

Phonetically-driven dissimilation

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Although numerous formal analyses have been proposed to account for dissimilation (serial autosegmental model; Padgett 1995; and parallel Optimality Theory model; Alderete 1997), finding the motivating factors continues to be a challenge. We discuss two recent functional approaches to dissimilation that make reference to perception. Ohala (1981) and Blevins (2004) claim that dissimilatory processes stem from a misanalysis of speech signal. A feature that covers a sequence of segments may be interpreted as having a source in one segment. $[C^FVC^F] \rightarrow /C^FVC/$. The listener assumes the coarticulatory nature of the feature on the second consonant, which leads her to alter the input form. As a result, the feature F is internalized on only one of the consonants and a language change occurs.

Another functional model of dissimilation makes use of language processing in general and the difficulty in serial encoding in particular. In visual perception, stimulus detection has been shown to be impaired when the same stimulus is repeated in a brief period of time (repetition blindness). Errors of a similar nature have also been reported in repetition of auditory stimuli (Miller & MacKay 1994). Similar sounds are predicted to be difficult to encode in a serial sequence in perception and production (Frisch 2004). Connectionist models that use activation and competition in a neural network of linguistic units accurately predict dissimilation patterns (Dell 1986).

This paper attempts to determine whether the functional approaches can effectively explain two types of dissimilation that occur in a dialect of Polish. One of the main findings is that similarity factors may play a role in blocking an otherwise regular phonological process. Second, not all types of dissimilation can be handled by means of the reinterpretation of coarticulation or difficulty in serial speech planning. Manner dissimilation presents a case which should preferably be analyzed as an increase in phonetic salience (Wright 2004), enforced by Obligatory Contour Principle (OCP).

The data are drawn from North Mazovian dialects of Polish. We look at a process regularly applying to palatalized labials that results in an emergent palatal fricative. However, the process is blocked in the context of another palatal segment. This underapplication is viewed as an instance of dissimilation and is given a functional analysis based on false coarticulation.

The second case of dissimilation involves manner dissimilation. North Mazovian dialects of Polish demonstrate a dispreference for two adjacent heterorganic stops and two adjacent heterorganic fricatives. In both cases the manner of articulation of the first consonant is altered to enhance salience. The acoustic cues of stops are centered around the release, which means that they are best perceived in prevocalic context. In the case of two adjacent stops, on the other hand, the first stop is weakly cued and to avoid misperception the dialect at hand changes it into a fricative. A fricative in this position increases salience, as it has internal cues that do not depend on vowel transitions. The reverse change, i.e. fricative to stop, occurs in a sequence of two fricatives. Here the motivation is similar, the fricative noise does not have a clear acoustic boundary, thus occlusivization of the first fricative in a sequence marks an improvement on the modulation of acoustic signal (Ohala 1992).

It is argued that neither misanalysis of speech signal nor the account involving difficulty in serial encoding handles the manner dissimilation data. In fact, the functional approach predicts this process to be uncommon cross-linguistically, as only features having longer temporal intervals can be subject to false coarticulation (Alderete & Frisch 2004). In a formal account of manner dissimilation I resort to OCP and use it to promote cue robustness.

Additional data from two unrelated languages, Modern Greek and Cypriot Arabic, evidence that the process is far from marginal and affords a uniform analysis.

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