The Unshackled Organization

Facing the Challenge of Unpredictability through Spontaneous Reorganization

By Jeffrey Goldstein

Publisher's Message by Norman Bodek

Productivity Press
Portland, Oregon
An invitation to colleagues and friends from Stewart Mennin.

The Unshackled Organization, an invaluable book on leadership, is out of print. The author, Jeffrey Goldstein, a friend and colleague, has generously given permission for me to share a pdf version with you. He has written many other excellent books and articles that I recommend highly (search Amazon.com or other places to find more recent work on leadership, organizations and complexity). The Unshackled Organization is easy to read and is filled with deep insight and practical approaches that go well with appreciative inquiry and positive deviance. It is a pleasure to read, reflect and learn. Thanks to Luís Tófoli for technical assistance preparing the pdf.

Abraços, Stewart

Copyright © 1994 by Productivity Press, Inc.

All rights reserved. No part of this book may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without permission in writing from the publisher. Additional copies of this book are available from the publisher. Address all inquiries to:

Productivity Press
P.O. Box 13390
Portland OR 97213-0390
United States of America
Telephone: 503-235-0600
Telefax: 503-235-0909


Cover and book design by Bill Stanton
Interior layout and typesetting by Frank Loose Design
Printed and bound by Maple-Vail Book Manufacturing Group
in the United States of America

Library of Congress Cataloging-in-Publication Data:
Goldstein, Jeffrey, 1949-
The unshackled organization : facing the challenge of unpredictability through spontaneous reorganization / by Jeffrey Goldstein.
p. cm.
Includes bibliographical references and index.
ISBN 1-56327-048-X
1. Organizational change. 2. Corporate culture. 3. Corporate reorganizations.
I. Title.
HD58.8.G627 1994
302.3'S—dc20
94-983
CIP

98 97 96 95 94 10 9 8 7 6 5 4 3 2
When we lose our balance, we die, 
but at the same time we also develop ourselves, we grow...
—SHUNRYU SUZUKI ROSHI

The only thing we can say with much certainty anymore is that nothing much is certain. Change, flux, even turbulence have become the name of the game. Businesses and institutions, of course, have always needed to change in order to adapt to the shifting circumstances of changing markets, technological innovations, unforeseen competition, governmental regulations, war, famine, epidemics, and so on. But in our age the pace of change has accelerated to a fever pitch. Indeed, what company or institution is not right now involved in a life and death struggle to survive in a constantly shifting, tumultuous environment?

This struggle to the death is not confined to our organizations. I remember being stunned when in my high school physics class I first heard about the “heat death” of the universe, the depressing idea that the universe would eventually deteriorate into a formless and random incoherence. This was the accepted interpretation of the famous law of entropy or the inevitable tendency of any system toward dissolution and disorder. All systems, including the universe as a whole, would show a continual break-up of order, complexity, pattern, and organization. This final disorder was characterized as a condition of equilibrium or a state of lowest energy, order, and coherent pattern. Ultimately entropy and equilibrium would assert their dominance.

One of the astounding findings of current research in theoretical physics, however, has been that systems can show an opposite tendency: They have the potential of evolving into states of greater organization,
complexity, and order. That is what self-organization is all about—the evolution of nonlinear systems into more complex patterns when they are in far-from-equilibrium conditions. That is why self-organization as a model for organizational change is relevant as our businesses and institutions face so much unprecedented tumult.

The implications of self-organization for the supposed “heat death” fate of the universe are currently being debated by scientists and philosophers. On a more practical level, however, the good news is we do not need to characterize systems, including our businesses and institutions, as being dominated by a tendency toward equilibrium or resistance to change. Instead, the phenomenon of self-organization affirms that our organizations can be attracted to states of more coherence, more complex order, and more effective functioning. Organizational transformation, then, is about setting up the appropriate conditions whereby this attraction to more effective functioning can take place.

