

Have We Lost The Plot? (And If So How Do We Get It Back?)

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Rick Nason, PhD,
CFA

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RSD Solutions
Inc.

What is the plot?

- The Future of Risk Management

What is risk?

- All things to all people!

What is risk?

- Can you explain it to your mother?
- (without sounding totally retarded?)

What is risk?

- The possibility that bad or good things may happen.

What is risk management?

- ?

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Risk Management is not:

- Auditing
- Processes
- Science & Mathematics (nor Statistics)
- Compliance
- Measurement

Risk Management is:

- Increasing the probability and magnitude of good things happening
- &
- Decreasing the probability and severity of bad things

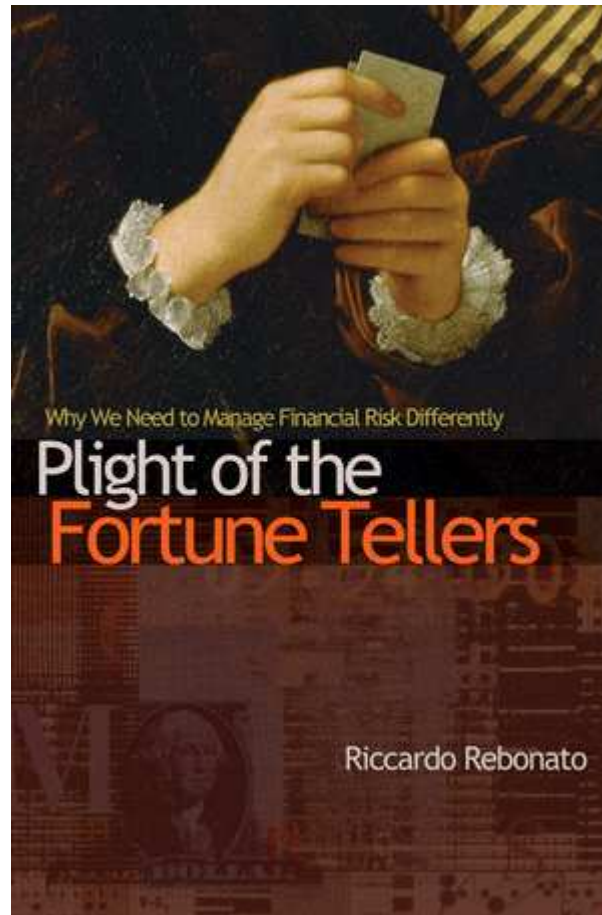
Risk Management is:

- People
- Information
- Systems Learning
- Balance
- Creativity
- Future

Risk Management is not:

- Axioms

Frequentist Statistics



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Arbitrage

- Almost Arbitrage

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Arbitrage

THE JOURNAL OF FINANCE • VOL. XLI, NO. 3 • JULY 1986

Noise

FISCHER BLACK*

ABSTRACT

The effects of noise on the world, and on our views of the world, are profound. Noise in the sense of a large number of small events is often a causal factor much more powerful than a small number of large events can be. Noise makes trading in financial markets possible, and thus allows us to observe prices for financial assets. Noise causes markets to be somewhat inefficient, but often prevents us from taking advantage of inefficiencies. Noise in the form of uncertainty about future tastes and technology by sector causes business cycles, and makes them highly resistant to improvement through government intervention. Noise in the form of expectations that need not follow rational rules causes inflation to be what it is, at least in the absence of a gold standard or fixed exchange rates. Noise in the form of uncertainty about what relative prices would be with other exchange rates makes us think incorrectly that changes in exchange rates or inflation rates cause changes in trade or investment flows or economic activity. Most generally, noise makes it very difficult to test either practical or academic theories about the way that financial or economic markets work. We are forced to act largely in the dark.

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Arbitrage

- Measurement Error

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Optimization

- Satisfication

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Calculation of Answer

- Never start a calculation until you know the answer

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Behavioural Finance

- Sociology not Psychology

Tractable Problems

- Untractable is the reality
- The great success of the normal distribution is one of the worst things to happen to finance and risk management

