Behavioural patterns in rogue trading: Analysing the cases of Nick Leeson, Jérôme Kerviel, and Kweku Adoboli in light of the control balance theory

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Agenda

1 _ Rogue Trading: Historic Overview

Institution affected by unauthorized trading	Country	Rogue Trader Name(s)	Age (when detected)	Year (when detected)	Time to detect	Total Loss	Market Activity	Sanctions		
								Prison	Fine against	
									Trader(s)	Institution
UBS	UK	Thomas Hayes	32	2012	6y 7m	N/A	Libor (London Interbank Offered Rate) Manipulation	14y	£ 878k	no
JPMorgan Chase & Co.	UK	Achilles Macris	50	2012	3m	$ 6.2bn	Credit Default Swaps (CDS)	no	£ 793k	$ 1.02bn
		Javier Martin-Artajo	48					N/A	N/A	
		Bruno Iksil	N/A					no	no	
		Julien Grout	34					N/A		
UBS	UK	Kweku Adoboli	31	2011	2y 11m	$ 2.3bn	S&P 500, DAX, and Euro-Stoxx Futures	7y (of which 3y 6m were suspended)	no	$ 48m
Groupe Caisee d'Epargne	France	Boris Picano-Nacci	34	2008	7m	$ 980.3m / € 751m	Equity Derivatives	2y (suspended)	€ 315m	no
Société Générale	France	Jérôme Kerviel	31	2008	2y 6m	$ 6.9bn / € 4.9bn	European Stock Index Futures	5y (of which 2y were suspended)	full restitution of € 4.9bn (rejected in 2014)	€ 4m
Amaranth Advisors Hedge Fund	U.S.	Brian Hunter	31	2006	1y	$ 6.6bn	Natural Gas Futures	no	$ 30m	no
China Aviation Oil	Singapore	Chen Jiulin	44	2005	1y 2m	$ 550m	Jet Fuel Futures	4y 3m	S$ 335k	no
National Australia Bank	Australia	David Bullen	32	2004	2m	$ 187m / A$ 360m	Foreign Exchange Options	3y 8m	no	no
		Luke Duffy	34					2y 5m	no	no
		Vince Ficarra	25					2y 4m	no	no
		Gianni Gray	34					1y 4m	no	no
Allied Irish Banks	U.S.	John Rusnak	37	2002	3y 7m	$ 691m	Foreign Exchange Options	7y 6m	$ 1m (fine) + $ 691m (restitution)	no
Sumitomo Corporation	Japan	Yasuo Hamanaka	46	1996	10y	$ 2.6bn	Copper	8y	no	no

1 _ Rogue Trading: Historic Overview (cont.)

Institution affected by unauthorized trading	Country	Rogue Trader Name(s)	Age (when de-tected)	Year (when de-tected)	Time to detect	Total Loss	Market Activity	Sanctions		
								Prison	Fine against	
									Trader(s)	Institution
Morgan Grenfell	U.S.	Peter Young	38	1996	1y 3m	£ 220m	Bonds	no (found mentally unfit to withstand trial)	no	£ 2m (highest fine until then in "the City")
Barings Bank	UK	Nick Leeson	28	1995	2y 6m	$ 1.3bn / £ 827m	Nikkei Index Futures	6y 6m	no	no
Daiwa Bank's	Japan / U.S.	Toshidhie Iguchi	44	1995	12y	$ 1.1bn	U.S. Treasury Bonds	4y	no	no
Codelco	Chile	Juan Pablo Davilla	34	1994	5m	$ 281m	Copper	8y	no	no
Kidder Peabody	U.S.	Joe Jett	36	1994	3y 4m	$ 74.6m	U.S. Treasury Bonds	no	$ 8.4m	no
Merrill Lynch	U.S.	Howard Rubin	36	1987	1m	$ 377m	Mortgage Securities	no	$ 20.4k	no
Drysdale Government Securities Corporation	U.S.	David Heuwetter	40	1982	3m	$ 270m	U.S. Treasury Bonds	3y + 4y of probation; 400h of community service	no	no

Source: Hornuf and Haas (2014), Skyrm (2014), and Wexler (2010); enriched with own research.

