Psychology of Fraud

Toby Groves
Challenging our Assumptions

- Are you more likely to be convicted of a crime if one of your parents have been convicted of a crime—even if you never met them?
- Can someone be diagnosed as a psychopath?
- Do our emotions cause us to be less rational?
- Can behavioral profiling help us stop crime before it happens?
- Psychopaths are responsible for most white collar crime  T/F
- Experts can usually detect when someone is deceptive  T/F
- Cheating increases and decreases relative to the amount that can be stolen  T/F
- Moral decisions are stable  T/F
- You make decisions after weighing options, logically and consciously  T/F

(Beaman et al. 1979; Diener et al., 1976)
Neurocriminology

The Biological Link to Crime

Twin and adoption studies-General support for hereditary basis for crime

• Landmark Study-Mednick (1984)
  • 14,427 Non-familial adoptions analyzed

• Results:
  • Biological and adoptive parents with no convictions= 13.5% of children had convictions
  • Adoptive have convictions/Biological do not=14.7% of children had convictions
  • Biological have convictions/Adoptive do not=20% of children had convictions
  • Both Biological and Adoptive have convictions=24.5% of children had convictions

Neurocriminology
The Biological Link to Crime

Significant findings

• Amygdala 18% smaller in group considered psychopaths
  • Believed to be genetic susceptibility coupled with environmental triggers
  • Monoamine Oxidase A (Enzyme) combined with early child abuse associated with smaller amygdala volume (emotional center of brain)

• Brain plasticity
  • Early development can have profound influences on brain activity

Psychopathy

• Not a diagnosable mental disorder per the American Psychiatric Association

• Psychopathology-Science of disease of the human mind

• A Psychopathic Personality is known by the following traits:
  • Amoral and anti-social behavior
  • Inability to develop meaningful/lasting relationships
  • Extreme egocentricity
  • Absence of empathy “Emotionally Deaf”

• Moral decision making elicits different neural responses in psychopathic individuals

• Most accepted test for Psychopathy is the Psychopathy Checklist (Dr. Robert Hare)
Common Steps of a Psychopath in an Organization

• Organizational Entry (Charming the interviewer)
• Assessment (Gauging utility of organizational members, establishing a network, charm people in power)
• Manipulation (Spread disinformation to disparage others and enhance own image)
• Confrontation (Abandon pawns that are no longer useful)
• Ascension (Reach upper echelon at company and abandon those who facilitated his rise to power)

(Ramamoorti, 2008)
Behavioral Profiling

• FBI Behavioral Analysis Unit (BAU)/ White Collar Crime

• Focus on:
  • Developing behavioral profiles based by comparing details of the crime with behavioral details of the offender
  • “investigation phase” –after a crime has occurred
  • Recognition of people likely to cooperate/act as informants
  • Conflicting assessments as to effectiveness
Behavioral Profiling

Why not use profiling before a crime occurs?
• FBI uses known data from a crime to draw correlations with past events and infer characteristics
  • This is much different than inferring data for a crime that hasn’t occurred and for which details are unavailable

• Even for experts, predicting behavior is statistically little better than chance
Emotional Need for Certainty

- Search for level of certainty that doesn’t exist
- We subconsciously assign tremendous weight to our assumed outcomes and automatic character assessments
  - This assessment causes profound biases our perceptions
  - Colors our judgment
  - Results in automatic assumptions and predictions
  - Causes subliminal susceptibility to seek subliminal information

(Dan Ariely, Duke University)
Uncertainty and the Nature of Risk

Relative vs. Absolute Risk

- U.K. sends out 190,000 letters to general practitioners warning that third-generation oral contraceptives increased likelihood of potentially life threatening blood clots by twofold (100%) relative risk
  - Great anxiety resulted in an estimated 13,000 additional abortions as well as and additional 13,000 births the following year in England and Whales (800 more conceptions among girls younger than 16).
    - Second generation risk=1 in 7,000 absolute risk
    - Third generation risk= 2 in 7,000 absolute risk
    - Increase in risk=1 in 7,000

Uncertainty and the Nature of Risk

Relative vs. Absolute Risk

• Hormone Replacement Therapy
  “has been proven to protect women from colorectal cancer (by up to more than 50 percent)” while breast cancer “may possibly increase by 0.6 percent (six in 1,000)”.
• Research showed the relative 50% benefit corresponded to an absolute number of less than 6 in 1,000-meaning that HRT causes more cancer than it prevents.

