From Latin to Romance: Computational Modeling of Syncretism

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Overview

- What factors in Late Latin led to the heavy reshaping of the nominal system?
- What minimal information does a connectionist model need to predict syncretism in the correct direction?
- Analogies driven by factors such as frequency, markedness, and morpheme length. (Kuryłowicz 1947, Bybee 1985, Althoff 2008)
- Changes in Romance have been attributed not only to sound change, but also to contact.
- We aim to use a connectionist simulation of generative learning providing minimal phonological and semantic information and see what changes are actually observed in Romance can be reproduced.

Structure of the Connectionist Model

- With phonology, frequency & human semantics
- Declensions IV & V fall out in every simulation
- With case hierarchy added, final forms converge more
- Genitive singulars drop out completely
- Genitive plural hardly survives (only example in history is oblique: 3PL pronouns ‘fier, fier, fier’)
- Forms remaining in 20% of simulations
- *nominative* > *FSG* ending in all Romance (> in Sp., It., etc.)
- *nominative* > *MSG* ending for M/F nouns in all of Romance
- Forms remaining in 25-90% of simulations
- */FSP* ending for M/F nouns in all of Romance
- */MPL* ending in western Romance, maybe > */FPL* in eastern
- */NPL* ending in western Romance, maybe > */FPL* in eastern
- */M/NOPL* -N vs. -S in E-Romance, final -s falls out in W-Romance, NOM presents in older Sp. & Fr.
- Accusative is most robust form in history, acts as base form in most of modern Romance. Plurals in some languages may be from non-native (D’Alim 2006)
- With genitive dropped, two notable outcomes for neuter
  - NSG > *MSG* | N.PL > *FSG* (most of Romance)
  - MSG > N.SG | N.PL > F.PL (Romanian system)
- Taking into account these minimal factors, simulation offers a rather accurate history of syncretism and trends that occurred on way to modern Romance languages

References


Acknowledgements

Many thanks to Kevin Ryan, James Kirby, Andrew Garrett, Terry Regier, Mari McLaughlin, and Yang Xu for comments and guidance; to Ezra Van Veenbroek for providing the code for the simulation in Polinsky and Van Veenbroek (2003), and to Edwin Ko for consultation on data visualization.

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Latin Declension System

Declensions

- Declensions III and V merge to III and I only
- In most of Romance, retaining segments to the left
- Declensions III and V merge in Romance
- Declensions 6 in Romance
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Case

- Nominative
- Accusative
- Genitive
- Dative
- Instrumental
- Adverbial
- Vocative
- Genitive
- Dative
- Instrumental
- Adverbial
- Vocative

Gender

- Masculine
- Feminine
- Neuter

Number

- Singular
- Plural

Figure 1: The Latin Declension Classes

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