- ◆ Global nature & reoccurring phenomenon rogue trading; appearance in various markets and jurisdictions

- ◆ Re-occurring typology/profile: Average rogue trader is **male**, in its **mid-thirties**, **un-detected** for more than **2 and a half years**, creates a **financial damage** of more than **$ 1.5bn**, and is **sentenced to jail** for about **5 years**

2 _ Tittle's Control Balance Theory (CBT)

◆ Integrated criminological theory, drawing elements from learning, anomie, conflict, social control, labelling, utilitarian, and routine activities theories

◆ Equipped with interdisciplinary components, CBT is designed to explain and account for all types of deviant behaviour but also for conforming behaviour (Piquero 2010, p. 957)

◆ Initial formulation in 1995 (reply to critique in 1997 and 1999) and major revision in 2004; empirically tested in different domains (e.g. sex offenders, gender differences, policy deviance, rational choice implications, street youth crime/drug use, computer deviance)

◆ Key theory paradigms:

(1) The amount of control to which an individual is subjected to relative to the amount of control an individual can exercise determines the probability of deviance occurring as well as the type of deviance that is likely to occur (Tittle 1995, p. 135)

(2) Tittle interprets deviant behaviour as a device or manoeuvre helping the individual to escape from deficits and extending surpluses of control

(3) **Motivation** triggered by **provocation** in intersection and favourable alliance with the variables **control ratio** (in an **unbalanced** status), **opportunity**, **constraint**, and **self-control** may lead to deviance

2 _ Tittle's Control Balance Theory (CBT) (cont.)

Control ratio	• **Balanced control ratio** leads to conformity/non-deviant behaviour • <u>**Unbalanced control ratio**</u> predisposes an individual to deviant behaviour – two status (1) **control surplus** and (2) **control deficit** • Push for corrective action(s) that is most effective for **rebalancing control**
Predisposition towards deviant motivation	• **Desire for autonomy** is almost universal for human beings; only slight variations from individual to individual • Trying to **escape from control** over oneself & **exercising more control** than one is experiencing
Provocation	• Presence of **certain stimuli** or **provoking parameters**, e.g. external events, structural realities, and/or control impingement
Motivation	• Triggered by provocation; **draws attention to control imbalances**
Opportunity	• **Suitable targets**, **situational circumstances**, **physical realities** • Important: Opportunity frequency and magnitude • **Opportunity seeker** vs. **opportunity taker** (Weisburd et al. 2001)
Constraint	• **Seriousness**: Potential magnitude of restraining responses or controlling reactions from others, i.e. counter control or (social) sanctions • **Situational risk**: Variable of **detection risk** and **condemnation risk**
Self-control	• CBT assumes, acting individuals are **self-regulated** and **non-impulsive** • Provocations create desire for (immediate) action, prevented or not by self-control; linkage to **crisis responder** (Weisburd et al. 2001)

3 _ The Rogue Traders Leeson, Kerviel, and Adoboli

	Nick Leeson at Barings Bank	Jérôme Kerviel at Société Générale	Kweku Adoboli at UBS
Education	High school diploma, followed by joining Coutts & Co, Morgan Stanley, and finally Barings Securities	Decent degree at secondary university; straight to Société Générale respectively UBS after university	
Background	Former trade support/control; knowledge of back office process and controls key to fraud		
Motive	No personal gain except bonus		
Age (when detected)	28	31	31
Year (when detected)	1995	2008	2011
Time to detect	2y 6m	2y 6m	2y 11m
Total Loss	$ 1.3bn / GBP 827m	$ 6.9bn / € 4.9bn	$ 2.3bn
Market Activity	Nikkei Index Futures	European Stock Index Futures	S&P 500, DAX, and Euro-Stoxx Futures
Imprisonment	6y 6m	5y of which 2y were suspended	7y of which 3y 6m were suspended
Fine against Trader	-	Full restitution of € 4.9bn (rejected in 2014)	-
Fine against Institution	-	€ 4m	$ 48m

