Human Decisions with Hidden and Malicious Intent in Business and Management

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By

Thang Nhut Nguyen

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In Loving Memory Of

My parents, sister, son and nephews

Father: Nguyen Thuc Tam (deceased, 1991)
Mother: Truong Thi Hong Quang (dec. 1995)
Sister: Nguyen Thi Kim Thanh (dec. 2023)
Son: Nguyen Nhut Vu Anh (dec. 1989)
Nephew: Nguyen Nhut Khanh Lu (dec. 2021)
Nephew: Phan (Tony) Tuan, Ph.D. (dec. 2011)

My in-laws

Father: Chau Van Thanh (dec. 1990)
Mother: Tang Ton Nu Cam Van (dec. 1990)
Brother: Chau Van Dan (dec. 1988)
and his wife: Nguyen Thi Tu (dec. 1988)

My American old friends/sponsors (Ong Ba Tuong)

Brigadier General Wallace L. Clement (dec. 2000)
Mrs. Martha Clement (dec. 2009)

This manuscript is dedicated to,

- Nguyen Tu Thien, former Director of Civil Aviation, South Viet Nam
- R. Glen Davis and Jim Green, former USAID, South Viet Nam
- BG. Wallace L. Clement, Martha and family, Fairfax, VA
- Jim and Sharon Tate, Bob and Joan Gibson, The Hazels, Fairfax, VA
- Dr. Harry Stephanou (my thesis advisor), Dr. Raoul Freeman (of CSU Dominguez Hills), and my former managers and friends at American Bankers Association, Value Systems Engineering, Litton Computer Services, US Chamber of Commerce, IBM Bethesda Branch and IBM Systems Center, Candle Corporation (IBM Tivoli), SAIC and California State University Long Beach

They all have been affecting my personal, professional and academic life for the better, one way or another.

TABLE OF CONTENTS

Note: Chapters 1-4 follow a Waterfall software application development*: 1-Use cases for Requirements Development, 2-System Analysis, 3-Conceptual High-level Design and 4-Implementation considerations. Each chapter begins with a chapter overview and ends with chapter concluding remarks.*

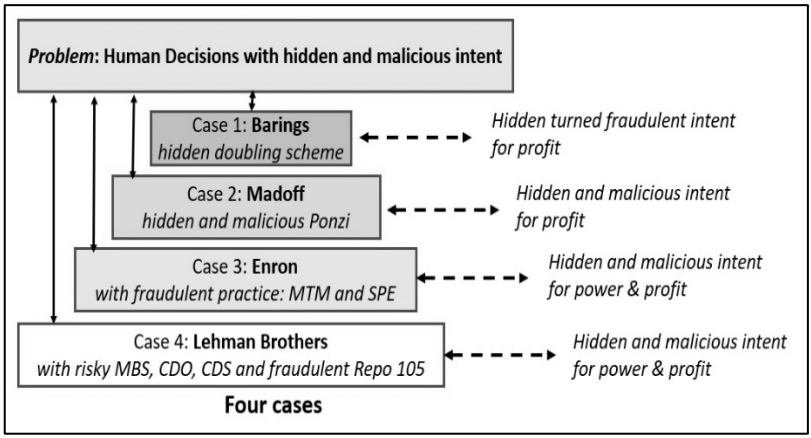
ABOUT THE BOOK

THE WHAT AND THE HOW

We primarily focus on human decisions with hidden and malicious intent in business and management leading to institution collapses, market turmoil and/or economic meltdown, for modeling description, prediction, prevention and correction.

The What

For Lessons Learned. We select four different institution collapse cases during 1990's to the 2008 Great Recession for investigation and lessons learned. We use these cases for analysis and conceptual modeling and discussion, including post-Great Recession from 2008 to 2023.



1. **Barings' Bank Collapse**, with *hidden intent turned fraudulent* by Nicholas Leeson using doubling scheme (Martingale) under *Pressure* for *Profit*;

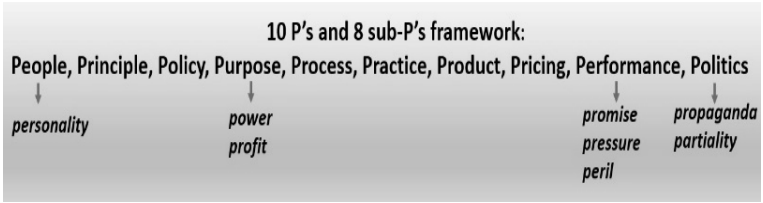
2. **Madoff's Investment Securities Collapse**, with *hidden and malicious intent* from the start by Bernie Madoff using Ponzi scheme for *Profit* solely;
3. **Enron's Collapse** with *hidden and malicious intent* by mainly Jeff Shilling, Andrew Fastow, and Ken Lay for *Power* and *Profit*, in manipulating stock price using MTM (Mark to Market) and SPE (Special Purpose Entities), and
4. **Lehman Brothers' Collapse** *with hidden and malicious intent* for *Power* and *Profit* by Richard Fuld pursuing devalued MBS (Mortgage-Backed Securities), risky CDO (Collateralized Debt Obligations) and toxic CDS (Credit Default Swaps) in mortgage and subprime lending, leading to the fraudulent use of Repo 105 (Repurchase Agreement).

Impact on Humans, Institutions, Market and Economy. We address the impact on the mixed market and economy caused by the above cases (1990's to 2008), and post-2008 Great Recession to the present time (2023).

