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## Chaos in Psychophysics?

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### Abstract

Originally published in Contemporary Psychology: APA Review of Books, 1990, Vol 35(4), 338-340. Reviews the book, Nonlinear Psychophysical Dynamics by Robert A. M. Gregson (see record 1988-98761-000). This book proposes a "simple" model for psychophysical dynamics, motivated by 19 "properties" of psychophysical data that should be accounted for merely by changing values of model parameters or environment/model couplings. I doubt deeply that anyone will read this book. Actually, it cannot be read; it must be studied, and that really only after studying the earlier book as well as system theory and the mathematical theory of chaos. How many psychophysicists will do this? I do not think very many will, given the history of the discipline. This is too bad, for there are many provocative ideas in this book. However, I believe that a different kind of book is needed to bring chaos into psychophysics and into psychology, one that is more approachable by the average psychophysicist. (PsycINFO Database Record (c) 2006 APA, all rights reserved)

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suggested that the mechanisms underlying our percepts might be modeled as nonlinear, deterministic systems that exhibit chaotic behavior. We present evidence supporting this view, obtaining an estimate of 3.5 for the dimensionality of such a system. A surprising result is that this estimate applies for a rather diverse range of perceptual tasks. The current state of the chaos construct and supporting empirical research in psychological theory is summarized in neuroscience, psychophysics, psychomotor skill and other learning phenomena, clinical and abnormal psychology, and group dynamics and organizational behavior. Trends indicate that human systems do not remain chaotic indefinitely; they eventually self-organize, and the concept of the complex adaptive system has become prominent.