Red Teams

Andrew Brown

(expleo)

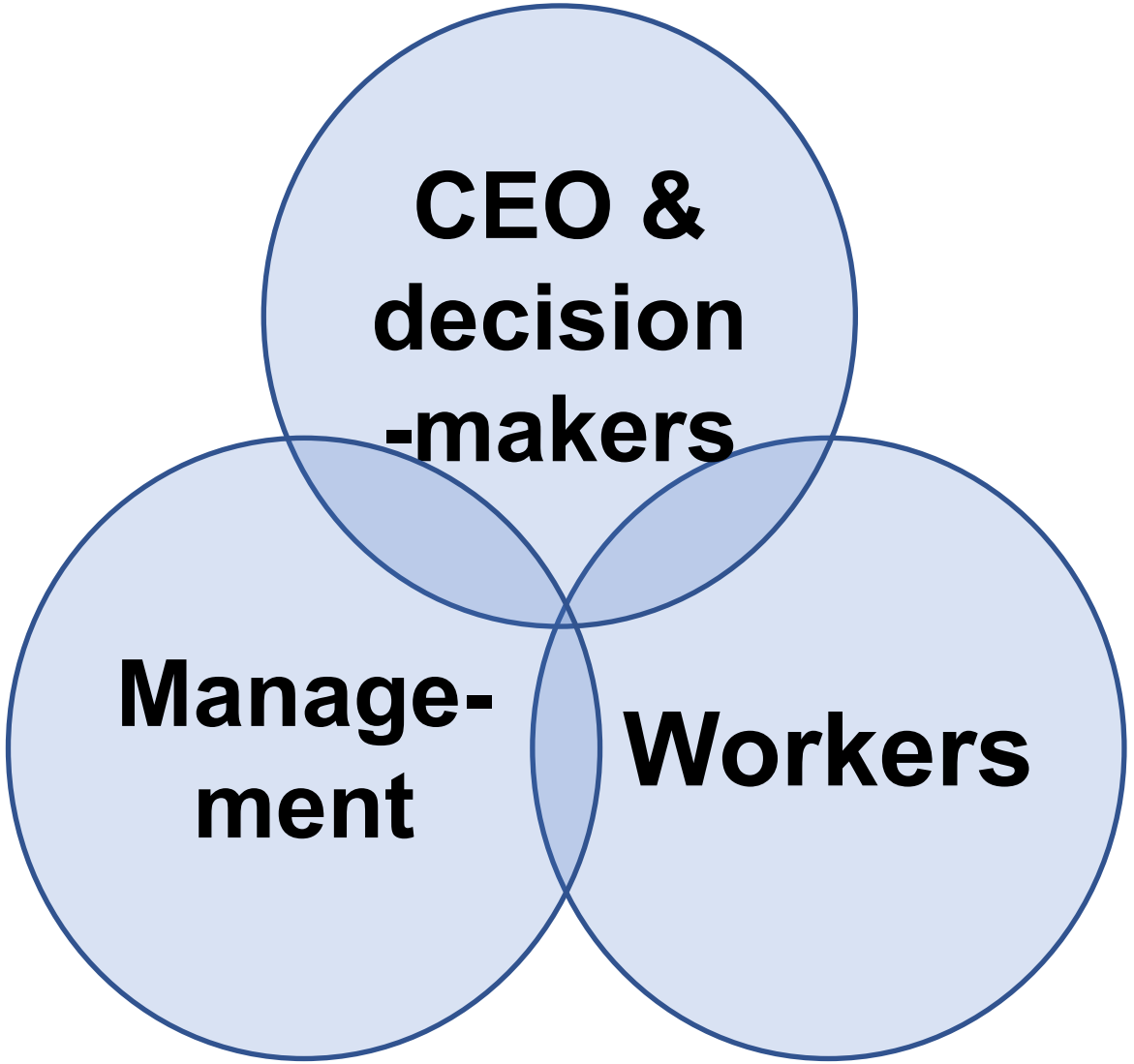
Think bold, act reliable

HUSTEF

HUNGARIAN SOFTWARE TESTING FORUM

Consider the following…