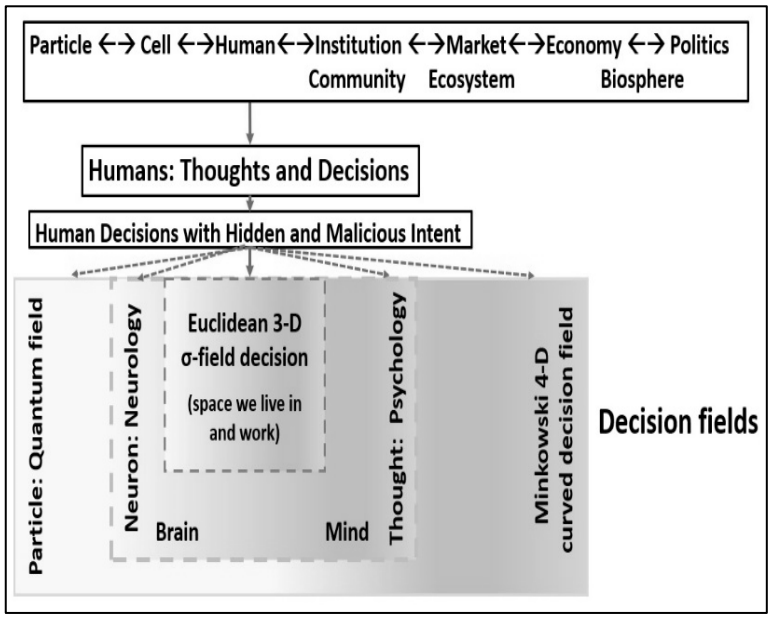
The How

Formulation of a Systemic Framework. We frame our main problem of interest: *human decisions with hidden and malicious intent in business and management*, with three formulations and explore different approaches to the understanding of not only institution collapses affecting their employees (all cases) and loss of investments, and pensions and retirement funds (Madoff Investment Securities, Enron and Lehman Brothers), but also impact on market (all cases) and economy (especially Lehman Brothers).

- ***Formulation 1: The (10+8) P's and Sub-P's Framework***. In the past, decisions in business and management disciplines (e.g. marketing, finance, accounting, etc.), and in other disciplines (economics, politics, etc.), have been studied by researchers and practitioners with respect to one or more P's of our currently proposed *10 P's* with eight *sub-P's* framework (not exhaustive)*: People, Principle, Policy, Process, Practice, Purpose, Product, Pricing, Performance,* all commonly described in corporate documents/records, and *Politics* as exercised and/or experienced at the government scale. *People's* decisions with hidden and malicious intent *(*sub-P*: Personality)* drive a sought-after *Purpose* (sub-P's*: Power, Profit*), resulting in *Performance* with sub-P's: *Promise* (expected), *Peril* (failed) while commonly under *Pressure* (internal and/or external) and/or exercising *Politics* with sub-P's (*Partiality, Propaganda*). Together we call it (10+8) P's and sub-P's.



- ***Formulation 2: Decision Space Rather than Problem-Specific Space***. Most decisions are investigated in a problem-specific space. We first flip the common problem-specific space (*Problem* → *Solution*) to a decision space (*Decision: Problems* → *Solution*) of the world we live in and work, where decisions are made, activities are carried out and events happen, in a Euclidean decision σ-field.



This space is a 3-dimensional decision field (following Herbert Simon's classification): rational-*x* (logical), irrational-*y* (emotion), non-rational-*z* (gut feeling), on the *10* P's. The decision σ-field will also foster methods under uncertainty as taught in schools and practiced in business, commonly used in investigating, evaluating and obtaining decision optimality and/or Simon's bounded optimality including non-

commutative decisions. The field is extended to include neuro-psychological examination of decision makers, as well as further extension to considerations (a) on decision entanglement using quantum field, and (2) on decision cause-effect from different frames of reference in a Minkowski curved decision spacetime. Together they form an *embedded decision field.*

- ***Formulation 3: Biological Spectrum/Hierarchy Approach***. Humans and their decisions are part of the *organism* component of von Bertalanffy's biological spectrum/hierarchy of the natural continuum.

particle → cell → **organism** → community → ecosystem → biosphere → transcendental system

With information gathered from four selected collapse cases (Barings, Madoff Investment Securities, Enron and Lehman Brothers), we explore reasoning schemes on the embedded decision field within the context of the biological spectrum/hierarchy from particle to biosphere.

Approaches to Modeling. Multiple approaches are used to suggest a conceptual model on human decisions with hidden and malicious intent in business and management. The conceptual modeling effort generally follows the waterfall software development process (requirements, system analysis, design, implementation) to potentially build a practical human decision investigation application with AI-augmented. The approaches include:

- ***Approach 1: Cancer Analogy***. The hidden and malicious intent in human decisions in an institution is *analogous* to abnormal cells turned malignant tumor causing a cancer disease in the human body which, by the time it is detected (red flag), it is too late and drives the human to potential death, similar to institution facing collapse. Using the human cancer analogy, we sketch a conceptual linear process with Q1 (detect anomalies – *early detect or screening and prognosis*), Q2 (find causes and root causes – *diagnosis*), Q3 (treatment – *early interfere*) and Q4 (evaluation). We offer our thoughts on the impact on market, market economy and economy, and government and politics.
- ***Approach 2: Neurological and Psychological (Human Behavior Biology) Examination***. Decisions occur in the human brain and mind. At the brain level, they can be looked at from a *neurological* perspective since they are made of neurons and neuronal interactions. At the mind

level, decisions practiced by human decision makers can be investigated from a *psychological* perspective. They can also be looked at from an integrated perspective: neuropsychological behavior (at the human level), or neuroeconomics as well (at the institution level).