The following list summarizes the essential features of how self-organization can be applied to organizational transformation:

- Businesses and institutions are nonlinear systems
- Nonlinear systems have several crucial properties including their innate capacity for self-organization
- Self-organization represents a system's affinity for evolving into modes of functioning exhibiting more complex and coherent patterns
- Self-organization takes place when a nonlinear system is placed under far-from-equilibrium conditions
- Resistance to change is only a temporary phenomenon, equivalent to the organization's or work unit's attraction to a state of equilibrium
- The state of equilibrium is maintained by self-fulfilling prophecies operating in an organization or work unit
- Far-from-equilibrium conditions interrupt the state of equilibrium by releasing the nonlinearity inherent in self-fulfilling prophecies
- A key to far-from-equilibrium conditions is that they increase the information available to a system concerning its own functioning
• For far-from-equilibrium conditions to lead to self-organizing transformation there must be firm but permeable boundaries in the work group or organization

• The following methods can generate far-from-equilibrium conditions prompting self-organization:
  ♦ difference questioning
  ♦ cultural difference questioning
  ♦ purpose contrasting
  ♦ challenging assumptions creatively
  ♦ experimenting with departures from equilibrium
  ♦ nonverbally representing the organization
  ♦ recognizing and amplifying serendipity
  ♦ using absurdity to take advantage of organizational noise
NOTES

CHAPTER 1


2. Under this term “nonlinear systems theory” can be included the following areas of research: far-from-equilibrium thermodynamics; chaos theory; nonlinear dynamical systems theory; complex adaptive systems theory; anti-chaos theory; the theory of organized self-criticality; cellular automata; and other approaches to the phenomenon of self-organization. See the following works:


3. Traditionally, scientists focused on linear and avoided nonlinear equations. For example, J. Doyne Farmer recounts how physics textbooks relegated nonlinearity to the back of the book, and even there reduced it to a set of linear approximations (cited in James Gleick, Chaos: Making a New Science [New York: Viking, 1987], pp. 250, 251). The recent advent of computers and computer-aided graphics, though, has created a renewed interest in nonlinear mathematics.

   Even the term “nonlinearity” is not of much help since it is defined negatively: not being linear. The mathematician Ian Stewart has pointed out that defining nonlinearity as the negation of linearity is akin to calling all animals besides elephants non-pachyderms! (Stewart, Does God Play Dice: The
Mathematics of Chaos [London: Basil Blackwell, 1989], p. 84.) Hopefully, since we are only at the beginning of the advent of the age of nonlinearity, better terms will surely be forthcoming.


6. For a discussion on the problems with the concepts of equilibrium and its cousin concept, homeostasis, see Anthony Wilden, System and Structure (London: Tavistock, 1980)

7. Rather than a “Balance of Nature,” contemporary ecologists follow the physics of self-organization and speak of a balance between order and chaos at the “edge of chaos.” The edge of “chaos” is a realm in the evolution of a dynamical system which is characterized neither by a rigid structure nor by mere chaotic anarchy, but instead is a place that allows for the optimization of novelty and innovation; see Lewin, Complexity, op. cit. In this way, the “edge of chaos” allows a system to maintain its “autopoietic” integrity, i.e., its robustness in the face of a constantly changing environment; see H. Maturana and F. Varela, Autopoiesis and Cognition: The Realization of the Living (Dordrecht, Holland: D. Reidel Publishing Co., 1980).

CHAPTER 2


2. Feedback is typically separated into two types: positive and negative (please note that these terms are not value judgments about the feedback). Negative feedback refers to a nonlinear inhibition of a quantity. An example is a self-regulation process such as found in a thermostat. When the temperature in a room exceeds the pre-set top limit, say 70 degrees, the thermometer inside the thermostat “notices” this and sends a message to either turn off the heat (in winter) or turn on the air conditioning (in summer). This action will then decrease the temperature. There is a negative feedback loop between the thermostat and the room air temperature.
Nonlinear, negative feedback mechanisms are at work in our bodies as they maintain a fairly constant temperature of 98.6 degrees. This negative feedback has been called homeostasis since an equilibrium region (rest or stasis) is maintained. It is a process of self-regulation because the system is regulated by some internal mechanism like a thermostat to stay within a certain equilibrium range of some value.

On the other hand, positive feedback occurs when, instead of a dampening effect, there is an amplification—for example, the screech produced by a microphone placed too close to a speaker.

The system dynamics school of organizational research, founded by Jay Forrester at MIT, relies heavily on the notions of positive and negative feedback in its loop diagrams of organizational functioning. Thus areas of growth and expansion are positive feedback loops, whereas areas of limitations or self-regulating processes are negative feedback loops. Such diagrams help in intimating how various changes will affect the system as well as in understanding what seem to be counterintuitive behaviors in a system when changes are made.


7. For a somewhat sophisticated discussion of how nonlinear phenomena were treated by linear approximations see Bruce West, *An Essay on the Importance of Being Nonlinear* (Berlin: Springer-Verlag, 1985).


