


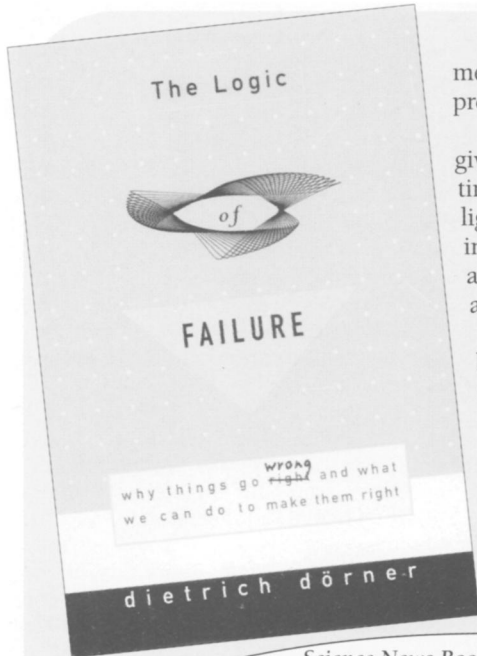
The Weekly Newsmagazine of Science

SCIENCE NEWS

May 17, 1997
Vol. 151, No. 20
Pages 297-312



Dioxin: A Trout Tale



Why do trains crash when the signals are working? Why does a nuclear reactor melt down with all operators alert at their posts? Why do so many of our best-laid professional and personal plans so often go awry?

Dietrich Dörner, winner of Germany's highest science prize, considers why—given all our intelligence, experience, and information—we make mistakes, sometimes with catastrophic consequences. Surprisingly, he finds the answer not in negligence or carelessness, but in what he calls “the logic of failure”: certain tendencies in our patterns of thought—such as taking one thing at a time, cause and effect, and linear thinking—that, while appropriate in an older, simpler world, prove disastrous in the complex world we inhabit now.

Dörner finds no lack of examples. Why did the Aswan Dam planners who brought the blessings of cheap electricity to Egypt not realize that they would also interrupt the annual floods that for millennia had kept the Nile Valley rich and fertile? Why do planners of Third World health programs not realize that increased life expectancy requires increased food and thereby inadvertently contribute to starvation?

Working with intriguing computer simulations of his own invention, Dörner exposes the flaws in our thinking. His examples—sometimes hilarious, sometimes horrifying—and brain-teasing thought experiments teach us how to solve complex problems. Together they make *The Logic of Failure* a corrective tool, a guideline for intelligent planning and decision making.

—from Metropolitan Books

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LogicFailH

Please send _____ copy(ies) of *The Logic of Failure*. I include a check payable to Science News Books for \$25.00 plus \$2.00 postage and handling (total \$27.00) for each copy. Domestic orders only.

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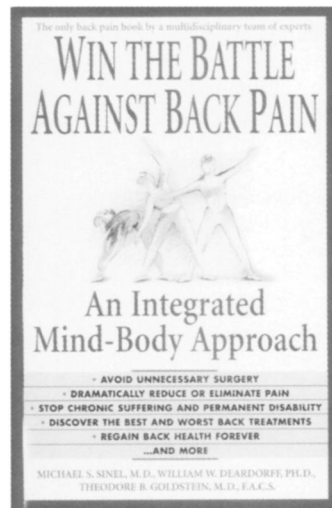
THE TREATMENT YOU RECEIVE FOR BACK PAIN CAN BE MORE DISABLING AND DANGEROUS THAN THE PAIN ITSELF.

Back pain affects more than 75 percent of Americans at some point in their lifetime. It is second only to the common cold as a reason for a visit to the doctor. It is second only to childbirth as a reason for hospitalization. But in an alarming number of cases, the treatment received makes the problem worse. Now, three renowned doctors have developed an integrated mind-body approach, giving you access to the most up-to-date scientific findings available on the treatment of back pain—and to their extensive clinical experience putting these findings into practice. Designed to help you avoid useless or dangerous therapies, this authoritative guide also explores the crucial role your thoughts and emotions play in the treatment of back pain.

