Nonlinear Dynamics, Psychology, and Life Sciences, Vol. 3, No. 1, 1999

Book Review

Chaos and Complexity: Implications for Psychological Theory and Practice. By Michael Bütz. Taylor & Francis, 1997; 271 pages, index, $54.95 USD hardback, $24.95 USD softcover.

> The journey of life [is one] in which periods of stability give way to perturbations, bifurcations, complexity, and even chaos, which eventually displays a new form of stability self-organizing out of nonlinearity. Considered against the backdrop of a world that has been dominated by linear, mechanistic, logical positivistic assumptions, this holistic epistemology almost strikes one as an alien life form. The set of assumptions and ideas housed within chaos and complexity challenge the very bedrock of science itself. In fact, it challenges not only science but also the culture that supports it. (Bütz, p. 71)

The application of the sciences of complexity, and chaos theory in particular, to the psychology of consciousness, the mind, and individual development, has led to a variety of books, each bringing certain features of formal theory to bear on particular aspects of human nature. Ben Goertzel (1993a, 1993b, 1994, 1997), for example, has developed an entire computational theory of mind which it is conceives it as a hypercomplex chaotic attractor. My own work follows in a similar vein, though with greater emphasis on consciousness itself, its historical evolution, and its present and future potentials (e.g., Combs, 1996). Other writers have been more concerned with personality, its development in each individual, and its aberrations in psychopathology. Ernest Rossi, (1996), for instance, recently brought years of research and scholarship into a somewhat uneven but highly creative focus on the personality, biological and psychological rhythms, and psychopathology, using concepts such as fixed and chaotic attractors, bifurcations, stability and instability, and growth through reorganization. John Arden's (1996, in press) work is more purely theoretical in nature, reaching toward a holistic understanding of the mind and consciousness. His work lays the groundwork for a new psychology with wider interdisciplinary foundations and greater validity than traditional academic psychology has so far achieved. His approach is broadly systems oriented, incorporating chaos theory mainly as a branch of dynamical processes in general. Each of the above writers brings his own unique talents and his

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own gifts to the pleasure of the reader. For Goertzel this is an unusual clarity of thought, illuminated by a writing style that unfolds difficult technical reasoning with disarming simplicity. For Rossi, it is the wealth of clinical and therapeutic experience which enriches each page. For Arden, it is the multi-disciplinarity of each page of his discussions.

Michael Bütz's volume is a welcome addition to this growing literature. It extends the application of complex systems thinking into new areas of psychology, while rewarding the reader with a multifaceted treatment of some of the most pressing issues in the contemporary discussion of what it is to be human. Bütz begins with a brief introduction to complexity and chaos theory that can be skipped by most readers of these pages. From this he moves to a review and discussion of the role of chaos in the brain, then in an appropriately nonlinear fashion, proceeds through a fascinating discussions of individual development and personality theory—highlighting Freud, Jung, and Erikson—on to detailed discussions of identity and the self, pathology and psychotherapy, and finally to social structures and the social context of the individual.

Bütz's examination of chaos, self-organization, and the brain, begins with a fascinating and well-informed review of theory and research on chaos and self-organizational processes in the nervous system, much of which is directed toward the philosophically deep question of the relationship of the sensing and knowing brain to the outside world. In other words, does the brain *represent* the world symbolically within itself, as required by classical cognitive science, or does it *make* the world through its rich and constant exchanges with it, as suggested by Francisco Varela. Bütz leans in the latter direction, as is generally consistent with Walter Freeman's model of the chaotic brain in a continuous process of restructuring its inner chaotic dynamics with each new experience. Bütz, however, does not go the full distance to a radically constructionist view. Near the end of this discussion he also introduces an idea that will be important throughout the book. This is the notion of *symbols* as points of self-organization, around which neurological and thus mental processes form and grow into complex patterns.

Moving on to the topic of psychological development, Bütz's general view is summarized in his own words in the quotation at the beginning of this review. Here we find the notion of a nonlinear developmental progression in which relatively smooth periods of growth are punctuated by episodes of significant disorder, leading to rapid re-organizations (bifurcations). Drawn in broad strokes, this view is visible on many fronts in developmental psychology. It is, of course, known as *stage theory*, but in its traditional form does not usually stress the pre-bifurcation disorder as much as does chaos theory. Nevertheless, it is perhaps surprising that this common theoretical format which involves a sequence stable periods punctu-

ated by intervals of turbulence and subsequent transitions to more complex and developmentally sophisticated levels—as seen in the developmental models of Erik Erikson, Lawrence Kohlberg, to some extent in Jean Piaget, and even in transpersonal models such as those of Ken Wilber and Allan Combs—has not gained more attention. The fact that it has not bears witness to the importance of broad theoretical models, or metaphors, for making the obvious visible.