3. For an example of the importance of information flow in self-organization, see the work of Chris Langton in bringing about self-organization in cellular automata by manipulating the amount of information flow. Langton’s work is recounted in Steven Levy’s Artificial Life: A Report from the Frontier Where Computers Meet Biology (New York: Vintage Books, 1992).


7. An example of unbounded positive feedback is the instability associated with amplification of deviations from equilibrium as an airplane flies. Imagine a plane trying to maintain stability in the face of air turbulence. The pilot tries to keep this kind of instability in the plane’s motion to a bare minimum. That is, the pilot tries to keep tremors on the wings from amplifying into wide wobbles that might eventually lead to the pilot losing control of the plane. This kind of amplification away from equilibrium does not signify the emergence of any kind of useful ordered structure as is found in self-organization, since there is no firm, boundaried region that could harness the amplifications in a constructive direction.

8. There is an important way that information is gained in nonlinear systems such as those characterized as “chaotic.” For a very technical analysis of this phenomenon, see Robert Shaw’s article, “Strange Attractors, Chaotic Behavior, and Information Flow,” Zeitschrift für Naturforschung, 36a, 1981, pp. 80-112. For a less technical account of Shaw’s work, see Abraham and Shaw (1984), cited in Chapter 1, note 2.

CHAPTER 4


Corporate culture is the organizational counterpart to an individual’s belief system. It is a way of talking about the underlying relation between the organization’s dominant norms of behavior, sense of mission, and managerial styles. Corporate culture is thought to act as a hidden resistance not immediately obvious like organizational structure, work team composition, productivity goals, or management policies. From its position under the surface of the organization, culture can be like a fifth column superseding the conscious, surface policies and, thus getting in the way of change interventions.


CHAPTER 5


2. The SFP is the organizational analogue to what happens during autocatalysis in chemical reactions, a process necessary for self-organization in so-called chemical clocks. In a chemical clock, there is a process of self-organization characterized by an amazing periodic rhythm of clock-like changes in color and pattern.
In autocatalysis a chemical compound nonlinearly catalyzes itself. This means the presence of a particular compound in a chemical reaction enhances the rate of its own production. The more there is of the compound, the faster it is produced, and the faster it is produced, the more there is of it, and so on in an accelerating pace.

Yet, a curious thing about autocatalysis is that although it is clearly a nonlinear process, this nonlinearity is masked when the chemical reaction is at equilibrium conditions. This is similar to how equilibrium conditions mask the inherent nonlinearity of the Benard liquid as mentioned in Chapter 3. Thus, autocatalysis becomes a key ingredient in the chemical system's self-organization only when the chemical reaction is in a far-from-equilibrium condition.


4. This example is the subject of the social-scientific investigation of this group as recounted in Leon Festinger, Henry Riecken, and Stanley Schachter, When Prophecy Fails (New York: Harper & Row, 1956).

5. The typewriter example is taken from Gareth Morgan, Images of Organization (Beverly Hills: Sage, 1986).


8. Mentioned in Edgar Peters, Chaos and Order in the Capital Markets (New York: John Wiley & Sons, 1991). Peters even found that the time length and degree of the nonlinearity of these trends is connected to the kind of industry. For example, stocks in high-tech companies with high levels of innovation have stronger trends with shorter cycles than stable, uninnovative organizations such as utility companies.


---

CHAPTER 6

1. The use of families to illustrate the role of information in social systems is strongly indebted to the Milan School of Systemic Family Therapy as found in Luigi Boscolo, Gianfranco Cecchin, Lynn Hoffman, and Peggy Penn, *Milan Systemic Family Therapy* (New York: Basic Books, 1987).


---

CHAPTER 7


4. Certainly, there will be instances in which there may be disagreement as to what counts and does not count as a system. Being a system is a relative thing, in the same way that there may be more of a connection between the members in one family than in another. Nevertheless, there will be a way to distinguish a system from nonsystems since the system defines a bounded area where this inner influence is evident, in contrast to what is outside the system.


### CHAPTER 8

1. Gregory Bateson, *Steps to an Ecology of Mind* (New York: Ballantine Books, 1972). Bateson's concept of information has been extremely important in methods to bring about constructive change in that most crucial of all social systems—the family.


### CHAPTER 9


4. This is similar to the process of structural tension between vision and current reality developed by Robert Fritz in *The Path of Least Resistance* (New York: Fawcett Columbine, 1989).