- Organisation embarks upon a disastrous project
- ‘Obvious’ from start
- Why did no-one stop this?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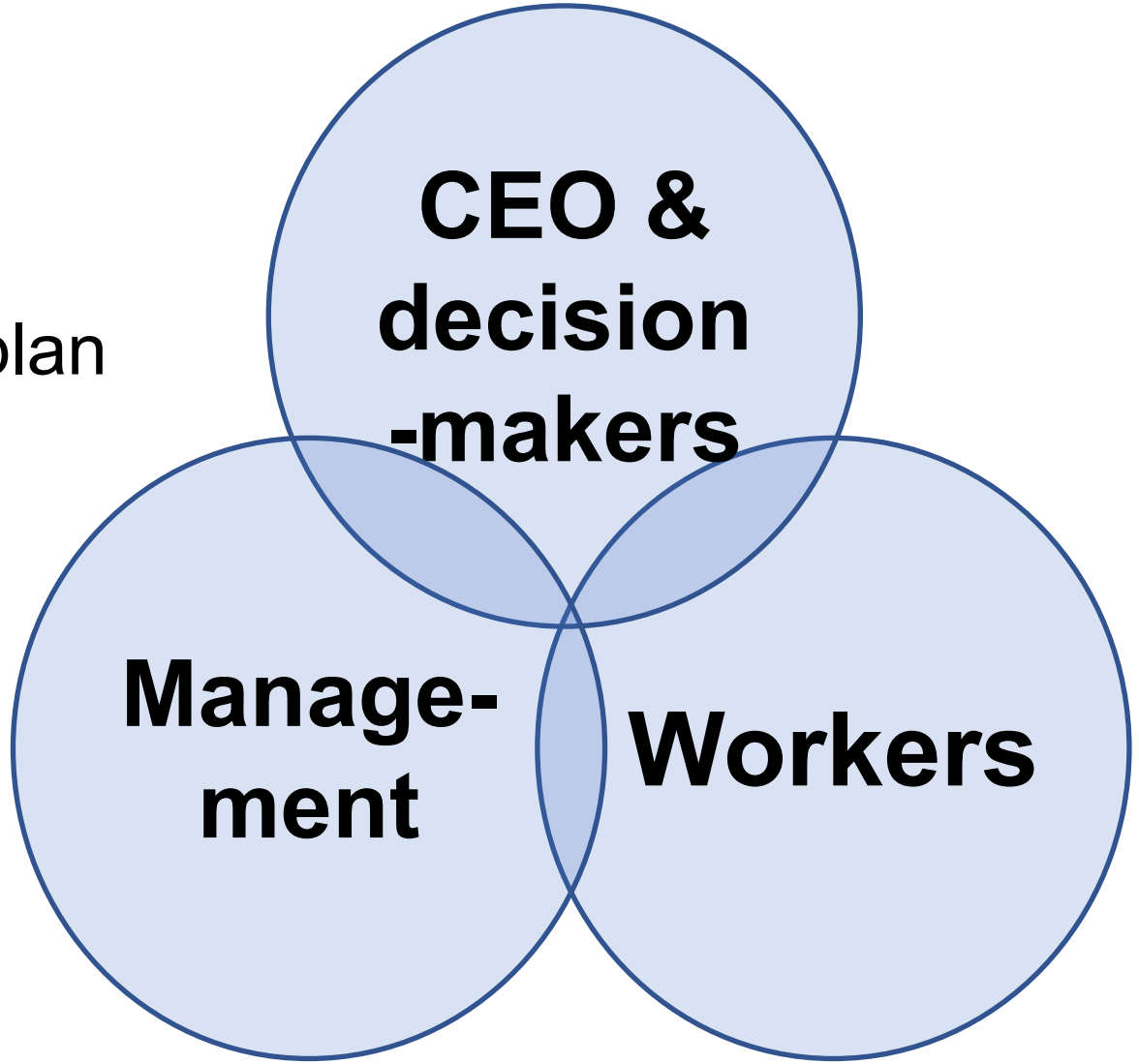
Manage-
ment
Workers