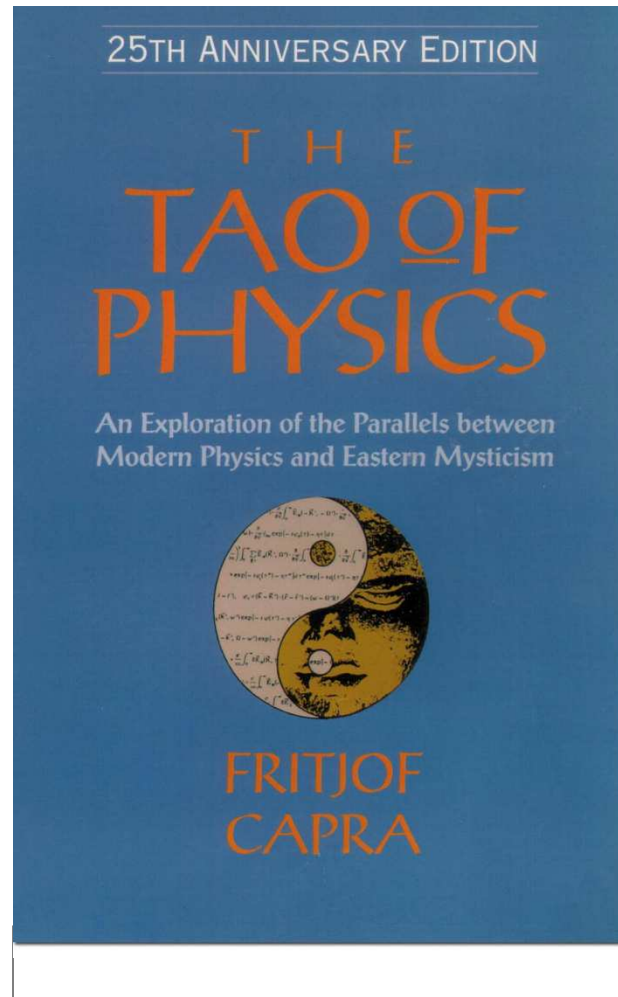
Modern Portfolio Theory

- Post-Modern Portfolio Theory

Data is Good

- Research where there is data rather than where there is research

Physics Envy



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Complicated

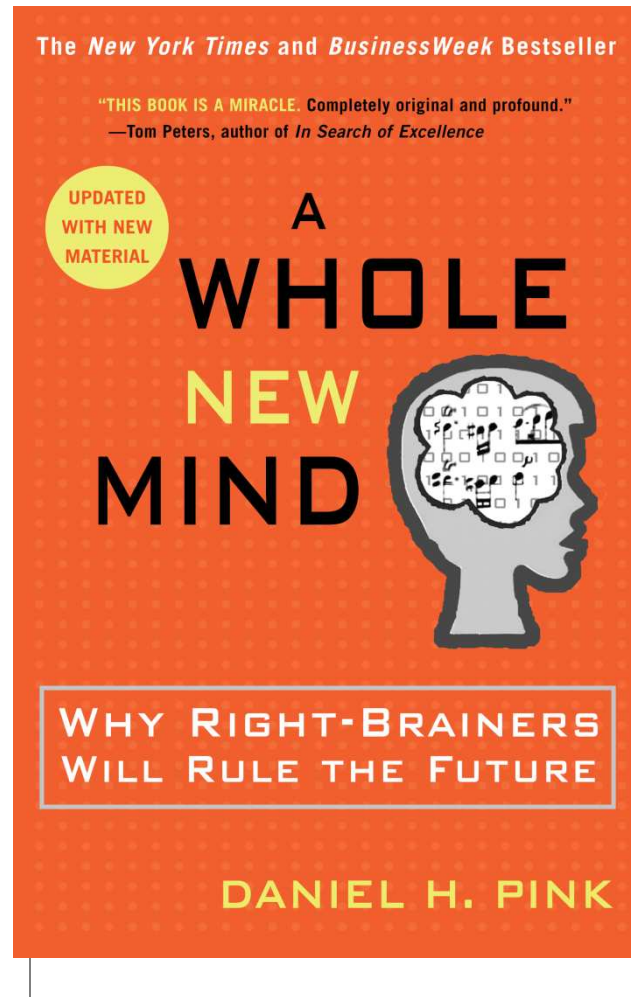


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Final Axiom: Brains Win

- Orval's Law: Evolution is smarter than you are!

Beyond Axioms



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A Whole New Mind

- Design
- Story
- Symphony
- Empathy
- Play
- Meaning

Sociological Imagination

- “The ability to see the connection between personal issues and social structures”
- C. Wright Mills

Simple1



4/15/10 Getting to Maybe, F. Westley, B. Zimmerman & M.Q. Patton, Random House
Canada, 2006

Complicated



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Complex



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Simple, Complicated, ~~Complex~~



recipe

replication

experience
helps

more or less
linear

room for
variations



rigid protocol

increase prob.
of success

expertise
essential

strictly linear

exactness
necessary



help!?