- ***Approach 3: Insights from Quantum Field Theory for Fine-Grained Investigation***. Human decisions can be seen as discrete entities (decision A, B, C…) of networked neurons (making up decision) and of particles (making up neuron) at the subatomic level. At this level they can also be conceived as continuous field (waveform) like temperature in water, air, etc. From this fine-grained aspect below the neurological level, they have waveform and particle duality, among other things. The question is "*Would it be possible that human decisions observe quantum field principles namely uncertainty, tunneling, superposition, and entanglement, where applicable*?"
- ***Approach 4: Insights from Minkowski-Leibnitz-Einstein Spacetime for Coarse-Grained Investigation***. At the coarse-grained level, we look at decisions in curved spacetime since critical and heavily influencing decisions might create a decision curvature analogous to the Minkowski spacetime curvature. The question to be asked is: Could we observe John Wheeler's idea *"Matter tells spacetime how to curve; spacetime tells matter how to move",* or analogously: Could we consider "*Human decision in curved spacetime tells entities (institution, business, market, economy) how to move and these entities tell decision spacetime how to curve?*"
- ***Approach 5: Applying General Systems theory (GST) where Applicable.*** General system theory is implied since we look at von Bertalanffy-Boulding's biological spectrum/hierarchy in scoping our embedded decision field. We seek to incorporate concepts and mechanisms such as homeostasis, and cybernetics. We consider reasoning schemes in human decision investigation such as intuition and (un)common-(non)sense, analogical and topological reasoning, inheritance, generalization, specialization, aggregation and complementarity, besides Herbert Simon's rationality, irrationality and non-rationality and Daniel Kahneman's thinking slow and fast.

On AI-Augmented. The formulation of embedded decision field suggests different perspectives and a wide range of known methods and tools from pure logic and mathematically-based (drawn from σ-algebra in deterministic Newtonian and probabilistic Bayesian theory and Kahneman and Tversky's prospect theory), added with quantum field principles (fined-grained) and Minkowski spacetime (coarse-grained). It would be impractical to expect

business analysts, examiners and investigators to learn these tools for applications on their own unless we consider an AGI (artificial general intelligence), specifically AI-augmented, which will work in cooperation and in synergy with humans.

Human Decisions with Hidden and Malicious Intent in the Small and in the Large (Extension). To complete the theme suggested by the three formulations and five approaches, with AI-augmented, we examine beyond the impact of a collapse on market and economy, to include *human decisions with hidden and malicious intent* ***in the small*** (family and friends, external scammers, professional circle, small business for profit, or in school administration or community for power) and ***in the large*** such as social platforms or government for power, profit, and propaganda exercising *politics*. Examples of the latter include (1) "the Collapse of the Republic of South Viet Nam" in 1975 for lessons learned towards possibly preventing another, and (2) asking the question "*Where America is heading?*". This extension however will be detailed in our future work.

PROLOGUE

WHY THE BOOK?

The Why

We are intrigued and inspired by a quote "*Don't judge a man by the outcome of his decision, judge a man by the intention behind his decision*".

Why Human Decisions with Hidden and Malicious Intent? Human decisions constitute a key and influential part of business and management, and beyond. At top management level, they strategically drive the growth and profits of any corporation, firm, enterprise, government agency which we collectively call *institution* in this manuscript. Growth could be, for example, better or more diverse products, larger customer base, mergers or acquisitions, or otherwise.

Most human decisions are rational, implemented as projects and tasks servicing their purpose, driven by the institution's mission, values and vision statements. Their decisions are commonly, but not limited to, based on detailed studies, known facts and data, advanced technology, marketing research, among other things, with methods, techniques and tools in Management Science/Operations Research.

There is the part of *human decisions with hidden and malicious intent* leading to institution collapse which has been sporadically addressed in the literature, and it has not received a fair attention. It draws attention only when a corporate scandal or catastrophe occurs, especially where the losses and impact are incredibly huge, financially or otherwise. The different investigations on these situations (scandal, catastrophe, debacle, etc.) however have been specifically and separately addressed, from a particular aspect on a particular institution (Barings, Madoff, Enron, Lehman Brothers, etc.) to address one or more particular disciplines such as accounting, finance, ethics, management, etc., but not from an integrated perspective.

Recent solutions for collapse prevention such as Sarbanes-Oxley Act in 2002 and Dodd-Frank Act in 2010, and changes to regulating agencies have been proposed as direct responses to the problems, however they have been short of being fully effective. In fact, many other collapses followed.

Why the Embedded Decision Field and Different Approaches? There are five basic P's generated by the first P *People*: *Principle, Policy, Process, Practice,* and *Purpose*, commonly mentioned in business management and three P's observed in marketing *(Product, Price* and *Performance)*, all created, and carried out, by *People*. The 10th P (*Politics*) is added to the business and management domain, to include the impact on market, economy and systems such as social platforms and political systems which dramatically affect human life, work, thought and behavior. Note that Politics is considered as the 10th P, and also as a domain intimately linked to government and Economics.

Therefore, our proposed 10 P's as the overall framework. There are also eight sub-P's: *Personality* (*Philosophy*) of People, *Power* and *Profit* of Purpose, *Promise, Peril* and *Pressure* of Performance, and *Partiality* (or *Partisanship*) and *Propaganda* of Politics.

In brief, the (10 + 8) P's and sub-P's are examined in the Euclidean field using a decision timeline of decisions, activities and events (DAE) occurring in real life (Formulation 1). The field is expanded to the neuropsychological field to find the "why" when possible, as human behavior is exposed by the brain and mind of decision makers (Approach 2). The quantum field is on finding decision entanglement (Approach 3), Minkowski curved spacetime is on decision cause-effect (Approach 4), from a systemic approach (Approach 5). Thus, by using the embedded decision field we would have a better chance to early detect and early interfere (act upon) those human decisions with hidden and malicious intent.

Why Systemic Integrated Biologically-Inspired? Humans constitute the key organism of all components in the biological spectrum/hierarchy of von Bertalanffy-Boulding of the natural spectrum including particle, atom, molecule, protoplasm, cell, organism, population, community, ecosystem, biosphere, and transcendental system. Therefore, we consider general systems theory of von Bertalanffy. There is no other global scope that offers a wider view to understanding on human decisions from the particle level up to spacetime, to help find and extrapolate the behavior of any institution and the impact on all larger components: market and economy-politics.