- Cannot see faults in own plan
- Will not see faults



Reasons we cannot see faults in own plans

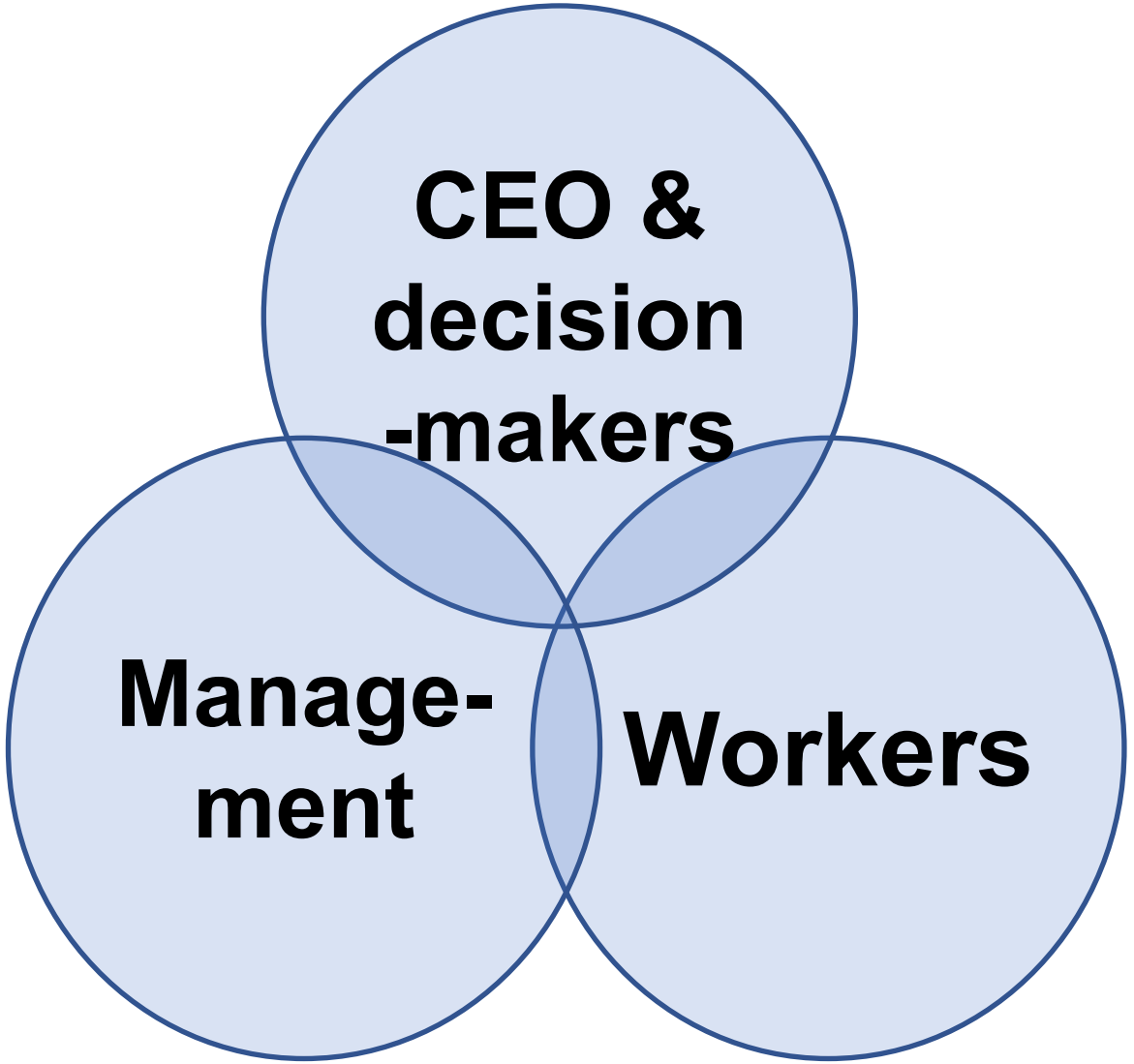
- Analogy to software development:
  - Do not expect developers to find own bugs
  - Have processes:
    - Pair programming
    - Code reviews
    - Testers
  - Even so, it is difficult

