

A Dynamic Systems Approach to the Development of Cognition and Action

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and

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A Dynamic Systems Approach to the Development of Cognition and Action presents a comprehensive and detailed theory of early human development based on the principles of dynamic systems theory. Beginning with their own research in motor, perceptual, and cognitive development, Thelen and Smith raise fundamental questions about prevailing assumptions in the field. They propose a new theory of the development of cognition and action, unifying recent advances in dynamic systems theory with current research in neuroscience and neural development. In particular, they show how by processes of exploration and selection, multimodal experiences form the bases for self-organizing perception-action categories. Thelen and Smith offer a radical alternative to current cognitive theory, both in their emphasis on dynamic representation and in their focus on processes of change. Among the first attempt to apply complexity theory to psychology, they suggest reinterpretations of several classic issues in early cognitive development.

The book is divided into three sections. The first discusses the nature of developmental processes in general terms, the second covers dynamic principles in process and mechanism, and the third looks at how a dynamic theory can be applied to enduring puzzles of development.