3 _ Nicholas ("Nick") Leeson at Barings Bank

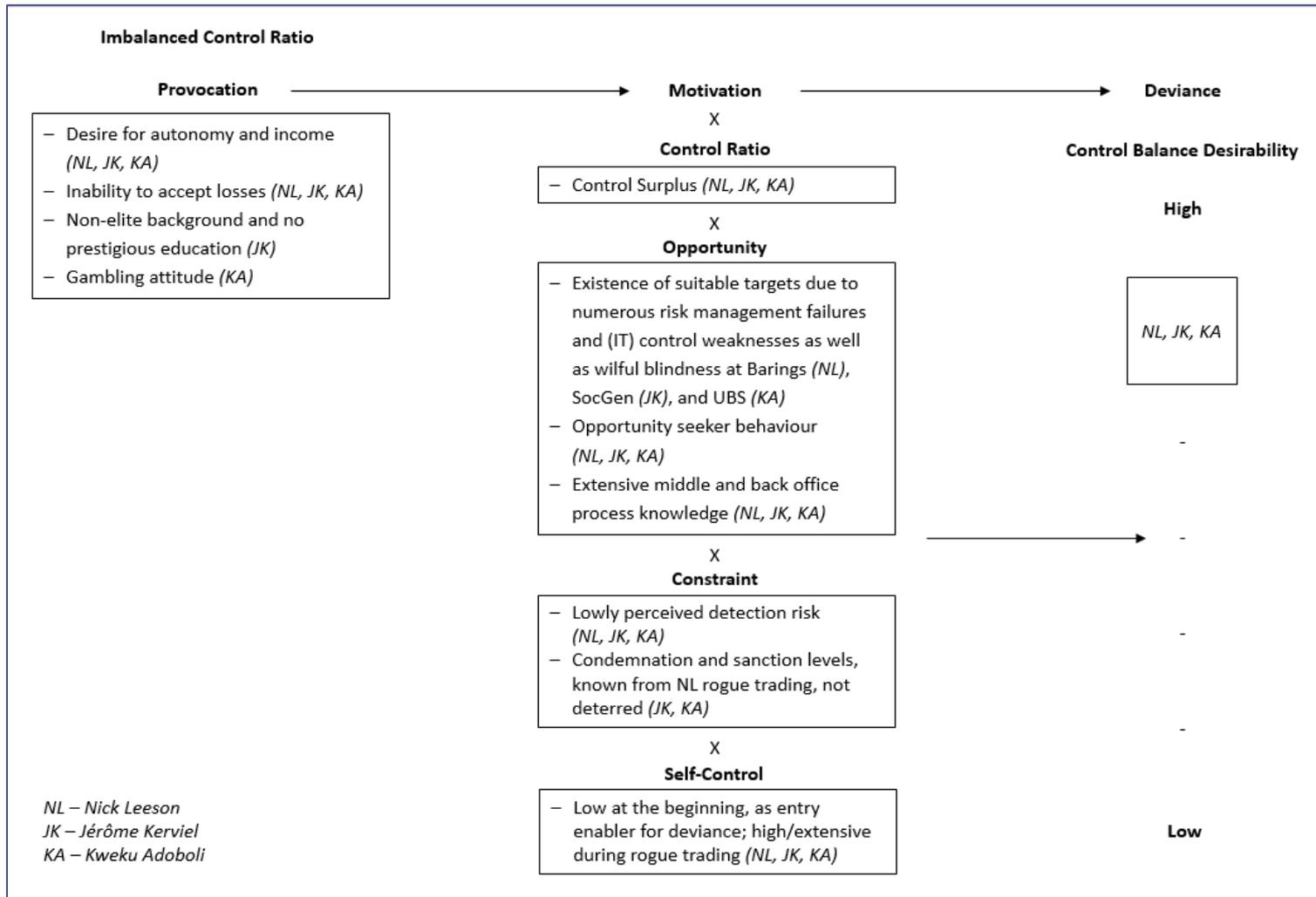| Modus Operandi	Risk Management Failures and Control Weaknesses	Early Warning Signals
• Switching trading strategy (Leeson took buy and sell orders for Nikkei index futures from Barings' clients to exploit price gaps between SIMEX and OSE)	• Lack of supervision and no segregation of duties	• Disregarding external warning signals from other banks and SIMEX
• Usage of an 'error' account (88888): Almost 5,000 hidden contracts per end of Jan. 1995 – increase to 61,000 end of Feb. 1995	• Investment performance and risk measures (misleading VaR; deceptive Sharpe Ratio)	• Inadequate follow up on Internal Audit findings on segregation of duties
	• Barings' financial reporting systems ('First Futures' in London and 'CONTACT' in Singapore)	• Leeson's financial misdemeanours, i.e. trader license rejection in London due to unpaid debts
• Trade price manipulation (excessive option selling)	• Insufficient understanding/ challenge by back office	• Trading strategy vs. disclosed profitability
• Unauthorized use of client's margin accounts	• Controls failed to keep pace with business growth of Barings in Singapore	• 'Star trader' status

