface-orientation), modularity, Freedom of Analysis, free ranking, constraint violability, dominance.

Looking ahead, I believe that there are two dangers: 1. OT will go the way it came: without any confrontation or argument exchange with its historical competitor, extrinsic rule ordering; 2. discussion will not be between theory X and theory Y as it has always been, but between people who believe that there ought to be a theory, and those who either believe that we don't need any, or who don't care because you can go to conferences, publish etc. just by measuring this and that and "see whether this concords with previous measurements or not". What is needed, I submit, is a collective consciousness that we are part of a field, phonology, which like any other scientific endeavour needs a theory (or theories), and more specifically a theory of representations and a theory of computation. In the past the front lines were too much theory-oriented: somebody who works on representations (GPers for example) should be aware that they will also need a theory of computation, and get interested in what is out there with sympathy. And the symmetric attitude should be manifested by people who work on computation. Since Stephen Anderson's book on the history of phonology in the 20th

century, phonologists should have understood that representational (80s) as much as computational (90s, 00s) imperialism is a dead end.