Study: Auditor Prioritization

Fundamental Attribution Error - A cognitive bias of over emphasizing personality characteristics and under-emphasizing situational awareness.

Apostelou (2001); Wilks and Zimbelman (2004)
Sticky First Impressions

<table>
<thead>
<tr>
<th>Trait being judged</th>
<th>.10 sec</th>
<th>1 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trustworthy</td>
<td>.73</td>
<td>.74</td>
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<tr>
<td>Competent</td>
<td>.52</td>
<td>.59</td>
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<tr>
<td>Aggressive</td>
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<td>.59</td>
</tr>
<tr>
<td>Likable</td>
<td>.59</td>
<td>.63</td>
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</table>

Unlimited exposure times were highly correlated with briefest exposure times

Ekman & O'Sullivan (1991)
## Distinguishing Truth from Deception

<table>
<thead>
<tr>
<th>Group</th>
<th>Accuracy Rate (%)</th>
</tr>
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<tbody>
<tr>
<td>College students</td>
<td>52.82</td>
</tr>
<tr>
<td>CIA, FBI, and military</td>
<td>55.67</td>
</tr>
<tr>
<td>Police investigators</td>
<td>55.79</td>
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<tr>
<td>Trial judges</td>
<td>56.73</td>
</tr>
<tr>
<td>Psychiatrists</td>
<td>57.61</td>
</tr>
<tr>
<td>U.S. Secret Service agents</td>
<td>64.12*</td>
</tr>
</tbody>
</table>

*Ekman & O’Sullivan (1991)*
Prediction Challenges

• A small percent of the population may be predictable, while the majority of crime is committed by those who aren’t

• Unlike some violent offenders-prefrontal cortex activity can look normal in “financial” psychopaths

• Subtle contextual differences change decision processes making behavioral predictions difficult for “normal” population (Johns, 2006)

(Dan Ariely, Duke University)
Neuroscience and Decision Making

• Instead of a conscious reasoning process to arrive at a judgment
  • Usually have immediate and sub-conscious intuition
    • Followed by conscious reasoning to support that intuition

• Logic versus emotion in decision making (J. Greene research)

Haidt (2001)
Stability of Moral Position

Study: “Large scale governmental surveillance of e-mail and internet traffic ought to be forbidden as a means to combat international crime and terrorism”

Hall, L. Lund University
Stability of Moral Position

Study: “Large scale governmental surveillance of e-mail and internet traffic ought to be permitted as a means to combat international crime and terrorism”

69% of people gave well constructed arguments for one of two altered statements after taking a moral position.

Hall, L. Lund University
Economic Theory

Assumption-Theory of Expected Utility:
Assumes we will follow a logical process, weighing the expected gain from a crime against the likelihood of getting caught and severity of punishment.

**Does cheating increase/decrease relative to:**
The amount that can be stolen?
The likelihood of getting away with it?
The severity of the punishment?
*The research says...*
The Precipice of Fraud

Situational factors:
Research shows when factors like these...

- Meeting debt covenants
- Meeting sales projections
- A surprise loss, legal problem, or business challenge
- A severe personal challenge
- Pressure for aggressive accounting treatment of any kind (starts a cycle)

Are mixed with factors like these...
The Precipice of Fraud

**Over-optimism**- A bias that causes a person to believe that they are less at risk of experiencing a negative event compared to others.

**Overconfidence**- An over-estimation of one’s abilities or exhibiting greater certainty than warranted by existing circumstances.

**Loss Aversion**- The motivation to avoid losing what you already have is even stronger than the motivation for additional gains.

**Framing errors**-(Exercises)
The Precipice of Fraud

Framing
Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimate of the consequences of the program are as follows:
Framing
Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimate of the consequences of the program are as follows:

• If program **A** is adopted, 200 people will be saved.
• If program **B** is adopted, there is a $1/3^{rd}$ probability that 600 people will be saved, and a $2/3^{rd}$s probability that no people will be saved.

