“One Thing Follows Another” :
Initial State, Task, and Developmental Change in Human Infants

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Abstract

Viewed from afar, there appears to be an inevitable progression to human development: infants sit before they stand, crawl before they walk, babble before they talk. Development appears program-driven. At a more micro level, however, development is much more variable, exploratory, messy and contingent. Initial conditions set biases in the system, and these biases, in combination with a culturally-specific environment, begin a self-organized developmental cascade. I illustrate these principles to show how infant development is deeply embodied. I show how the anatomical and neural organization of arms and legs facilitate their eventual adaptive use for reaching and grasping or for support and locomotion. However, I also demonstrate how this functional specialization is not fixed, but epigenetically selected in interaction with the physical and social environment. When infants are presented with appropriate and novel tasks, they reveal a surprising plasticity, and even precocity. “Knowledge” is acquired only as structure and task environment promote meaningful interaction.