

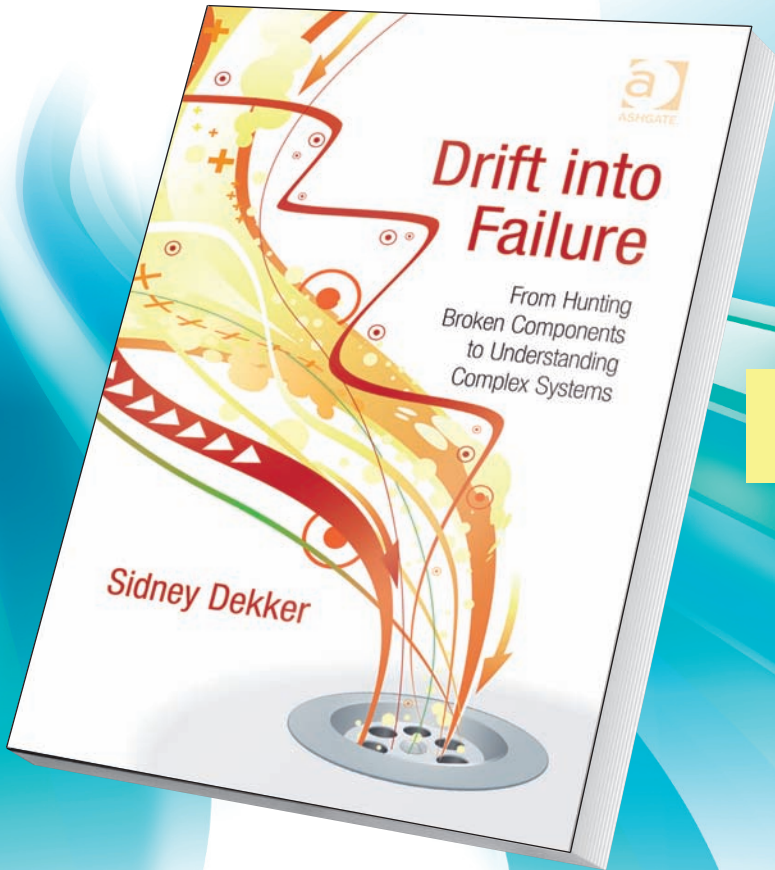
Drift into Failure

From Hunting Broken Components to
Understanding Complex Systems

Sidney Dekker, Lund University, Sweden



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Drift into Failure

From Hunting Broken Components to Understanding Complex Systems

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What does the collapse of sub-prime lending have in common with a broken jackscrew in an airliner's tailplane? Or the oil spill disaster in the Gulf of Mexico with the burn-up of Space Shuttle Columbia? These were systems that drifted into failure. While pursuing success in a dynamic, complex environment with limited resources and multiple goal conflicts, a succession of small, everyday decisions eventually produced breakdowns on a massive scale.

We have trouble grasping the complexity and normality that gives rise to such large events. We hunt for broken parts, fixable properties, people we can hold accountable. Our analyses of complex system breakdowns remain depressingly linear, depressingly componential – imprisoned in the space of ideas once defined by Newton and Descartes.

The growth of complexity in society has outpaced our understanding of how complex systems work and fail. Our technologies have moved ahead of our theories. We are able to build things – deep-

sea oil rigs, jackscrews, collateralized debt obligations – whose properties we understand in isolation. But in competitive, regulated societies, their connections proliferate, their interactions and interdependencies multiply, their complexities mushroom.

This book explores complexity theory and systems thinking to better understand how complex systems drift into failure. It studies sensitive dependence on initial conditions, unruly technology, tipping points, diversity – and finds that failure emerges opportunistically, non-randomly, from the very webs of relationships that breed success and that are supposed to protect organizations from disaster. It develops a vocabulary that allows us to harness complexity and find new ways of managing drift.

This is a vocabulary you need to learn. For business leaders and practitioners as well as academics and researchers, *Drift into Failure* has much to offer.

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The Author

Sidney Dekker is Professor and Director of the Key Centre for Ethics, Law, Justice and Governance at Griffith University in Brisbane, Australia.



Previously Professor at Lund University, Sweden, and Director of the Leonardo Da Vinci Center for Complexity and Systems Thinking there. He gained his Ph.D. in Cognitive Systems Engineering from The Ohio State University, USA.

He has worked in New Zealand, the Netherlands, and England, been Senior Fellow at Nanyang Technological University in Singapore, Visiting Academic in the Department of Epidemiology and Preventive Medicine, Monash University in Melbourne, and Professor of Community Health Science at the Faculty of Medicine, University of Manitoba in Canada.

He is author of several best-selling books on system failure, human error, ethics and governance. Recent books include *Just Culture: Balancing Safety and Accountability* (2007), and *Behind Human Error* (2010). He started flying the Boeing 737NG part time as airline pilot a few years ago. The OSU Foundation in the United States awards a yearly Sidney Dekker Critical Thinking Award.

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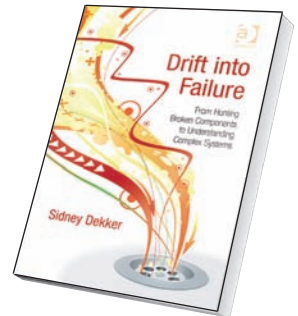
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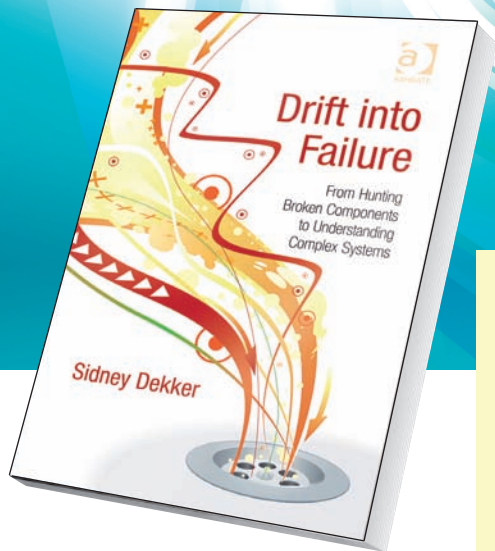
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