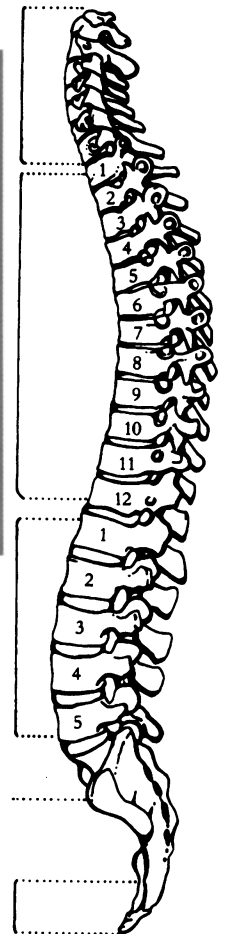
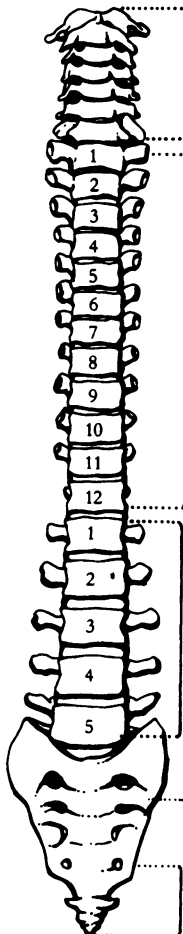
Whether you have recently injured your back, have suffered chronic back pain for years, or had back surgery that failed, you will find life-changing information to help you stop hurting and start living a full, active life again, including

- Why surgery often fails
- What you need to know about pain medication
- When surgery is indicated and how to select the best surgeon
- Why physical and mental reconditioning are essential
- What the latest findings reveal about chiropractors, acupuncture, and other alternative treatments...and more.

— from Dell



Dell Publishing
1996, 354 pages
5 1/4" x 7 1/8"
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WinBackPain

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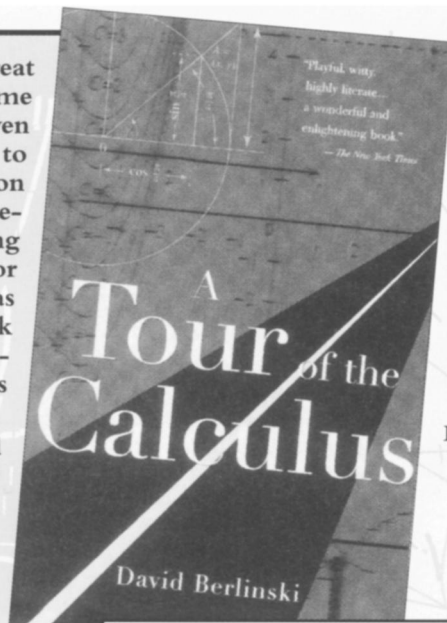
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The calculus represents humanity's great and profound meditation on the theme of continuity. Time and space are given voice, and speed and area are subordinated to the harsh concept of a limit. The introduction of real numbers allows the landscape of mathematical analysis to be suffused with thrilling light. In that lit-up landscape, the infinite is for the first time charmed into compliance as men and women gain the eerie power to ask of certain processes, Suppose it goes on forever, what then? and finding within the calculus a comprehensive answer.

In clear and instructive language, David Berlinski explains the concept of limits, how a function describes a relationship between numbers, and the meaning of real numbers and their role in the re-creation of the world. Hidden for centuries from human insight, an array of mathematical operations and processes becomes visible.

Berlinski's great achievement is that he not only breathes life into the principles of the calculus but also reveals processes that occur in the real world. Moving beyond the basics, Berlinski shows us in dramatic and original ways that the calculus is more than a system of mathematics. It is also an instrument commensurate at last with humanity's limitless capacity to regard the universe with wonder.

—from Vintage



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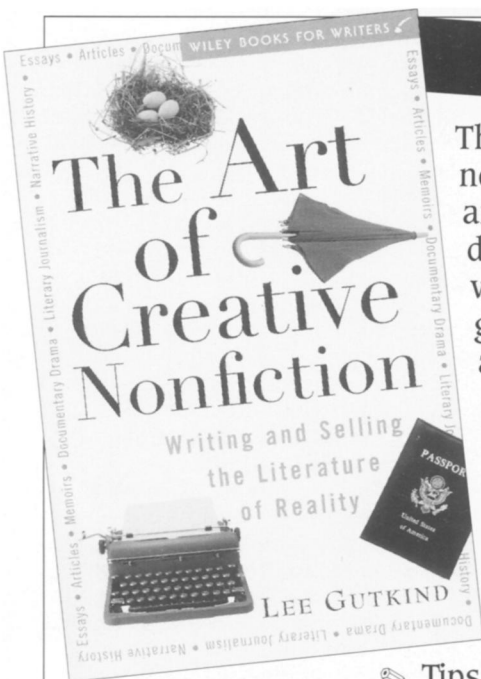
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John Wiley & Sons, 1997, 209 pages, 6" x 9", paperback, \$14.95

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