• If program **C** is adopted, 400 people will die.
• If program **D** is adopted, there is a $1/3^{rd}$ probability that nobody will die, and a $2/3^{rd}$s probability that 600 people will die.
Group Psychology
Challenging our Assumptions

• Do we cheat more when we are alone, or more when we are with other people?

• Will a majority of people be willing to break written codes to follow unwritten norms?

• Do people in a group tend to settle on a decision that is an “average” view of the group?

• Will group members support a whistleblower for blowing the whistle on a group norm that is immoral and not personally supported by the individual members of the group?

• What percentage of people would agree with the obviously wrong choice of a fellow group member, with no known motivation to do so?

• Should ethical leaders take a strong stand early in discussions?

• Is the search for concurrence in groups a sign of a good team?

(Beaman et al. 1979; Diener et al., 1976)
Do we Cheat More in Groups than as Individuals?

Study observed 1,300 children visiting 27 homes around Seattle

- Some alone
- Some in groups
- Some asked names/where they lived
- Some were not

Children were asked to take one piece of candy then left alone as hidden observers watched

- Children in groups took the most candy
- In groups and not asked identity took even more
- Individuals asked identity were least likely to cheat/mirror/Dissonance

(Beaman et al. 1979; Diener et al., 1976)
**Group Psychology**

The Science Behind Collusion

**The overwhelming power of belonging**

- "Need to belong"—Affiliation with similar others is a fundamental human motive.
  - Pervasive drive to form and maintain relationships (Baumeister & Levy, 1995)
  - Social connection is crucial for mental and physical well being
- Once in a group, these motives shape our perceptions and interpretations
- Threat of breaking a relationship causes great stress
- External threats trigger fear and strong motivation to affiliate (Schacter, 1959)
  - Especially with others who face a similar threat
Group Psychology
The Science Behind Collusion

Research studies and real life repeatedly show the desire to affiliate with those facing similar threats

• Provides emotional support and cognitive clarity
• Hospital patients waiting for open heart surgery prefer to wait with those who have been through the surgery or those also waiting (Kulik & Mahler, 1989).
• Strangers band together after natural disasters or terrorist attacks.
• Study participants expecting painful shocks chose to wait with other nervous participants (Schacter, 1959)
Group Psychology
The Science Behind Collusion

Group Assimilation

- Norms - Unspoken rules of conduct
  - Informal rules (culture) more powerful than formal rules
  - A sense of what it means to be a good group member
  - Figuring out the rules takes time and causes anxiety (investment)
- Once learned- breaking group norms is difficult and even traumatic from fear of social consequences
- Studies show that co-workers are very reluctant to report unethical behavior of others on their work teams (Benoit Monin, 2008).
  - Individuals that go against group norms are strongly disliked by fellow participants—even when the norm was immoral and not personally accepted by other participants (rejection)
  - People fear being divisive (Whistleblowers) (2008 financial collapse)
Ingroups and Outgroups

• Strongly favor our ingroup - During conflict or unstable situations, opposing groups are feared

• Outgroups perceived as foreign

• Dehumanize outgroups - lack normal human qualities

• Dehumanization and “Us” versus “Them” = easier to attack outgroup members (used in military conflict, politics)

• Use behavior from ingroup as a cue (Ariely)
Group Psychology
The Science Behind Collusion

GroupThink-The tendency to seek concurrence among group members creating a dangerous bias in decision making like a social disease (Janis, 1984)-more likely in:

• Highly cohesive groups that reject deviant opinions and outgroup views ("US" verus "THEM")

• Groups with strong leader that lacks procedures to review decisions

• Groups with similar backgrounds

• Stressful situations
  • Under stress/ambiguity, urgency overrides accuracy and the reassuring support of other group members becomes highly desirable
Group Psychology
The Science Behind Collusion

Groupthink leads to Biased Sampling

• Tendency to spend more time discussing shared information-information already known by most of the group rather than information only known by a few
  • People tend to share knowledge most likely to be known/accepted
• Failing to consider important information that is not common knowledge
• Leads to decisions based on flawed or incomplete information