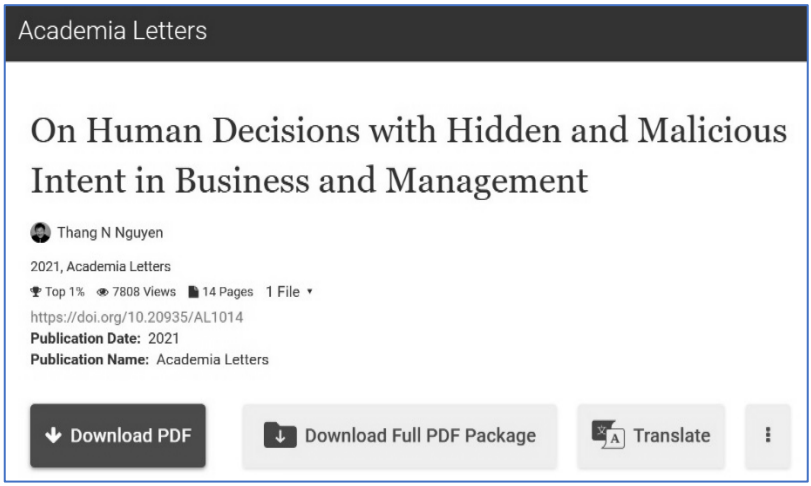
This biologically-inspired approach would allow us to see (1) similarities among components to develop analogy among them and analogical

reasoning and (2) unchanged properties among them for topological reasoning. The biological hierarchy suggests that we could try to see how one component relates to another via inheritance, generalization, specification, aggregation and complementarity for additional insights.

ACKNOWLEDGMENTS

We thank the editor team of Cambridge Scholars Publishing for their assistance, support, and patience, particularly Adam Rummens, Rebecca Gladders, Amanda Millar, Sophie Edminson and Courtney Dixon. We also would like to take this opportunity to express our thanks to Academia Letters (online journal) and to the initial 91 views from 30 countries within 3 days (June 23-25), with many encouraging comments and inputs on an early 14-page article accepted for publication in Academia Letters on Jun 23, 2021.

Between June 2021 and June 2024, the initial article flip-flops between top 1% and top 4%. In January 2024 it reaches 7,808 views from 130+ countries, and in June 2024, with 8,132 views and it does not stop there.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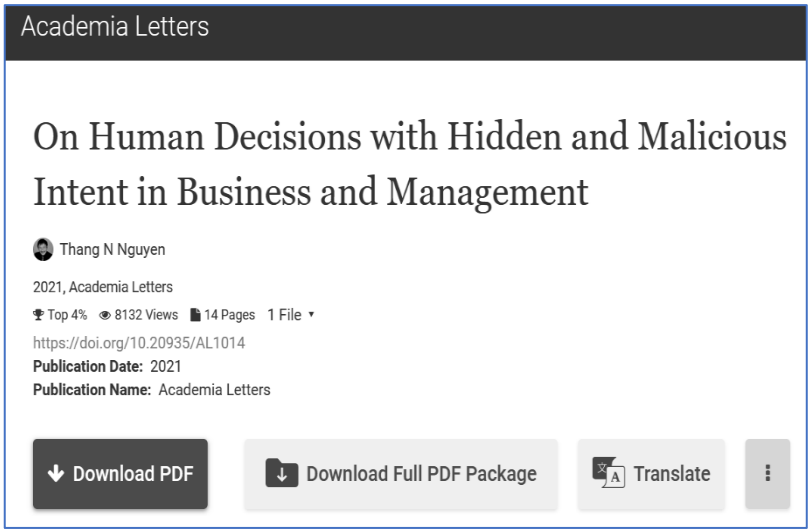
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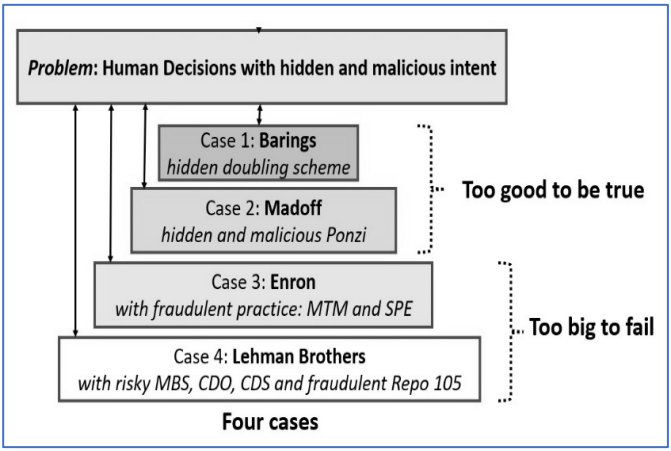
CHAPTER 1

LESSONS LEARNED DIFFERENTLY FROM PAST COLLAPSE CASES

Chapter 1 Overview

We revisit four representative corporate collapse cases, for lessons learned on *human decisions with hidden and malicious intent*. Our review is fact-based, relying on official reports by appointed investigators and many other sources.



Collapse cases.

The first two (Barings and Madoff) belong to the mythical category of "too good to be true", and the last two (Enron and Lehman Brothers) "too big to fail". In each case, we look at decisions, activities and events leading to an unavoidable collapse with focus on "why and how it falls" in a global decision space. We establish commonalities and differences among the four cases. We explore how to approach the problem of interest.

