From raw speech to a phonological system: how do children do this?

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Until the seventies acquisition of phonology has been studied based on child language production data. It is commonplace in the literature that most 'errors' in children's production are systematic. For instance, Dutch children often produce target initial fricatives as stops, but the reverse seldom occurs; they may produce target coronals as labials (under certain conditions), but labials are seldom produced incorrectly; voiced stops may become unvoiced in children's productions, but they seldom produced voiced stops for target voiceless ones. There are two extreme accounts for these phenomena. In one view, children's stored lexical phonological representations are adult-like, but their phonological grammar (be it a set of rules, constraints, or processes) changes adult-like target forms into the typical child production forms. The other extreme view assumes that children's stored lexical representations are incomplete, unspecified or holistic, and the produced forms reflect the stored representations.

Since the seventies acquisition of phonology is also approached from infant and child language perception studies. Here the common view is that children perceive essentially all phonetic detail from early on, and start tuning into the language-specific sound system from six month onwards, by paying more attention to contrasts that appear in the native language, and less to those that are foreign. This line of research assumes that before they start to speak their first words, children have figured out the sound system of their language. Hence, they have regarded production data as largely irrelevant for the acquisition of the sound system.

In this talk I will argue that a comprehensive theory of phonological acquisition should take both perception and production into account, as well as development. I will present a large set of production and perception data addressing the nature of place of articulation features, manner of articulation features and laryngeal features. For each set of features asymmetries in children's perception and production are attested. However, the asymmetries do not allow for one straightforward explanation, and are motivated differently for each set. I will discuss the consequences for a model of phonological acquisition. Most data will come from Dutch, but data from other languages, including German, English and Japanese, will be presented as well, addressing the issue to what extent asymmetries are universal or language-specific.