

Templates and Dynamic Systems Theory in Early Phonological Development

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Abstract

Early phonological acquisition data are notoriously noisy. This study examines data collected at the onset of word production in four children acquiring American English. Evidence suggests that representation from this period consists in emergent whole-word patterns (i.e., templates), and schema theory supports a whole-word approach by instilling templates with definable structure. In this conception, representational units are organized hierarchically, based on degrees of abstraction. Connecting schematic representation to the chronology of utterance production reveals a close-up view of the construction of a phonological system, and placing this enriched templatic approach within dynamic systems theory captures the temporal dynamics of units in a developing system. Specifically, templates emerge as attractors, resulting in groups of phonetic forms that share a basic shape. The property of soft assembly renders the subunits of a system subject to continuous change, and changing boundary conditions cause behavioral configurations to loosen and reassemble. These processes can be seen in the formation of new and merged schema-based templatic patterns. Viewing these phenomena through detailed chronological data provides snapshots of a system developing in continuous time. Furthermore, the principle of self-organization, characteristic of a dynamic system, can describe a child's idiosyncratic trajectory while constraining the course toward adult-like language.