**CHAPTER 10**


3. Y. Zeira and J. Avedisian, “Organizational Planned Change: Assessing the Chances for Success,” *Organizational Dynamics* 17 (1989): 31-45. Actually, Zeira’s and Avedisian’s instrument is a type of Lewinian force-field analysis that we discussed in Chapter 2. It identifies forces that are progressive toward change, such as an internal champion, and forces that resist change, such as a nonsupportive organization culture. If the resisting forces predominate in the system, Zeira and Avedisian recommend that change agents turn their attention to changing the culture first. This tactic is an instance of Lewin’s “unfreezing” of the “additional force field” of the organizational culture resisting change. See also Jeffrey Goldstein, “Beyond Lewin’s Force Field: A New Model for Organizational Change Interventions,” F. Massarik, ed., *Advances in Organization Development*, volume 2 (Norwood, N.J.: Ablex Publishing Company, 1993), pp. 72-88.

   Linda Ackerman suggested that change agents not only do an “impact analysis” of how the planned change will specifically affect functions, people, and management systems but they can also predict at what pace this change will proceed. This suggestion reveals a strong belief in predictability about the impact of a change intervention. See her article, “Transition Man-


   This aspect of nonlinear unpredictability prompted computer scientist Ed Fredkin to remark: "There is no way to know the answer to some question [a nonlinear one] any faster than what's going on...[even God] cannot know the answer to the question any faster than doing it." (Quoted in R. Wright, *Three Scientists and Their Gods: Looking for Meaning in an Age of Information* (New York: Time Books, 1988), p. 68).


8. See P. Allen and J. McGlade, "Evolutionary Drive: The Effect of Microscopic Diversity, Error Making and Noise," *Foundations of Physics* 17(7): 723-738 (1987). Nonaka, in his studies of successful Japanese corporations, has proposed that the creation of crises in these organizations facilitated innovative strategies to deal with the crises See I. Nonaka, "Creating Organizational Order out of Chaos: Self-renewal in Japanese Firms," *California Management Review* 30(3): 57-73 (1988). In this way crises can function as far-from-equilibrium conditions. However, why is it necessary to generate a crisis when chance events or random departures from equilibrium are taking place all the time in organizations? What is necessary, then, is not a crisis, but a way to take advantage of what is already taking place, i.e., the organizational noise.


12. Ibid., pp. 76, 77.

14. This view of different possible outcomes and their unpredictable nature stands in marked contrast with the general systems approach to understanding organizational dynamics, in which the principle of equifinality has it that the organization will have many possible ways to reach a single goal (Ludwig von Bertalanffy, *Perspectives on General Systems Theory* (New York: George Braziller, 1975)). Such a viewpoint is actually an equilibrium-based model since it is claimed that this equifinality comes about from the restoration of equilibrium after a disturbance. Of course, in an equilibrium-seeking model, the final outcome is always predictable; it is the state of equilibrium. An isolated system will naturally tend to the state of equilibrium, even though the pathways taken to reach this final state are many and varied, and it may take some time for the transient phenomena that depart from equilibrium to die out. For equilibrium-based general systems models in organizational theory, see *General Systems and Organization Theory: Methodological Aspects*, ed. A. Melcher (Kent, Ohio: Kent State Univ. Press, 1975).


Jeffrey Goldstein, Ph.D., has been a full-time faculty member in the Department of Administrative Sciences, Schools of Business, Adelphi University, Garden City, NY since 1989. Professor Goldstein has also taught at Rutgers University, Columbia University, NYU, and Temple University. As a consultant to many public and private businesses and institutions, Dr. Goldstein has been primarily interested in how to help organizations bring about deep-rooted change.

Professor Goldstein has published over 30 articles and is a frequent presenter at professional conferences. For the past seven years, his primary focus of research has been the application of the new nonlinear systems sciences to the study of organizational dynamics. This has included research and writing on chaos theory, far-from-equilibrium thermodynamics, complex, adaptive systems theory, and nonlinear dynamical systems theory. Dr. Goldstein is a member of the Society for Chaos Theory in Psychology and the Life Sciences, the Chaos Network, and Chaos in Praxis.
INDEX