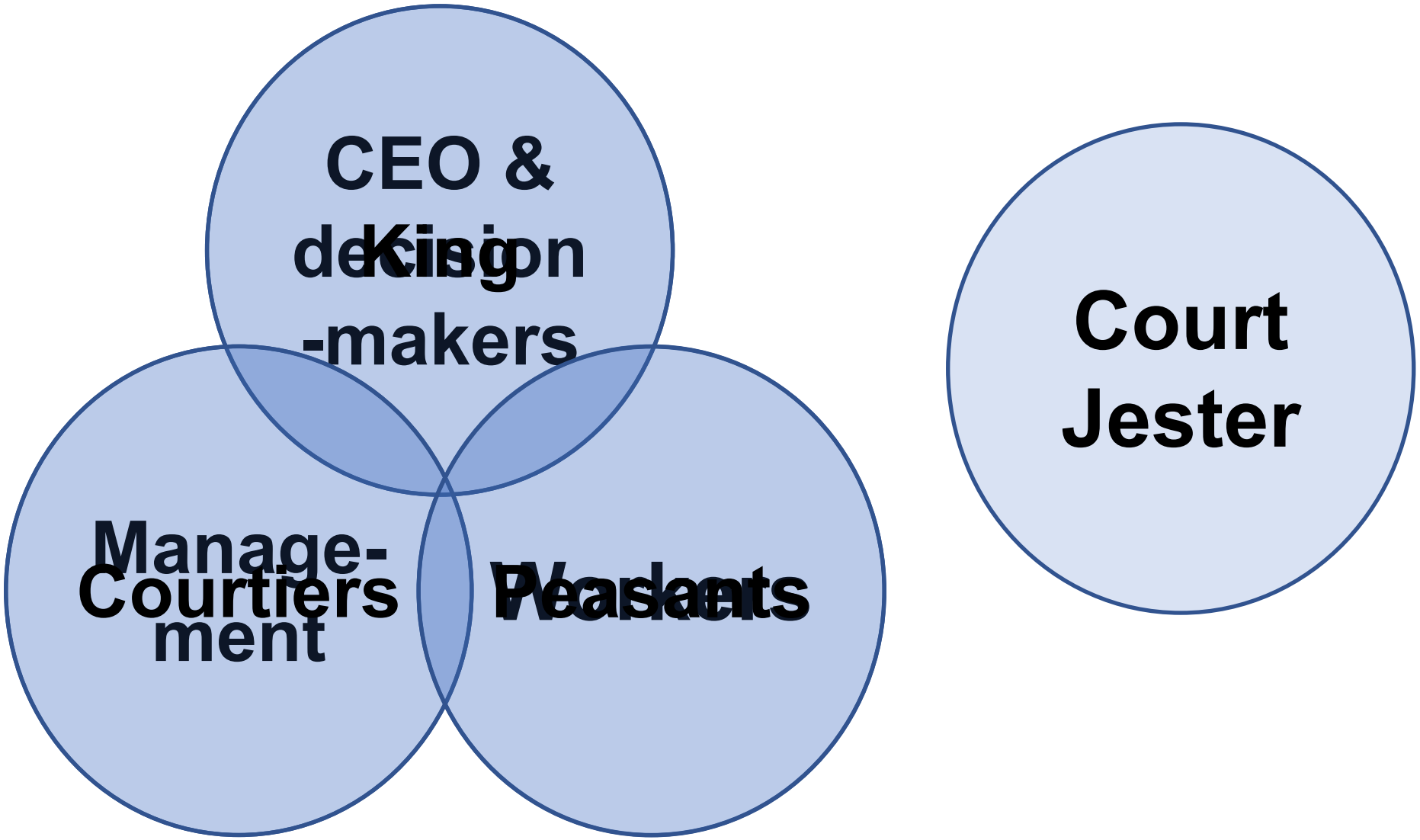
Reasons we cannot see faults in own plans

Spotting strategy faults can be harder:

1. Power hierarchies
2. No right & wrong

- No route to raise them
- Vested interests
- Do not see whole picture
- Dare not raise problems