In the introductory section "*About the book: The what and the how*", we describe three formulations on human decisions with hidden and malicious intent. The *first* is the (10+8) P's and sub-P's classifying and characterizing all decisions we make or encounter in our daily business life, called *Euclidean decision space*, rather than the problem space. The *second* is to extend the conventional Euclidean space to include *neuropsychological considerations on decision makers* (since decisions occur in the human brain and mind). We further extend it to a fine-grained space as *quantum field* (since decision is made up of neurons and particles in the brain) for discovering decision entanglement and to a *coarse-grained Minkowski curved decision spacetime* (where decisions propagate across many human minds within a continuous space) for finding decision cause-effect. The *third* is our biologically-inspired approach to exploring analogy and homeomorphism among different components of a biological spectrum/hierarchy (*from particle, cell, organism (human), community, to ecosystem, transcendental system*) since human decisions are made by humans, that is its key component. Within the context of the three formulations, we review four selected collapse cases for lessons learned on human decisions with hidden and malicious intent in business and management.

Four Selected Cases for Review and Lessons Learned

We select four representative collapse cases of the last three decades. The cases are part of the top ten scandals of the world. Three of them (Madoff Investment Securities, Enron and Lehman Brothers) are listed in the top five of all time world finance and accounting frauds.

All key players in the above four collapse cases exercise hidden and/or malicious intent in their decisions. Each of the first two collapses, Barings Bank and Madoff Investment Securities, is caused by primarily one person: (1) Nick Leeson of Barings, with his fraudulent error account 88888 to accumulate losses totaling £827 million, and (2) Bernie Madoff of Madoff Investment Securities, with his hidden and malicious Ponzi scheme of some $65 billion loss in size.

The other two cases involve hidden and malicious executive decisions at the strategic level. In Enron, CEO Jeff Skilling and CFO Andrew Fastow, with approval of Chairman Ken Lay, practice unprecedented schemes of fraud using MTM (Mark to Market) accounting to inflate revenues and very complex SPE (Special Purpose Entity) to hide losses. CEO Dick Fuld of Lehman Brothers is the key executive who exercises Repo 105 (Repurchase agreement) when liquidity is too low with a very

high leverage ratio (earning/ (assets or equity)) due to its devalued MBS (Mortgage-Based Securities), risky CDO (Collateralized Debt Options) and toxic CDS (Credit Default Swaps). He reports Repo 105 as sales. Unlike other cases, Lehman Brothers's collapse is a major one of a series of near collapses preceding it (e.g. Bear Stearns, Fannie Mae, Freddie Mac) and following it (e.g. AIG) affecting financial market and other industries, as they cause the global financial crisis and economic meltdown 2008, labeled the Great Recession.

Why the Four Cases?

The four cases cover a period of more than three decades, from 1990-2008 Great Recession. We extend it to the period of 2008-2023 post-Great Recession, with some unprecedented ten years of zero interest rate (2008-2016 and 2020-2021) on their impact. The latter period leads to trillions of free monies by the Federal Reserve (FED) taking advantage of the fiat currency as a temporary decision on convertible currency by President Nixon in August 1971.

Each of the four cases are unique and special in its own right. The four cases cover different categories and are representative enough in our investigation. A lot has been documented and discussed about them over the last three decades but most previous studies and investigations, if not all, are looking at the cases in their problem-specific space. Note that two of them do lead to new laws, e.g. Sarbanes-Oxley Act or SOX in 2002 after Enron collapse in 2001, and Dodd-Frank Act in 2010 after Lehman Brothers collapse in 2008. In addition, new regulations and rules, major remedial measures in accounting, finance, ethics, banking, etc. follow each collapse.

Yet, new scandals occur and similar cases continue to be undetected until late. In fact, after Nick Leeson of Barings, there is Jerome Kervial of Societe Generale in 2008, similar to Leeson of Barings' case, then Elisabeth Holmes of Theranos in 2018 and recently Sam Bankman-Fried of FTX in 2022, somewhat similar to the Madoff case. First Republic Bank, Silicon Valley Bank, Silvergate Bank and Signature Bank collapse in 2023. It implies that we have not done enough. It shows the previous remedial measures are narrow or insufficient. This suggests that a different approach to the cases should be explored.

Too good to be true: Barings and Madoff Investment Advisory

Both Barings and Madoff Investment Securities collapse within days after frauds are known by (1) Leeson's runaway and (2) Madoff's confession to his family.

Case 1 (Barings): There are two key investigation reports: SIMEX report and Bank of England report in 1995 on Barings case. Appointed to BFS (Barings Futures Singapore) in July 1992, Nick Leeson runs BFS back office as a general manager (GM). Since September, he also conducts arbitrage activities as a novice trader between TSE (Tokyo Stock Exchange), OSE (Osaka Stock Exchange) and SIMEX (Singapore International Monetary Exchange) for actual clients (authorized), Barings bank itself (unauthorized) and fictitious clients (fraud), in a supposedly low-risk trading practice.

For over two and a half years, Leeson reports increasing profits to Barings each and every year. At the end of 1992, he reports a profit of £10 million, and earns himself a bonus of £150,000. He earns another huge bonus from a reported £105 million profit for 1993. At the end of 1994, he is named King of SIMEX. He is about to get a much higher bonus in February 1995 along with many other executives and professionals in Singapore and Barings London, from some £400 million profit reported for 1994.

At the beginning of 1995, an inquiry on a £115 million discrepancy in a specific account, is raised by SIMEX. For weeks, Leeson tries to avoid and/or delay all meeting requests by Barings management for explaining Barings trading positions. He disappears from Singapore with a fax to his superiors saying "*I am sorry*" on February 23, 1995. The next day, all the accumulated losses over two and a half years of Leeson's employment as GM and chief trader of BFS are fully discovered in a hidden error account called 88888, showing £2 million loss at end of 1992, £23 million loss at end of 1993, and £208 million loss at the end of 1994.

Barings bank with a history of 233 years goes from a profitable commercial bank to bankruptcy with £827 million total loss by February 1995. The bank collapses on February 26, 1995. This case is *too good to be tru*e.

Case 2 (Madoff Investment Securities): The main report on this case is the SEC (Securities and Exchange Commission) report on SEC failure to investigate Madoff Investment Securities. This is done after its collapse in Dec 2008. SEC is unresponsive despite multiple claims on Ponzi scheme previously submitted to SEC by Harry Markopolos, and others articles in the press, from 2000 to 2008.