random results

experience
dubious

nonlinear

CSF
unknown

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Risk Mgmt. is Simple

- Most of the time,
- simple is sufficient

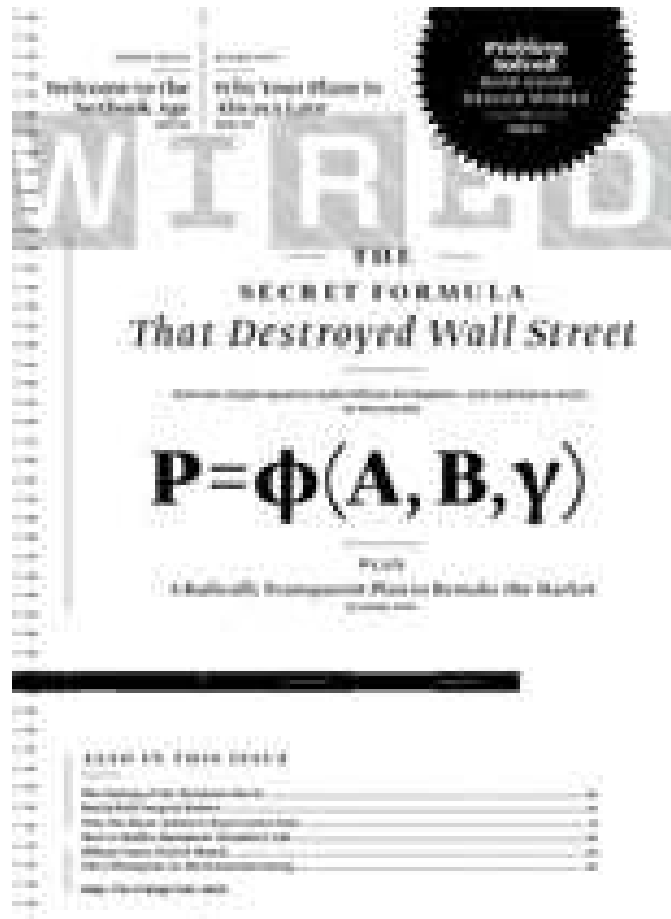
Risk Mgmt. is Simple ???

- ~~Most of the time simple is sufficient~~



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Risk Management is ~~Complicated~~



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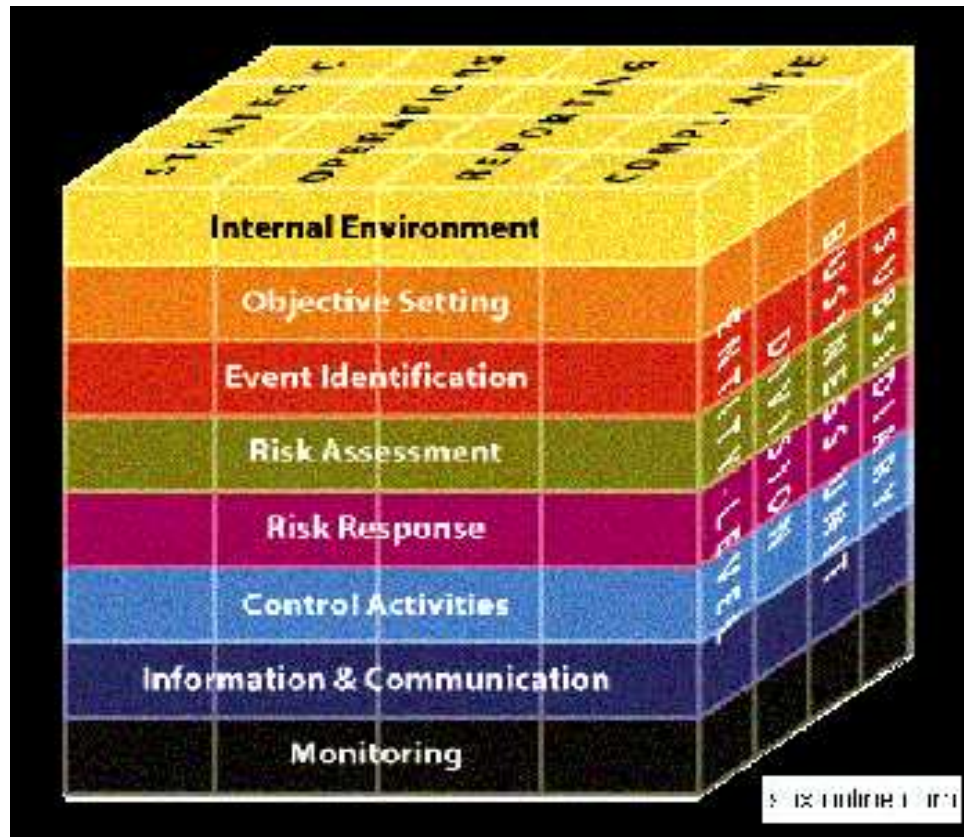
Risk Management is ~~Complicated~~