3 _ Jérôme Kerviel at Société Générale

Modus Operandi	Risk Management Failures and Control Weaknesses	Early Warning Signals
• Recording fictitious trades, with significant offset (value date considerably later than transaction date) and cancellation before value date (947 trans-actions) • Recording pairs of fictitious transactions (115 trans-actions) • Recording of 9 intra-month provision flows ('flux pro'), i.e. modelling bias to adjust unauthorized positions; biggest one of € 1.49bn early Jan. 2008 via JK's trading assistant	• Ineffective control systems (fragmentation of controls, heavy reliance on manual processing, lack of controls to identify rogue trading) • Control weaknesses, identi-fied by Internal Audit but not remediated • Staff risk, i.e. inexperience of Kerviel's manager and lack of experience and seniority in back/middle office teams • Available control personnel vs. transaction volume growth in equities division	• JK's level of earnings: 60% of the entire desk (consisting of 8 traders); brokerage commission: 30% of JK's official earnings • EUREX questioning (twice via official inquiry) • Cash flow monitoring of € 1.3bn end of Jan. 2007 • Accounting irregularities and discrepancies • Limit (€ 125m) has been breached by JK by € 10m • No vacation taking

3 _ Kweku Adoboli at UBS

| Modus Operandi	Risk Management Failures and Control Weaknesses	Early Warning Signals
• Booking of fictitious futures and Exchange Traded Funds trades with deferred settlement dates (& cancel-lation before settlement) • Late booking of genuine external futures trades into front office risk systems to misreport risk exposure and P&L • Profit smoothing via so-called umbrella account (reserve/wash account) – which was against UBS' policy to report P&L when earned	• Mismanaged transfer of the Exchange Traded Funds desk; London desk supervisor was based in NY • Inadequate trader man-dates and not formally documented risk limits • Insufficient understanding/ challenge by middle office • Ineffective operational risk framework, i.e. review of SocGen's rogue trader – no remediation of identified findings/weaknesses • Ineffective control systems	• Trading mandate breaches (1) & limit breaches (4) • Increase in proprietary trading revenues ($ 11.7m for FY 2010 to $ 15.9m in Q1 and $ 47.8m in Q2 11) • Cancel, amended, and late booked trades ('C/A/L'), generating P&L of $ 0.5bn, signed off w/o investigation • Unauthorized P&L adjust-ments (one of € 1bn) and reconciliation breaks (e.g. CHF 209m in Aug. 2011 due to misbooked trades)

4 _ Applying CBT

Imbalanced Control Ratio

Provocation → **Motivation**
X
Control Ratio

- Desire for autonomy and income (NL, JK, KA)
- Inability to accept losses (NL, JK, KA)
- Non-elite background and no prestigious education (JK)
- Gambling attitude (KA)

Control Ratio
- Control Surplus (NL, JK, KA)

X
Opportunity
- Existence of suitable targets due to numerous risk management failures and (IT) control weaknesses as well as wilful blindness at Barings (NL), SocGen (JK), and UBS (KA)
- Opportunity seeker behaviour (NL, JK, KA)
- Extensive middle and back office process knowledge (NL, JK, KA)

X
Constraint
- Lowly perceived detection risk (NL, JK, KA)
- Condemnation and sanction levels, known from NL rogue trading, not deterred (JK, KA)

X
Self-Control
- Low at the beginning, as entry enabler for deviance; high/extensive during rogue trading (NL, JK, KA)

→ **Deviance**

Control Balance Desirability

High

NL, JK, KA

-

-

-

-

Low

NL – Nick Leeson
JK – Jérôme Kerviel
KA – Kweku Adoboli

Source: Own representation based on Tittle (2004, p. 419).