Madoff Investment Advisory arm of Madoff Investment Securities consistently delivers a 10-12% average gain every year to its investors and in some cases 15-18% to others, despite the ups and downs of the market over more than two decades, which is a very long time. Madoff Investment

Securities collapses when major redemptions of some $7 billion total was requested as a result of subprime mortgage market downturn in 2008. One day after Madoff confesses to his family that he actually exercises the Ponzi scheme, one of his sons notifies FBI and SEC.

Madoff Investments Securities collapsed on December 11, 2008 with $65 billion of Ponzi money. Different from Baring's case which is about Leeson's *hidden* intent turning *fraudulent*, this case is definitely both *hidden* and *malicious* from the start, also being the largest Ponzi scheme. This is another *too good to be true* case.

Too big to fail: Enron and Lehman Brothers

Both Enron and Lehman Brothers have between 20,000 to 25,000 employees each, with capitals in the hundreds of billions. Both collapse within weeks after their losses reported initially in their quarterly statements and/or followed by subsequent corrections to prior years' gains.

Case 3 (Enron): William Powers, a member of Enron Board, together with two other Enron board members are tasked to investigate Enron collapse.

Enron successfully changes its business from gas provider to gas bank in the late 1980's. Enron uses a modified MTM accounting approved by SEC to report projected gains from contracts and projects in its statements as revenues.

To exploit MTM, Enron involves in multiple large industrial and technological projects and contracts around the world (electricity, pulp and paper, broadband, weather, etc.). Jeff Skilling, CEO of Enron and Andrew Fastow, CFO report projected revenues as income from these projects, as soon as the projects are signed causing its stock price to increase exponentially. Enron reaches over $100.7 billion in 2000 from $13.3 billion in 1996, some 750% growth. Enron also creates EnronOnline for fast trading activities around 1999-2000. For six years consecutively, from 1995-2000, Enron is named the most innovative American company by Fortune. Enron becomes one of the seven largest corporations in the US.

At the end of the third quarter in October 2001, however, Enron has to report some $619 million loss and $1.2 billion reduction in shareholder equity. A few weeks later, the report is followed by corrections made to the financial reports of prior years with additional losses. These cause a huge drop in Enron stock price from $90.75 to 26 cents. Enron faces SEC probe. Enron admits it inflates its income since 1997 using MTM. To off balance the losses, Andrew Fastow, CFO uses many of the 3000 complex SPE partnerships from JEDI in 1993 to the Raptors in 2001. Enron files

for chapter 11 on December 2, 2001. This collapse confirms the mythical *too big to fai*l.

Case 4 (Lehman Brothers): Anton Valukas, the examiner of Lehman Brothers filing for Chapter 11, produces a 2000+-page report on this case. Dick Fuld of Lehman Brothers, the longest running CEO of the fourth largest investment bank in the US, involves his institution in three areas of its business: mortgage origination, commercial lending and subprime loan market. Among them are the highly practiced MBS, CDO and CDS transactions in the market, with long-term investments financed by short-term loans. With declined values of these transactions starting 2007 due to subprime mortgage burst, Fuld uses Repo 105 to take advantage of the loop hole in Statement 140 established by Finance Accounting Standards Board (FASB). Fuld hides huge losses as he is unable to sustain due to lack of liquidity, leading to decreased confidence from counterparties.

Lehman Brothers, with some $619 billion in debts while being stuck with the liquidity of some $639 billion in assets. This happens after Sarbanes-Oxley Act (SOX) of 2002, ironically. Lehman Brothers, the huge subprime market leader, succumbs to bankruptcy in September 15, 2008. Lehman Brothers collapse along with other near collapses right before and after it, greatly impacts the market and economy. This is another *too big to fail*.

Case 1: Nicholas Leeson of Barings Bank, *Hidden Intent* with Error Account 88888 and Martingale Game

The Barings collapse prompts two official and independent reports. One from the Board of Banking Supervision, UK, in July 1995, and the other from SIMEX in October 1995. The SIMEX report is authorized by Singapore's Finance Ministry and conducted by Price Waterhouse. The two reports are independent in their findings as claimed. The first report of Bank of England is perceived more as an effort to making sense out of the Barings Bankruptcy, as A.D. Brown puts it. The SIMEX report exposes Bank of England over its attempt to hinder investigations on some senior executives. SIMEX accuses Barings management of *"institutional incompetence*" and a *"total failure of internal controls*". In fact, it is recognized by SIMEX and others that Barings Groups management is "*grossly negligent, or willfully blind and reckless to the truth*". Barings' management actually knows primarily what's going on but chooses not to take any action, otherwise Barings' collapse could have been avoided. Nevertheless, SIMEX itself, fails to find early Leeson's fraud.

Barings Case Revisited

Our question is "*Why Leeson's hidden and malicious intent was not acknowledged early enough to avoid the collapse*?" The answer is surprising.

As stated by Leeson himself, Barings management is all about profit. The main cause (among others) of Barings' collapse is simple: one *man*, Nicholas Leeson, with one *tool*, and the error account 88888 used for fraudulent activities.

The *man*, Leeson, is a general manager (GM) and concurrently a floor trader of Barings Futures Singapore (BFS), at a remote location from Barings headquarters in London. Leeson does derivatives arbitrage, a low-risk trading strategy with cap explicitly set by Barings ALCO (Assets and Liabilities Commission).

The *tool* is an error account commonly setup by banking settlement back-office operations for reconciliation of daily trading errors. Leeson uses it as the second error account from the start. Within two and a half years, Leeson fakes revenues and profits in P&L (Profit and Loss) statements while hiding losses in this error account. Leeson discusses in his book "Rogue Trader" how he does it.

