What lies beneath: elements of typological structure in OT
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The formal typology is perhaps the central object of modern linguistics, where formal typology = the set of all grammars admitted by the premises of a theory. In OT, this object is both self-consciously placed in the foreground and amenable to study.

A formal typology classifies grammars in terms of the inner mechanisms of its theory. In OT, a typology classifies grammars in terms of shared and distinguishing ranking patterns (Alber & Prince) that collectively give the entire set of grammars in the typology. What these are, and may be, depends on the structure of the typology (Merchant & Prince).

Typological structure in OT involves both geometry and order. A notion of adjacency between grammars leads to the ‘typohedron’ of a typology, where each grammar is represented by a single vertex. Adjacency comes from the linear orders that grammars consist of. Basic classification involves sets of grammars that are geometrically adjacent in this sense. Order and equivalence relations between the grammars, grounded in the geometry, emerge because of the way rankings are used to evaluate optimality. These are represented by the MOAT (‘mother of all tableaux’), a collection of objects that contain the essential OT properties of each constraint. Basic classification respects the MOAT relations. Both aspects of structure are representable graphically in ways that render them quite accessible (see next page).

The logic of OT ranking leads to two further developments that build from the basic structural elements. (1) Ranking properties may take limited scope, so that in grammars outside the scope of a property, certain distinctions are moot. This follows from the fact that constraints need not be crucially ranked with respect to each other in every grammar. (2) Constraints belong to classes as well, based on the symmetries of their ranking behavior. Constraints may have an atomic character, but their behavior may echo that of symmetrical partners operating in distal regions of the typology.

Taking all this together gives us a fair start on understanding how typologies are organized.

Appendix
See next page.

Refs.
Alber & Prince, Typologies. ms.
Brasoveanu & Prince, Ranking and Necessity. NLLT, ROA-794.
Merchant & Prince, The Mother of All Tableaux. ms.
Prince, One Tableau Suffices, ms.
Riggle. Sampling Rankings. ROA-1075.
The constraint Parse-s as represented in the MOAT of nGX