(Stasser, G., 1992; Stasser & Titus, 2003)
Group Psychology
The Science Behind Collusion

Research into NASA 1986 Space Shuttle Challenger Disaster

• VP of engineering objected to launch due to cold weather
  • Cause “O”-rings in rocket boosters to fail
• Needing unanimous vote to launch, manager told VP to “take off your engineer hat and put on your management hat”. (Framing)
• The pressure worked and the VP changed his vote-sealing the tragic fate of the Challenger and her crew
• Biased Sampling-those who ultimately made decision to launch we not aware of all relevant information about risk of low temperatures
Group Psychology
The Science Behind Collusion

Reducing Groupthink

• Unspoken norms are more powerful than written codes
• Reduce group pressure to conform by encouraging criticism
• Leaders should NOT take a strong stand early in discussions
• Establish a norm of critical review—”second chance” meetings to reconsider
• Discourage the search for concurrence
• Consult with outsiders
Group Psychology
The Science Behind Collusion

Do members of groups “average” their views or tend to the extremes?

Group Polarization

• Groups exaggerate their initial tendencies (more than individuals)
  • More cautious on “Gain” related decisions
  • More risky on “Loss” related decisions
• Through discussion, group norms, support of group members

(Moscovici & Zavalloni, 1969; Myers & Lamm, 1976)
The tangible the close and the near term- Vivid factors and people “now” have a larger impact on decision making than abstract and distant factors.

Diffusion of Responsibility-Deindividuation-In a group, we feel that responsibility is shared by all, lessening our role. Also, if something were wrong, someone else would say something

Small Steps Phenomenon- Redefine normality-subconsciously lower the bar over time. German doctors during holocaust-IPO accounting fraud-Enron traders

Obedience to authority- The “draw” of following orders (diminishes self-responsibility)-Milgram experiments-60% continued to 450 volts-High status increases obedience
Group Psychology
Why Does Fraud Continue to irrational lengths?

Escalation Effects

• **Escalation of commitment**
  • Commitment to a failing course of action is increased to justify investments already made (Haslam et al., 2006; Keil et al., 2007; Staw, 1997)
  • Groups are more likely than individuals to escalate commitment to a failing project and to do so in more extreme ways.
  • Numerous groups, businesses, governments have incurred huge costs on projects that should have terminated long before they did (Ross & Staw, 1986)
Group Psychology
Why Does Fraud Continue to irrational lengths?

Escalation Effects

- **Sunk Costs**- Focus on lost investment of time/money-Decision makers often honor sunk costs by increasing their commitment to a failing course of action
  - Battle between self-justification and regret fuel the escalation
  - Continues beyond bounds of rationality
  - Occurs in groups-experiments show that a second decision-maker will invest further in the failing program of an initial decision-maker.

Gunia, Sivanathan & Galinsky (2009)
How did we miss it?

**Confirmation Bias** - The tendency of people to favor information that confirms their beliefs or hypotheses. Studies show we tend to seek information that confirms rather than properly tests the validity of what we are told.

**Selective Perception** - A cognitive bias wherein individuals are subconsciously attracted to stimuli that falls in their range of reasonable expectation and are oblivious to other stimuli.

**Belief Perseverance** - Our tendency to seek information that is consistent with our pre-existing beliefs.

**Biased Processing of Disconfirming Information** - The subconscious bias towards being more critical of evidence that disconfirms our initial beliefs than evidence that confirms it.
Situational Awareness

Attractors and Distractors

• We must be able to filter relevant information from a sea of irrelevant stimuli
  • Requires balancing task and stimulus related factors
    • Balance is governed by working memory and selective attention

• Research shows that the more extraneous contextual stimuli that exists, the harder our brains work to tune that stimulus out and focus on the original subject (U.S.)
  • Sometimes that extraneous stimuli has significant implications on the context of the subject

• Time Limitations (seminary students)
• Ability to attend to limited number of stimuli
Pattern Seeking and Professional Skepticism

Two types of errors in pattern seeking
- Type I-False Positive- Finding a pattern that doesn’t exist
- Type II-False Negative- Failing to detect a pattern that exists

