

Typological Analysis in OT: a basic typology of truncation

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Truncation (e.g. name truncation: *Robert* → *Rob*) has been in the focus of interest of analysts since the first investigations into Prosodic Morphology (McCarthy & Prince 1986, 1993, 1994, 1995, 1999, Alber & Arndt-Lappe 2012). Much data has since been accumulated with respect to truncation patterns in single languages. In joint work with Sabine Arndt-Lappe, we collect descriptions of truncation patterns from the literature and our own fieldwork in a typological database containing to date 156 patterns, spread over 45 languages. Classification of the patterns according to the size of the truncatum shows that 85% of truncation patterns are either mono- or disyllabic. With respect to anchoring, i.e. the trait determining which part of the base is preserved in the truncatum, typical anchoring patterns include anchoring to the left edge of the base name (*Patricia* → *Pat*), to its stressed syllable (*Patricia* → *Trish*), to the right edge (Indonesian: *Dávid* → *Víd*) or to more than one of these three anchoring points (Italian, left-to-stress: *Antonélla* → *Antoné*).

Building on these empirical generalizations, we undertake a Typological Analysis of truncation in the sense of Alber & Prince, in prep. (see also Alber, DelBusso & Prince 2016, McManus 2016, Alber & Prince 2017, Alber 2017, DelBusso 2018, DelBusso & Bennett 2018, Merchant 2018, Merchant & Krämer 2018). We devise the formal typology BTT ('Basic Truncation Typology', Alber 2017, Alber & Arndt-Lappe, in prep.), where an input base name is represented as a string of five syllables, *a b C d e*, with capital C representing the stressed syllable, in antepenultimate position. This hypothetical input is mapped to a set of output candidates formed by all possible contiguous subsets of the 5-syllable-input (*a*, *b C*, *a b C* etc.). The input-output mappings are then evaluated by five constraints, two favoring a templatic mono/disyllabic size of the truncatum (m.1s, m.2s) and three referring to preferred anchoring points (ANCHL, ANCHR, MAXSTRESS). With the help of OT-Workplace (Prince, Merchant & Tesar 2007-2018), we generate the factorial typology of the truncation typology and the grammatical information of the 10 languages populating it. Investigation of the factorial typology and the grammars leads to the extraction of five Typological Properties, in the form of ranking conditions, which - when combined - define the whole of the typological system.

The uncovered Typological Properties show that the process of truncation is governed to a large extent by anchoring constraints. Thus, for instance, the property *Trunc.noT/T* determines whether a language exhibits any truncation at all, or copies the base name in its entirety:

(1) Property *Trunc.noT/T*:

EDGE.sub <> TMPL.dom	EDGE = {ANCHL, ANCHR}, TMPL = {m.1s, m.2s}
	sub = the subordinate EDGE constraint
	dom = the dominant TMPL constraint
value <i>Trunc.noT</i> : ANCHL & ANCHR	> m.1s & m.2s
value <i>Trunc.T</i> : m.1s m.2s	> ANCHL ANCHR

If the grammar of a language contains the ranking expressed by the value *Trunc.noT*, it will not exhibit any truncation. This is the case when both constraints referring to edge anchoring, ANCHL and ANCHR, dominate the constraints favoring mono- and disyllabic templates, m.1s and m.2s. A language where anchoring to both edges is a prominent requirement can not allow for any truncation since in this system copying of both edges implies copying whatever is between them. The logically opposite value, *Trunc.T*, where either m.1s or m.2s dominate at least one of ANCHL and ANCHR, will allow for truncation, since at least one edge anchor can be weighed. Any language allowing for some truncation will therefore satisfy this ranking condition in its grammar. Thus, the

antagonism between reducing truncatums to a templatic size and the drive to anchor to both edges is what decides on the possibility of truncation, in the first place.

In a similar fashion, the other properties of the typology determine whether truncatums are di- or monosyllabic (Tmpl.di/mono), whether they are left-, right- or stress-anchored (Edge.L/R, Prom.stress/edge), or anchored to more than one anchor point (Length.long/short):

(2) Typological Analysis of BTT

Property	Definition	Trait
Anchoring		
Edge.L/R	ANCHL <> ANCHR	edge-orientation: left vs. right anchored
Prom.stress/edge	MAXSTRESS <> EDGE.dom	stress anchored vs. edge anchored
Length		
Tmpl. di/mono	m.2s <> m.1s	template size: di- vs. monosyllabic
Length.long/short	PROM.sub <> TMPL.dom	double vs. single anchoring = long truncation vs. short (templatic) truncation
Trunc.noT/T	EDGE.sub <> TMPL.dom	no truncation vs. some truncation

Constraint classes		
Constraints in class	derived from	Comment
TMPL {m.1s, m.2s}	property Tmpl	TMPL is the class of 'size-restrictor constraints' demanding mono- or bisyllabicity
EDGE {ANCHL, ANCHR}	property Edge	EDGE is the class of left and right anchoring constraints
PROM {MAXSTRESS, EDGE.dom}	property Prom	PROM is the class of constraints referring to anchoring to prominent positions (left, right and stress)

Aside from the fact that a Typological Analysis in these terms elevates us to a higher level of understanding with respect to the grammatical forces determining the phenomenon of truncation, BTT displays also features of interest for Typological Analysis in general. Although the set of evaluated candidates is basic, and there are only five constraints involved, the structure of the Typological Properties determining the system is highly articulate. Thus, the definition of the properties Length and Trunc involves classes of constraints (the constraint classes PROM, TMPL and EDGE). These constraint classes are not formed by an arbitrary set of constraints, but they are in turn derived from properties involving the members of the constraint class as primitive constraints. Of particular interest is the constraint class PROM, which is derived from the property Prom, which, in turn, involves the constraint class EDGE, derived from the property Edge. This shows that constraint classes can be derived in a recursive fashion.

In sum, Property Analysis gives us access to the inner grammatical workings (the intensional side) of a typological system and therefore to the forces determining its surface features (the extensional side). The application of Property Analysis to a system like BTT furthermore reveals interesting insights into the structure of constraint classes.

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