

Aligning the timelines of phonological acquisition and change

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The original Neogrammarian distinction between regular sound change and borrowing was based on analyses of patterns of variation in the relationships between forms used by diverged speech communities in the aftermath of language change. However, the Neogrammarian understanding of regular sound change as a distinct process from borrowing, and not simply as “a heuristic technique ... for comparative research” (Hockett 1965: 188), implies also a fundamental difference in the patterns of variation within a speech community during the change. Borrowing replaces one set of forms by another, and there can be an arbitrary relationship between sounds in the replacing forms and sounds in the replaced forms. By contrast, the variation in word forms that is observed in the time course of regular sound change is a ubiquitous type of “structured heterogeneity” (Weinreich, Labov, & Herzog 1968: 101). Specifically, it is heterogeneity structured by age.

Another difference that often has been assumed involves the timelines for the two types of change. Regular sound change – i.e., “change from below” – is typically described as a continuous gradual change that is “generated by the process of INCREMENTATION, in which successive cohorts and generations of children advance the change beyond the level of their caretakers and role models, and in the same direction over many generations” (Labov 2007: 346; see also Hockett 1950, 1965). Changes continue in the same direction over successive generations when they involve “variables which have been evaluated in the same way by the speech community over a considerable period of time” (Weinreich, Labov, & Herzog 1968: 146). By contrast, phonological change through borrowing – i.e., “change from above” that involves “importation of elements from other systems” (Labov 2007: 346) – is typically ascribed to specific historical events that bring adult speakers of two divergent systems into contact. So it will not be child speakers who are at the leading edge of this kind of change and the social evaluation of phonetic variation in the aftermath of the contact “event” can be discontinuous with the social evaluation of the “same” variable prior to the change in the system.

In this chapter, I will explore this issue of potentially different timelines by describing data from the paidologos corpus (Edwards & Beckman 2008, Beckman & Edwards 2010) on productions by the youngest speakers in several sound changes in progress, as well as some data measuring community perceptions of those productions. All of the changes began in the last thirty to fifty years. Some of them are changes from below. For example, in the Seoul dialect of Korean, the “lax” plosives in phrase-initial position have shifted from being a “mildly aspirated” series for young adults recorded in the 1970s (e.g. Han & Weitzman 1970) to having long lag voice onset time (VOT) values that are indistinguishable from those measured for the “aspirated” series (Silva 2006, Kang & Guion 2008). Women lead this change. Their productions are now differentiated primarily by the intonational cue of rising versus high phrase-initial tone, and when naïve Korean-speaking listeners are presented with woman’s productions for identification out of context, they attend primarily to fundamental frequency. In our sample of 67 children aged 2 through 5 years and 20 young adults, the children’s productions are more similar to adult male productions, and naïve Korean-speaking listeners attend more to VOT when listening to them, just as they do when listening to men (Kong, Edwards, & Beckman, 2011).

Some other changes that we can examine in the paidologos corpus are changes from above. For example, in the *Dongbei* dialects of Mandarin Chinese of the 1950s, the voiceless sibilants showed only a two-way contrast between [ç] and a more anterior sound, and the variable [s] versus [ʃ] was related to nearness to Korea versus Mongolia. With the subsequent imposition of the Putonghua standard, the [s] versus [ʃ] difference is now lexical. That is, Li (2005) shows that in the Songyuan variety, there has been a clear shift from the older system of no contrast between [s] versus [ʃ], for speakers in their 80s, to the standard 3-way lexical contrast among dental, apical postalveolar, and palatoalveolar sibilants, for speakers in their 20s and 30s. Moreover, some young women have the Beijinghua “feminine accent” variant for the palatoalveolar, pronouncing it more like [sʲ]. Li

(2008) further documents that children in Songyuan master the 3-way phonemic contrast at the same age that Beijinghua-speaking children do (e.g., Zhu 2001), and productions of the alveolopalatal by the 4- and 5-year-old girls are differentiated from productions by boys in the acoustic dimensions that Li (2005) used to index the feminine accent variant. Thus, at first glance, it seems as if young girls are leading the “imported” change in the Songyuan sibilant system, whereas the child speakers described in Kong et al. (2010) are relatively conservative in the change affecting the Seoul plosive system.

However, some other differences also need to be considered before contrasting the timelines of the two changes in progress in this way. First, the two types of consonant contrast are at opposite extremes along the scale of motor difficulty. Plosive constrictions are produced by simple ballistic gestures and they are among the first consonants to be produced by infants in canonical babbling at 6-8 months. Control of fundamental frequency is younger (at 3 or 4 months) and even the most challenging property of the Korean contrast – the control of temporal coordination between oral and laryngeal gestures to produce different VOT lag values – is not as motorically challenging as the control of lingual postures to produce voiceless sibilants with contrasting spectral shapes. Where even the 2-year-olds in the Seoul Korean sample are transcribed as having about 80% accuracy rates for the phonation type contrast between lax and aspirated stops, the children in the Songyuan Mandarin sample are transcribed as having less than 30% accuracy for [s] at 3 years, and it is only in the 4- and 5-year-old groups that accuracy is better than chance. The differentiation between [ç] and [sʰ] in the boys’ and girls’ productions can only be observed in the older children, who control the lexical differentiation among [ç], [sʰ], and [s]. As Li et al. (2008) put it, “The emergence of gender-marking variation might be constrained by the same maturational factors that govern the mastery of the lexical phonological contrast.”

This difference in age at which the children master the relevant lexical contrast interacts with a second apparent difference for which we have only qualitative observations to date. The children in the Songyuan sample were all recorded at school. In Songyuan, it seems that women work until their mid-60s and their children are placed in government-funded nursery schools by age two. By contrast, children in Seoul tend to be placed in (private) nursery schools at a later age, and to spend less time each day at school. Although many mothers work, grandmothers often tend the children when they are not in school. We have recordings of primary caretakers interacting with very young children in both communities, and are currently in the process of analyzing those recordings, to quantify production patterns in child-directed speech. However, we unfortunately have no recorded productions by the children’s teachers in either speech community. So we will not be able to compare the production patterns in the two potentially different adult models for the children at school and at home. An interim conclusion from this comparison of the youngest speakers in different changes in progress, then, is that considerably more detailed ethnographic research on childhood is needed before any generalizations can be made about differing timelines for regular sound change versus borrowing.

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