“ARBCO,” 39, 150
Absurdity, 35, 103
  Carl Whitaker and, 164
  implementation of, 164–66
Action research, 52
Andrews, John, 145
Arthur, W. Brian, 80
Assumptions
  challenging, 143–47
  questioning, 149
Attraction, 53–54
Attractors, 30, 53 et seq. See also Fixed-point attractor, Limit-cycle attractor as context of a system, 61 equilibrium, 63 from resistors to, 57
Austin, James, 161
Balfour, L.J., 156
Bateson, Gregory, 125–26
Beachgoers example, 43
Benard liquid, 37–38, 40, 67, 106, 112, 113
Beta vs. VHS example, 80
Boundaries, 48–52
  authority and, 109
  at a medical school, 110
  organizational, 99
  role of, 108–10
  self-organization and, 105
  working with, 105–21
Boundaryless organization, 106, 109–10
Bounded system, 113–15
Butterfly effect, 29
Campbell, Jeremy, 95
“Carville General Hospital,” 3, 18, 143, 146
Challenges, assimilation of, 146–47
Change agent, 53
  with nonlinear intuition, 155–56
Chaos, 12–13
  and boundaries, 105
  butterfly effect and, 29
  modern meaning of, 167
Chemical clocks, 47
“Colossal Engineering,” 22
“Community Emergency Response Center (CERC),” 107–108
Concurrent engineering, 32
Continuous improvement, 15, 32
Control strategies, limitations of, 13
Corey, Michael, 71
Cultural difference questioning, 132–36
Cycle time management, 32
Delta Airlines, 70–71, 77, 79
Density differences, 44–45
Difference questioning, 100, 125–36
  to change family systems, 127–28
Disequilibrium, 14
Disproportionate effect, 21–23
Donkey model of change, 10, 55, 68
Dyer Jr., W. Gibb, 158
Environments, 111–12
  external, 116
  internal, 116
  systems and, 98, 111–12
Equilibrium, 14
  information-blocking nature of, 74, 96–98
  linear systems at, 29–31
  resistance as an attractor under, 62
  systems seeking, 62–64
  utilizing departures from, 44–46
Equilibrium attractor, 63
Equilibrium-seeking processes, 65–66
PC-8000, 46
Pasteur, Louis, 163
“Parkside Hospital,” 54, 74–75, 130, 131, 137
“Pearl and Pebble Records,” 49
Peters, Edgar, 79
“PharmChem,” 2, 141
Placebo effect, 82–83
Planned change, 13
Planned change model, 5
Planning, beyond, 156–58
Precipitous change, 20–21
Predictability, 27
Prigogine, Ilya, 6, 37
Process innovation, 15
Procrustes effect, 81
“PsychCare,” 24
Purpose contrasting, 100, 136–38
Pygmalion effect, 78–79

Questionnaire, cultural differences, 135

Random effects, magnification of, 45, 50–51
Reengineering, 15
Resistance to change
affirmative core of, 55–57
as attraction, 66
to positive values, 53–68
as an attractor, 62
overcoming linear, 11
salient features of, 56
Retreat, 3, 34
Rhythm of change, 10
Rosenthal, Robert, 78

Schnauzers, mice and, 26, 60
“Sculpting people” exercise, 151
See-saw example, 62–63
Self-fulfilling prophecy, 66, 71–88
bank run example, 71
at Johnsonville Foods, 75–76
structure of, 71
types of, 78–85
undermining a, 129–30
Self-generated change, 7–9
Self-generated information, 126–27
Self-organization, 1
alchemy of, 2–5
assumptions to guide, 16

Benard cells, in, 38
basic features of, 6–15, 33
boundaries and, 105–6
characteristics of, 51
at a city agency, 39
process of, 36–52
requirements of, 155–56
teams and, 3–5

Self-transformation, 139
Semco, 41–42
Serendipity, 102
absurdity and, 164–66
from noise to, 158–60
taking advantage of, 161–64

Spontaneous empowerment, 4
Spontaneous reorganization, 37–39
Stayer, Ralph, 75, 78, 90, 141
Stengers, Isabelle, 6
Stewart, Ian, 29
Swing example, 59–60
System, 23. See also specific type of system
differences in a, 123–39
environment and, 112

Team character, 3, 4
Team organization, 3–5
Total quality management (TQM), 3, 8, 15, 91
Transformation out of chaos, 12–13

“U.S.A. Motors,” 25
Unpredictability, 27–29

VHS vs. Beta format, 80
Video format, 80–81
Virtuous circle, 76

“Wall Street Stocks and Bonds,” 64, 83
Weather prediction, 27–29
Westly, F., 157
Wheatley, Margaret, 142
Whitaker, Carl, 164
Wolff, Eric, 166
Work groups
difference questioning in, 128
isolation of, 117–19

Zimmerman, Brenda, 153