Over less than three months between the end of 1994 and the first two months of 1995, Leeson exercises the doubling (Martingale) scheme out of desperation to remedy the losses. He brings the bank to its knees with £827K in debt, about twice the bank's assets. It is bought by ING for £1. Leeson knows he causes a huge financial loss as he runs away to Malaysia in late February 1995, when the bank trading position needs to be explained to his top management. But he is surprised when he sees the headline of the collapse on the news stand while in Malaysia, that he actually causes the bank to collapse, as he does not pay attention to how much the bank is worth. It shows he is still an inexperienced senior manager as well as a rogue trader, only focusing in his success.

Barings Case's Decision, Activity, Event (DAE) Timeline

We show a timeline, commonly used in reviewing past decisions, activities and events for identifying meaningful symptoms and anomalies but we illustrate them differently for our study purpose. We show Barings' DAE in a table. Entries in the first column are "factual and observed" DAE while those in the second column (in **bold** *italic* and on gray background) are "*hidden or ignored*" with the information discovered and gathered after the collapse.

Note that the construction and information in the table are obtained primarily from SIMEX inspector reports and Bank of England report,

added with other published sources. This timeline is for illustrative purposes only, and is not intended to be complete. Entries in bold in either column are red flags.

Table 1: **Barings DAE.**

Factual and Observed	***Hidden or Ignored (Known after the Collapse)***
1762: Barings Bank founded **September 1986**: Baring Futures Singapore is incorporated **July 1989**: Nick Leeson is hired by Baring Securities London BSL **Early 1990:** Leeson successfully sorts through £100 million worth of the contracts in Jakarta, Indonesia **September 1991:** Leeson investigates successfully an apparent fraud in Barings' derivatives trading **February 1992:** Barings obtains clearing membership with SIMEX **March 1992**: (1) First warning: **James Bax warns BSL on Leeson's potential assignment in Singapore** **April 1992**: Leeson moves to Baring Futures Singapore (BFS), to run the back office of Barings' derivatives operation at SIMEX	
July 1992: A new trader's mistake results in initial loss of £20K. Simon Jones asks Leeson to report and fire the trader	*Hidden:* ***Error account 88888 is created but excluded from transaction reporting. Leeson uses it to hide the £20K loss.*** ***Jones does not follow up this incident***
September 1992: (2) **Leeson passes the SIMEX trading exam despite a lie (the same lie as in London) in his application**	*Hidden:* ***Leeson fails before in a trading license application to City of London due to a lie in the application. This information is withheld by Barings London***
(3) **Deloitte and Touche, outgoing auditor, raises discrepancies in audit report**	***Leeson forges confirmation***
December 1992: At year end, Leeson reports profit-earnings to Barings of some £10 million. He is rewarded with a £150,000 bonus in addition to his £50,000 salary	*Hidden: Leeson accumulates losses in Account 88888*. ***The 1992 loss is £2 million***
March 1993: Barings' senior management is restructured with CEO Christopher Heath replaced by Peter Norris	

June 1993: Leeson is appointed as head of trades for Barings in Singapore while also maintaining responsibility of back-office, making the hiding of losses much easier		
	At end of 1993, error account records a loss of £23 million	
	July 1994: *Hidden: Leeson accrues massive losses on Nikkei futures.* ***An audit at the end of Summer 1994 officially exposes Leeson dual status but it is ignored***	
December 1994**:** Officially, Leeson reports profit	*Hidden:* ***Trading losses in 1994 of £208 million recorded in the error account 88888***	
January 1995: Nikkei 225 plunges due to the Kobe earthquake. (4) **An official audit notices a discrepancy in Leeson's accounting report**		*Hidden: Leeson exercises Martingale scheme.* ***Leeson forges documents***
January-February, 1995: (5) **Leeson makes large margin payment requests daily**	***Barings FPG continues to honor all increasing margin payment requests while being unable to get justification***	
Feb 23, 1995: Leeson sends memorandum saying "*I am sorry*". Leeson flees to Malaysia with his wife		
February 24, 1995: Discovery of 88888 account by Barings team. **February 26, 1995**: Barings is forced into bankruptcy		

The left column shows five warning or red flags in increasing criticality, all ignored and/or not followed up by Barings authority. The right column shows facts that were known only after the collapse, but they were indicative on what management should and should not have done. As we observe from the DAE table, warnings or red flags (five of them shown in bold on the left column) do occur. However, Barings management ignores all of them. It clearly indicates there is no proper oversight, control, check and balance.

Case Revisited from the 10 Ps Perspective

We revisit the case by looking at the 10 Ps of the (10+8) P's and sub-P's framework (Figure 1).

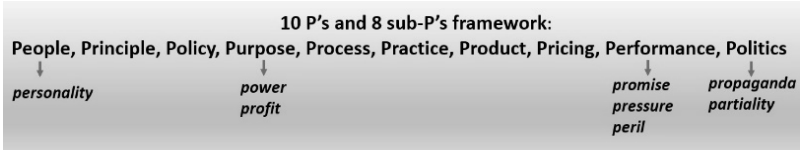


Figure 1: (10+8) P's and sub-P's.

People (and Organization). We include corporate *organization* in examining the people who are involved in the collapse, because after all, people make up an organization, which is normally hierarchical, and employees report to one boss. In Barings case, Barings uses a matrix organization since Peter Norris, and it becomes easier for Leeson to bypass certain reporting tasks (he has multiple bosses). In fact, he is allowed to report directly to London against James Bax's warning. It also reveals that certain authorities within Barings' headquarters do not fulfil their responsibility properly.

What happened. In 1989, Leeson joined the Bank Securities BSL, UK (Figure 2). In 1990, Leeson successfully sorted through a huge mess of "unsettled" back-office contracts worth around £100 million in Jakarta, Indonesia. In 1991, he was called back to London to investigate a derivative trading fraud, which he also completed with success.

