

Dialectal variation and typological properties

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Historical change and its manifestation as dialectal variation in space often either gradually increase or gradually decrease markedness from one historical stage/dialect area to the next. Variation of this type can be modeled as change of ranking of a single constraint on a hierarchy of fixed markedness constraints. However, when fixed constraint rankings are abandoned in favor of set inclusion constraints, grammatical closeness of dialects, and hence the direction of change, cannot be expressed any more in a straightforward way. A measure for closeness is recovered once the typology is analysed in terms of *properties* (Alber&Prince, in prep.).

A simple example illustrating the argument is vowel apocope in Italian, which, in general, does not take place in central and southern varieties (CS), affects postsonorant vowels in the Veneto varieties (Ven.) and postsonorant and postobstruent vowels in the Lombardian (Lomb.) dialects:

(1) Apocope in Italian dialects

	CS	Ven.	Lomb.		Data from AIS, CS = Radda in Chianti (543), Ven. = Venezia (376), Lomb. = Brescia (256)
postobstruent apocope	sordo	sordo	surt	'deaf'	
postsonorant apocope	sole	sol	sul	'sun'	

A successful model of the spreading of vowel apocope has to account for the fact that (a) there are no dialects where apocope affects the postobstruent, but not the postsonorant context and (b) apocope spreads gradually from least marked varieties that do not allow for consonant final words (CS) over more marked varieties in the north-east which allow for words ending in sonorants (Ven.) to the most marked varieties in the north-west allowing both words ending in sonorants and words ending in obstruents (Lomb.).

Assuming the constraints *T# (no obstruent final words), *N# (no sonorant final words) and the apocope trigger *V# (no vowel final words), a fixed markedness hierarchy *T# >> *N# with *V# ranked at different heights of it according to language can account for dialectal variation (assuming that in all grammars *V# dominates the faithfulness constraint MAX, thus making apocope possible, in principle):

(2) Apocope grammars with fixed markedness hierarchy:

CS: *T# >> *N# >> *V#

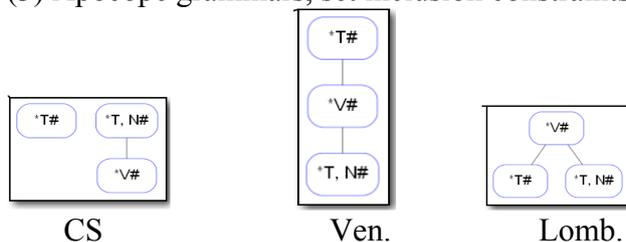
Ven.: *T# >> *V# >> *N#

Lomb.: *V# >> *T# >> *N#

An approach in these terms correctly derives observation (a) and, as for (b), explains gradual spreading of apocope as gradual promotion of the constraint *V#, from CS to Ven. to Lomb., leading to minimal grammatical differences between the grammars of the three dialects.

However, fixed rankings of constraints are not a desirable addition to the theory. An approach in terms of set inclusion constraints which are in a stringency relation to each other (Prince 1999, de Lacy 2002) can retrieve the typological implication (a), but, at first glance, fails on the modeling of dialect variation (b). Thus, we can propose the constraints *{T}# (no obstruent final words), *{T, N}# (no obstruent and sonorant final words) and *V# (no vowel final words) which correctly generate the typology of attested languages (observation a):

(3) Apocope grammars, set inclusion constraints (generated with OT-Workplace)



However, there is no obvious way to predict the change from CS to Ven. to Lomb. in terms of minimal grammatical differences. Change from CS to Ven. implies two changes in the grammar of CS: constraint $*\{T\}\#$, which is inactive in CS, must be ranked above $*V\#$ and $*V\#$ must be ranked above $*\{T, N\}\#$. Change from Ven. to Lomb. implies one change: reranking of $*\{T\}\#$ and $*V\#$.

The predictive power of the model is restored once the typology is analysed in terms of *properties*. The properties of a typological system are defined as the set of ranking conditions which are both sufficient and necessary to generate every language of the typology (Alber&Prince, in prep.). Properties have two values (A and B), one the logical opposite of the other, and free combination of property values generates all languages of the typology. The typological analysis of vowel apocope yields two properties, P1 (total resistance to apocope vs. some apocope) and P2 (total apocope vs. some resistance to apocope):

(4) Properties of apocope typology

- P1: value A: $*\{T, N\}\# \gg *V\#$
 value B: $*V\# \gg *\{T, N\}\#$
 P2: value A: $*V\# \gg *\{T\}\# \& *\{T, N\}\#$
 value B: $*\{T\}\# \vee *\{T, N\}\# \gg *V\#$

	$*\{T, N\}\#$	$*V\#$	$*\{T\}\#$
P1-A	W	L	
P1-B	L	W	
P2-A	L	W	L
P2-B	W	L	W

The grammars of the three languages of the typology can be classified according to properties, obtaining the following assignment of property values to each language:

(5) Property values according to languages

	CS	Ven.	Lomb.
P1	A	B	B
P2	B	B	A

A fourth logically possible combination of the property values - P1-A and P2-A - is excluded because of contradiction: a language cannot combine the rankings P1-A and P2-A, which contradict each other, and hence cannot be both totally resisting to apocope and totally open to apocope.

The property values of each language give us a measure for the path of dialect diversification from CS to Ven. to Lomb. Closeness between grammars is expressed as one switch in property value (shaded cells in table above), thus predicting that CS will change to its closest neighbor Ven. and Ven. to its closest neighbor Lomb.

In conclusion, typological analysis in terms of properties allows us to define grammatical closeness between grammars as one switch of property value. Languages which are closest neighbors in these terms represent subsequent stages in language change and adjacent dialect areas. An analysis of this type accounts for cases of variation where change in time and space follows an implicational markedness scale, without having to assume fixed rankings of markedness constraints.

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