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4 _ Applying CBT (cont.)

- Primarily **control surplus** (rather deficits) relate to exploitative acts in the **corporate context**, i.e. white collar and corporate crime

- (Rogue) traders in control surplus stage are highly motivated to **extent** their **control surplus** – generating **shifts of control**

- Acting is mostly combined with **reckless behaviour**; supportive Tittle (1995, pp. 188, 191) ⇨ the freer acting individuals are from control, the less appreciation they have for the condition of others

- Rogue traders are equipped with **excessive self-confidence**, **overconfidence** as behavioural anomalies and a **perception bias** as **stars**, all influencing **self-control**

- Academic support for **linkage** between **illusions of control** and **poor risk management/analysis** (Fenton-O'Creevy et al. 2003) as well as **overconfidence** and **toxic behaviour** (Housman and Minor 2015)

5 _ Conclusions

- CBT provides a **dynamic causal model** – a complex interplay of multiple variables – centred around the **desire for control** ⇨ new construct to better understand corporate workplace dynamics

- Precise prediction of deviant behaviour, like rogue trading, to be further evaluated; **accurate quantification of control-experienced as well as control-exercised measures is a challenge**

- **Limitations in changing variables** differing between individuals or groups, the course of life, and from situation to situation; CBT would also fail in case of a **crisis responder**

- Each control surplus of a rogue trader needs to be interpreted as co-existent with a **control deficit** of the (employing) organization ⇨ **trade(r) behaviour control systems** & **performance (outlier) monitoring to detect false stars**

- **Organization of corrupt individuals** vs. **corrupt organizations** (Pinto et al. 2008) respectively **collusive rogue trading (CRT)** (Rafeld et al. 2017b) ⇨ London Whale Event at J.P. Morgan and LIBOR manipulation
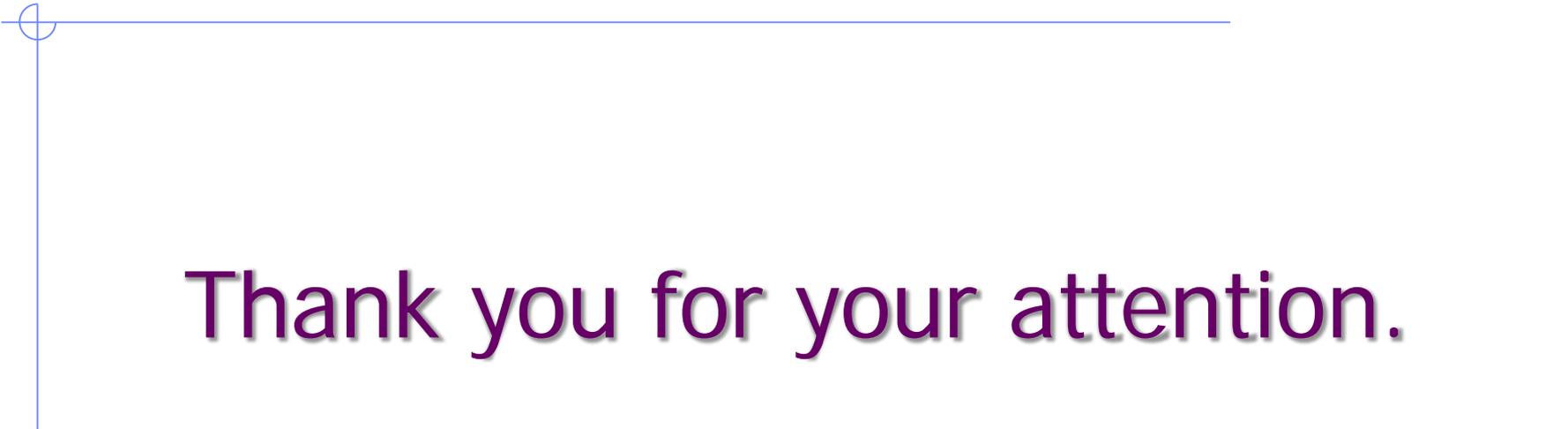
Thank you for your attention.

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