Signal to noise ratio (Attractors)
- Too low- Miss obvious patterns
- Too high- See false patterns everywhere

What causes pattern detection errors?
Negotiation Research in Auditing

- The more ambiguous the accounting issue, auditor likely to accept clients preferred treatment.
- The more important/increased pressure surrounding the accounting issue, auditor more likely to concede
- The greater number of possible alternative treatments, the less likely the auditor was to insist on their judgment
- Clients perceive they are more likely to persuade auditors if firm has short tenure
- Auditors are much more likely to waive smaller adjustments that aggregate to a material amount than those that are individually material (Small Steps Phenomenon)

Brown & Wright (2008)
Choice Complexity and Professional Judgment

Study on bias in professional decision-making using Doctors

• Decision to send patient—a 67 year old farmer for hip replacement surgery
  • First group of doctors told they forgot to try one drug—ibuprofen. Would they call patient back from surgery to try the drug? 50% said pull then back
  • Second group of doctors told they forgot two drugs—ibuprofen & piroxicam. Would they call patient back from surgery? 72% let patient go on to surgery

Why? Choice complexity increases chance of going with default option

Redelmeier & Shafir (1995)
What is Critical Thinking?

• Logic- Normative theory of how one should reason. Formal logic.
  • Mathematics/computer science
  • Hard answers-precisely defined operations
  • Not descriptive theory of how humans actually reason
  • Does not generally consider psychology
• Critical Thinking- Everyday, real life reasoning.
  • Using creativity
  • Deals with psychology. Beliefs and recognizing biases
  • Gray areas, complex, unclear and changing situations
  • Reflective and independent thinking

• Judgment- decisions made after interpretation, and conclusions reached that drive actions and behaviors
Critical Thinking - A meta-thinking skill that requires:

- **Attitude**
  - Openness
  - Willingness to be wrong
  - Exploring biases and assumptions
  - Accepting, even seeking criticism
  - Preferring to figure out problems on your own so you really understand them—not handed the answer
- **Analyzing your errors in judgment**
  - Instead of excuses, curiosity about what biases or other errors may have resulted in the incorrect judgment
Critical Thinking

“Rules based thinking” type
  • Spurs automatic responses to “recognized” patterns
  • Narrows our thinking to specific and narrowly applicable rules and patterns
  • Entails simple recognition of the situation and retrieving a typical response

Does not address:
  • How situational assessment is accomplished in new or changing circumstances
  • How to deal with conflicting or unreliable data
  • How to change your mind

In unusual circumstances, our recognitional process needs to be supplemented by using
  “Attentional Control”
We do this by shifting our attention from simply reading the cues in a situation to recognizing our automatic assumptions about the conclusion...
  • Use “As-If” reasoning by developing hypothetical or counter-factual ideas
  • Imagine that the possibility is true and pose queries about what would happen
Critical Thinking

“Real Time” Critical Thinking

CURIOUSITY is KING! - Situational Awareness

- Question underlying assumptions
  - Reveal new connections in data
  - Lead to new questions
- Think critically about the results of recognition on an ongoing basis
  - Pose questions about those results
- Look at information from different perspectives
- “Assume” your assumptions are correct but conclusion is not
Principles or Rules?

Does the inherent nature of rules make it more difficult to decide to do the right thing?

• Control the tendency to act only in our self interest (Self protection-Good Samaritan laws)
• The tendency to focus on the letter of the rule rather than the spirit.
  • Is tendency to interpret rules narrowly due to the characteristics of the rules themselves?
• Principles versus Rules based accounting standards
  • CFO’s less likely to make aggressive accounting choices under “Principles” based system (Agoglia, 2009)
  • CFO’s came to more similar conclusions under principles than rules based system
  • U.S. accounting standards have become so precise as to invite opportunistic interpretation by corporate executives (Agoglia, 2009)
Psychology of Fraud

More about the story and research:
Hear the story on National Public Radio at NPR.ORG (search Toby Groves)
Read the research article in the CPA Journal (Google CPA Journal Toby Groves)
Links and further information available through tgroves.com

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