Throughout this book the reader is rewarded by the richness of the background material that Bütz brings to his topics. The discussion of psychological development is no exception. Here he focuses much of his attention on the inner psychological dynamics of maturation, with particular attention given to the traditional psychodynamic theories of Freud, Jung, and Erikson. This interest in classical theory will return again and again throughout the book. Here, he approaches these classic theories in terms of the underpinnings in energy physics that serve as their metaphor. Few of today's psychologists remember the importance of thermodynamics to the late 19th century scientific understanding of the world, an understanding that Freud attempted at every turn to build into his thinking. Jung, on the other hand, while respecting Freud's work, was eventually drawn toward the new atomic physics, in which he found many powerful metaphors for the human psyche. Using concepts from modern systems theory, Bütz is able to show that these classic personality theorists were striving toward conceptualizations which we now can understand in terms of bifurcations and the self-organizational dynamics of complex systems.

Bütz moves on to discussions of psychological health and pathology, and then to a detailed discussion of the individual personality, both informed by the previous examinations of human development. The discussion of health and pathology is for the most part framed in terms of linear and nonlinear processes. Much of the material here will not be unfamiliar to the present readers, who are no doubt knowledgeable of the early observations which suggest that too much regularity, for example in the cardiac rhythm, is a sign that something has gone wrong. It is not easy to apply these ideas directly to the arena of psychological health, but Bütz manages an interesting discussion here, finishing with the not very surprising conclusion that health is usually somewhere between the two extremes of linearity and nonlinearity. He continues, however, right into a much more rewarding examination of the role of chaos, cycles, and rhythms in the daily life of the individual personality. Here, there is a surprisingly satisfying body of literature to draw upon, all of which suggests that normal fluctuations of moods are essentially chaotic in nature, though constrained within limits. Bütz's discussion of normal moods and emotions, as well as

problematic states of depression, is well organized and informed with observations from both the clinic and the laboratory.

The above completes the first half of the book. The second half explores the development of the self, especially in the context of individual therapy, then it moves on to group behavior. The latter ranges from family dynamics and small groups, and on to business organizations and even to entire societies. Staying to the psychodynamic bent of the text, Bütz examines the growth of the psychological self in the theories of Freud and Jung, emphasizing insights that derive from thinking in terms of nonlinear self-organizing systems. He again emphasizes the importance of the familiar rhythm by which a system—the self in this case—moves through intervals of instability punctuated by quiescent periods in which nothing of interest seems to occur. In fact, however, it is during these seemingly uneventful periods that unconscious creative processes work like "seeds beneath the ground" leading to more complex intra-psychic systems. Much of this occurs in conjunction with the evolution of meaning structures in the psyche, or *symbols*, which in Bütz view serve as collection points, attractors as it were, for self-organization. He emphasis the importance of the self-reflective aspect of symbols—which occur both inside the psyche and in the objective external world—in human experience by introducing the term *symöbia*, which takes its meaning from the Greek *symbolon*, and the concept of the Möbius strip. This idea emphasizes the richly interactive and symbolic relationship of the human being and its experiential environment. This relationship is integral to individual growth, which involves a continuous symbolic redefinition of oneself in a spiraling process of self-transcendence.

In the latter chapters of the book, Bütz looks at social structures, beginning with the family. His principal approach in these chapters shifts away from psychodynamic ideas toward an emphasis on systems theory and its application to families or larger groups. Here he seems to be acting more as an explorer than a map-maker. Nevertheless, he makes a number of points that are well worth pondering, in the meantime sharing the unique perspective of one who has had considerable first-hand experience with family and small group therapy (see, e.g., Butz, Chamberlain, & McCown, 1996). One of the central ideas that runs throughout these pages is the importance for any group of finding a coherent configuration. For instance, Bütz points out that most families today combine a complex pattern of work and domestic activities, often with parents already in a second or third marriage, and children for whom one parent lives elsewhere. The resulting interactions and activity exchanges, when viewed from a systems perspective, are much more complex, and often much nearer the "edge of chaos" than those of the traditional family of the 1950s or even 1960s. Moreover, the search for a long-term coherent attractor can take such a family through

a succession of structures as it searches for an optimal configuration for all concerned.

What makes matters even more challenging in today's changing world is the necessity for any vigorous social structure, be it family or business, or a whole community, to remain open-ended and interactive with the environment, modifying its own form in new, creative, and adaptive ways. This often means the efficient and creative management of information pathways. Here Bütz's discussion is reminiscent Gregory Bateson's classic cybernetic-informed analyses of cultures, families, and the "double bind" experience which he proposed as fundamental to at least some types of schizophrenia. In the final pages Bütz returns to a more personal and philosophical attitude, where he observes that "stripping away all the jargon and difficult theory described thus far in this book, it appears many of these issues really boil down to that old notion of the unexamined self" (p. 228).

Despite the overall richness of this book, it is clearly not for those seeking cutting-edge examinations of technical aspects of chaos theory in psychology. This is doubly true given the book's permeating interest in classical psychodynamic issues. This orientation, however, only adds to its appeal as a broad exploration of the human condition, illuminated by the modern sciences of complexity, and chaos theory in particular. It offers rewarding fare for the sophisticated reader, a dense but lush introduction to the field of chaos theory and psychology for an intelligent lay reader, and an excellent general resource for undergraduate and graduate students alike. It could serve as the core text for a most lively undergraduate, or more likely graduate course, on psychology and the sciences of complexity. It is also unique in its in-depth exploration of psychodynamic issues, particularly about the self. I recommended it for college libraries, large public libraries, and the bookshelves of those interested in one of the most creative interdisciplinary fields in modern psychology.

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