Both accomplishments gained him a unique recognition from among the top executives and professionals of Barings. While in London, Leeson applied for trade license with SFA (Securities and Futures Authority) but his application was returned to Barings as he lied about an unpaid debt.

In April 1992, Leeson, then 25-years old, was promoted by Ian Martin, COO of BSL. He started his position to lead the operations of Barings Futures Singapore (BFS). One month before, James Bax, Head of Singapore office, had expressed his concern on this assignment.

Upon arrival in Singapore, Leeson quickly applied for trader license to SIMEX under the pretext to have access to trading room for assisting clients. His application got approved in August 1992 despite the same false statement in the application he submitted to SFA in London. Probably SIMEX was unable to do a full background check of Leeson while he was in the UK. Thus, Leeson was able to perform back-office duties on arbitrage between TSE, OSE and SIMEX as well as acting as floor trader, exercising a true conflict of interest.

BSL was later merged with Barings Securities London (BSLL) to become Barings Investment Bank (BIB) around the end of 1993/beginning of 1994 (Figure 2). From the organization, administration, management and control aspect, Barings Futures in South Asia was organized by

country: Hong Kong, Tokyo, Singapore, Jakarta, etc. This allowed a matrix management to be exercised (operations, funding, etc.). At BFS in Singapore Simon Jones was Leeson's boss. But Leeson also reported to Tokyo Office as well as to the main office in London. Leeson's line of reporting was blurry.

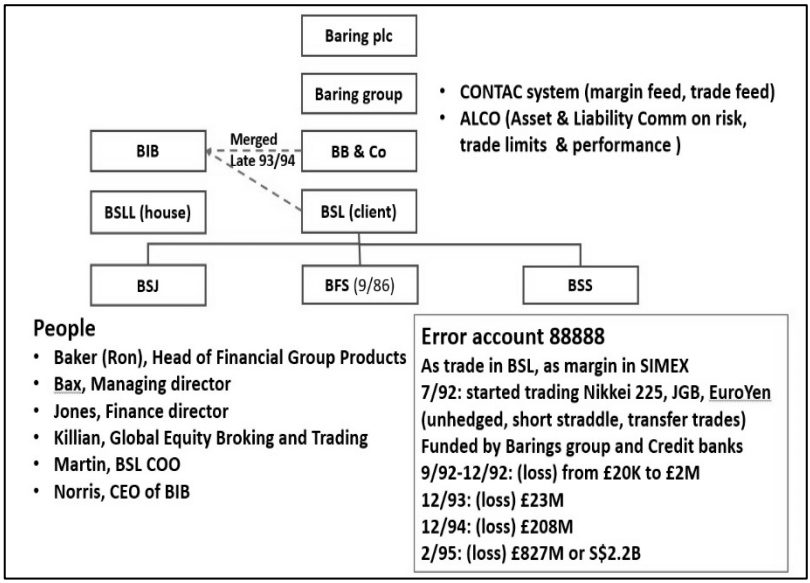


Figure 2: Barings' people and organization.

About Leeson. This case is the simplest one of the four cases after all the facts are collected and examined. Leeson is simply ambitious and work hard towards his goal: success, as he admits later. It is told that while all BFS employees in Singapore enjoy social events at clubs, for instance, Leeson tries to win business for Barings.

All Leeson wants is success, as observed. He does not plan to be a bad person. He does lie, however, on his trading application twice: to SFA in London and to SIMEX in Singapore, because he just wants to be in trading business after his unsuccessful days with Morgan Stanley London before Barings. As opportunity presents itself, he exercises hidden intent. For example, when creating a new error account called 88888 for internal use as commonly practiced in bank settlement activities although BFS already has a previous error account. He also registers it as a client account for

trading with SIMEX. Why two error accounts? Leeson uses this second error account to get margin funding from BIB which he claims on behalf of clients.

He first misuses the error account when his local boss, Simon Jones, lets him handle the loss of £20K caused by a mistake on the trading floor by Kim Wong, a new trader. Instead of bringing the error to proper authority in Japan and terminating the new trader as instructed by Simon, he uses the error account 88888 to hide this loss, and subsequently, he uses it for all other losses. When he needs to show profit, he manipulates balance sheet, P&L and income statements. When internal or external audit shows discrepancies, he forges documents, or blames the computer for error and/or just avoids confronting the officials who question Barings position. The losses hidden in the account 88888 help Leeson show profits for three consecutive years, 1992 to 1994, which earned him the nickname King of SIMEX, and the bonus at the end of each year: 1992 and 1993. Leeson is about to earn £400K bonus for 1994. When the loss is so huge, he plays a very high-risk Martingale (doubling) scheme in early January 1995, with the hope to wipe out the loss if the bet comes his way. His intuition and instinct betray him in the trading bet. At the end, he runs away.

About other people. During the period of July 1992 to end of 1994, Barings leadership and top management team do not take action against some warnings that have been raised early, the first one by James Bax in March 1992. Management is not even concerned how huge and constantly increasing profits at the end of 1992, 1993 and 1994 are reached and has no clues that there have been losses starting with £2 million at the end of 1992 reaching £208 million at the end of 1994. Looking at the reported profits, even Peter Baring, Barings Chairman says "*it is not difficult to make huge money with arbitrage activities*". The reported profits manipulated in P&L yield huge bonuses to Leeson himself and other executives and professionals.

Principle. In Barings case, Leeson just does not care about any corporate principles as stated in the bank mission and values, except maybe the Barings' five commandments on clients. He uses the latter to attract new clients and/or please current ones in social events.

Policy. The arbitrage responsibility is supposed not to involve Barings' money with caps imposed on client accounts while trading Nikkei 225 Index, EuroYen, JDP and others as spelled out in Barings' ALCO (Figure 2, top right). Leeson violates the cap policy and uses Barings as a client, unauthorized. There are other policies being violated. One obvious policy is the separation of front office (trading floor) and back office