$$c = S_o e^{-qT} N(d_1) - X e^{-rT} N(d_2)$$

$$d_1 = \frac{\ln(S_o / X) + (r - q + \sigma^2 / 2)T}{\sigma \sqrt{T}}$$

$$d_2 = d_1 - \sigma \sqrt{T}$$

Risk Management is ~~Complicated~~



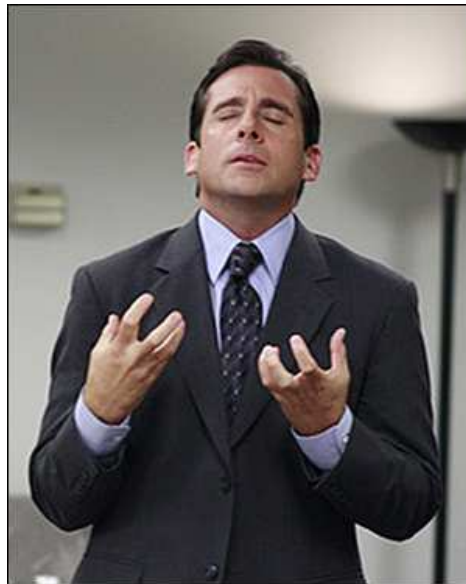
Sourced from http://www.datagovernance.com/fwo4_COSO_cubes.html

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Risk Management is ~~Complicated~~

- Precisely wrong?
- Worth the effort?
- Measurement of results?

Risk Management is ~~Complex~~



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Risk Management is Complex



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Risk Management is

Complex

- Too many unique utility functions
- Time varying utility functions
- Too many connected utility functions
- Randomly varying utility

Risk Management is ~~Complex~~

- The Gods having too much fun
- Einstein was wrong – the financial gods do play dice!

Risk Management is ~~Complex~~

- Risk Management is not physics
- Even physicists admit to;
 - (a) An Uncertainty Principle
 - (b) Wave – particle duality

Risk Management is

Complex

- Too many unintuitive or unintended consequences

Risk Management is



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Risk Management is ~~Complex~~

- Does this mean it's hopeless?
- No!

Risk Management is

Complex

- Need for heuristics
- Need for holistic approach
- Need for intuition
- Need for situation sensitive flexibility

Risk Management is ~~Complex~~

- Knowledge alone is insufficient
- Perhaps even dangerous

Risk Management is ~~Complex~~

- Complex \neq Complicated
- Complex \neq Hard
- Complex \neq Impossible

What to do?

- Recognize when a situation is simple, complicated or complex

What to do if simple?

- Keep it simple (stupid) ... duh!

What to do?

- The Serenity Prayer
- God grant me the serenity
- to accept the things I cannot
- change; courage to change
- the things I can; and wisdom
- to know the difference.



What to do?

- The ~~Serenity~~ Analyst's Prayer
- God grant me the serenity
- to accept the things I cannot
- ~~change~~ calculate; courage
- ~~change~~ calculate the things
- and wisdom to know the
- difference



What to do?

- Recognize that approximately right is better than precisely wrong (Riskmetrics)
- Learn to appreciate ambiguity

What to do?

- Expect the unexpected
- Have a “cunning”
- contingency plan



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What to do?



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BOOST IT

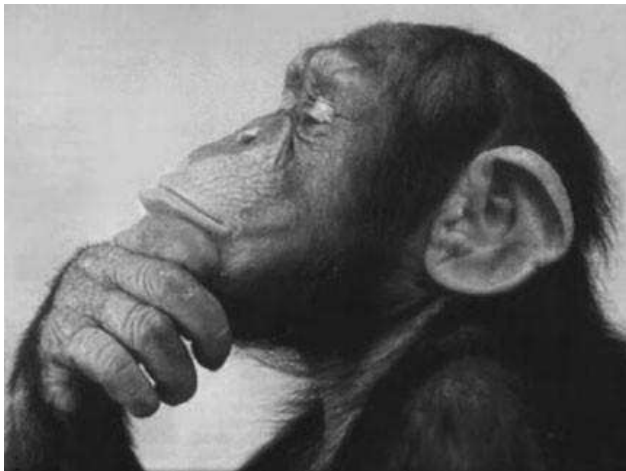
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What to do?



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What to do?



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Final Thought

- In times of change, learners inherit the Earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists. *Eric Hoffer*

Rick Nason

RNason@RSDsolutions.com

902-441-4102

www.RSDsolutions.com



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