Acquisition of dorsal in simple and complex onsets

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We present data from children acquiring German, Dutch and English. These children have acquired dorsals in complex onsets before they acquired dorsals in simple onsets. We will analyze these data in the framework of Optimality Theory and argue that constraints, rather than being innate, emerge as a result of generalization over lexical items.

Data from a child acquiring German who produces dorsals in complex onsets but not in simple onsets are given in (1) (Ott, 2004). In our presentation, we will present similar data from Dutch and English. We will analyze these data using the theory of acquisition of Place of Articulation (PoA) features proposed by Levelt (1994) and observations concerning the acquisition of PoA features in onset clusters by Fikkert (1994). In this theory, there is at first only one PoA feature per word. After this stage, words are segmentalized and there are restrictions on which features can appear where: Coronals and labials are allowed word initially, but not dorsals. With respect to the acquisition of clusters, Fikkert (1994) observes that many children produce clusters with only one PoA feature. After this stage, the child segmentalizes the onset (Fikkert, 1994). These stages are expressed in our analysis by the constraints OCP[PoA] ('Consonants in an onset cluster should not share PoA features') and *Struc ons-PoA ('Avoid PoA features in the onset'). The ranking *Struc ons-PoA >> OCP[PoA] yields a grammar in which the consonants in an onset share a PoA (2) (Bills & Golston, 2002) and the reverse ranking a grammar in which the cluster is realized target-like (3) (Ott, 2004). Since the constraint against initial dorsals is above the relevant faithfulness constraint, the examples show that it is possible to have dorsals in complex onsets, but not in simple onsets.

Since these are two markedness constraints, they cannot be innate, but must have emerged over the course of acquisition. At first, both of these constraints are unranked in a high stratum. Both constraints tie for optimality; a candidate *tla* will promote a *Struc ons-PoA >> OCP[PoA] ranking, while a candidate *kla* favors the reverse rankingOCP[PoA]. Under these circumstances, there can be no convergence (Boersma, 1998; Tesar & Smolensky, 2000). Our solution is that some constraints are learned on the basis of the child's lexicon. At the beginning of the acquisition of complex onsets, the child generalizes that they share a PoA feature. The constraints *Struc ons-PoA emerges. Then the child realizes that the onset consonants must have different PoA features and the constraint OCP[PoA] emerges.

(1) *Dorsals in complex onsets, but not in simple onsets Ott (2004)*

Word	*target*	*child's output*	*gloss*
Koch	kɔx	tɔx	'cook'
Clown	klaʊn	klaʊn	'clown'

(2) *Sine's realization of 'glass' (Bills & Golston, 2002)*

glass	Faith Root	*Struc ons–PoA	*Onset[PoA–dorsal	*ComplexOnset	OCP[PoA]	Faith Dorsal
☞ gɬæs			*	*	*	
dɬæs		*!		*		*
gæs	*!		*			
dæs	*!					*

(3) *Tim's realization of 'clown' (Ott, 2004)*

clown	OCP[PoA]	Faith Root	*Onset[PoA–dorsal	*Struc ons–PoA	Faith Dorsal	*ComplexOnset
☞ clown			*	*		*
tlown	*!				*	*
cown		*!	*		*	
town		*!			*	

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