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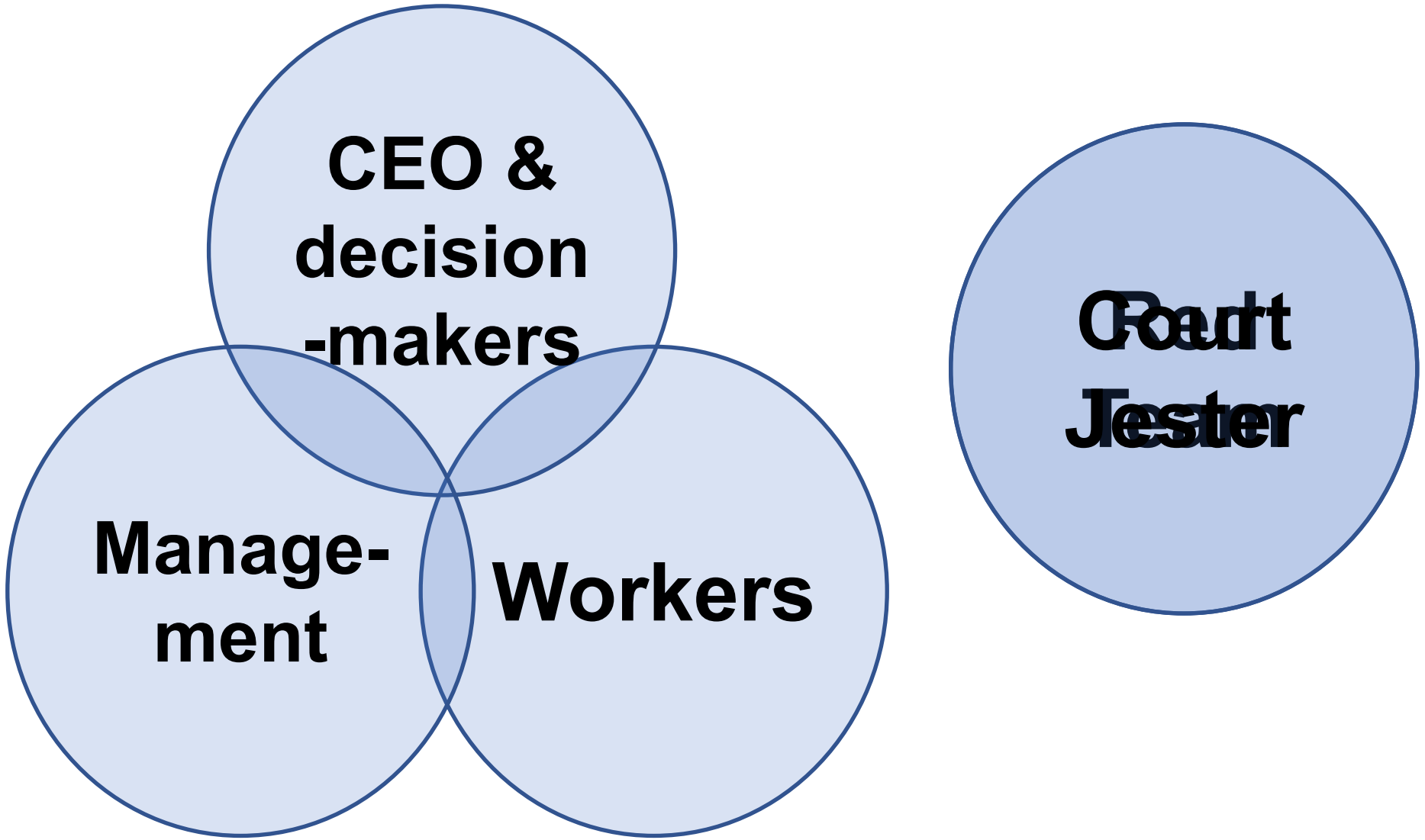
King
Manage-ment
Courtiers
Peasants
Vassals
Court Jester


CEO &
decision
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Court
Jester

What

is a Red Team?

What is a Red Team?

Several distinct roles:

1. **DECISION SUPPORT Red Team**
2. Simulation and wargaming: Opposing Force
3. Security & Cyber: White hat penetration

DECISION SUPPORT Red Team

Challenge organisation's orthodox thinking on a subject:

- Question current beliefs
- Uncover and test hidden assumptions
- Develop alternate perspectives
- …
- Provide leadership with contrarian viewpoints & options
- … to enable leadership to make better decisions

Why

do we need Red Teams?

Why do we need red teams?

1. We cannot mark our own homework
2. We are deluded and believe we can
3. We fail in predictable ways

We fail in predictable ways

- We take shortcuts
  - Limitations in time & resources
- Assume we know more than we do
  - Similar situation is not the same
- We discount threats
  - Overconfidence effect, Optimism bias
- Shortcuts and assumptions usually okay
- Sometimes lead into failure

Why do we need red teams?

1. We cannot mark our own homework
2. We are deluded and believe we can
3. We fail in predictable ways
4. We have organisational pathologies

We have organisational pathologies

- Groupthink
- Desire for harmony leads to dysfunctional decision-making
- Harmony achieved by suppressing dissent
- Need a maverick

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We have organisational pathologies

- Groupthink
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- Harmony achieved by suppressing dissent
- Need a maverick

- Being an organisational maverick is hard, with a short life expectancy
- Organisations have complex relationship with mavericks
- Delusion: “I could be a maverick if I wanted”

Example uses of a red team

citi
HSBC

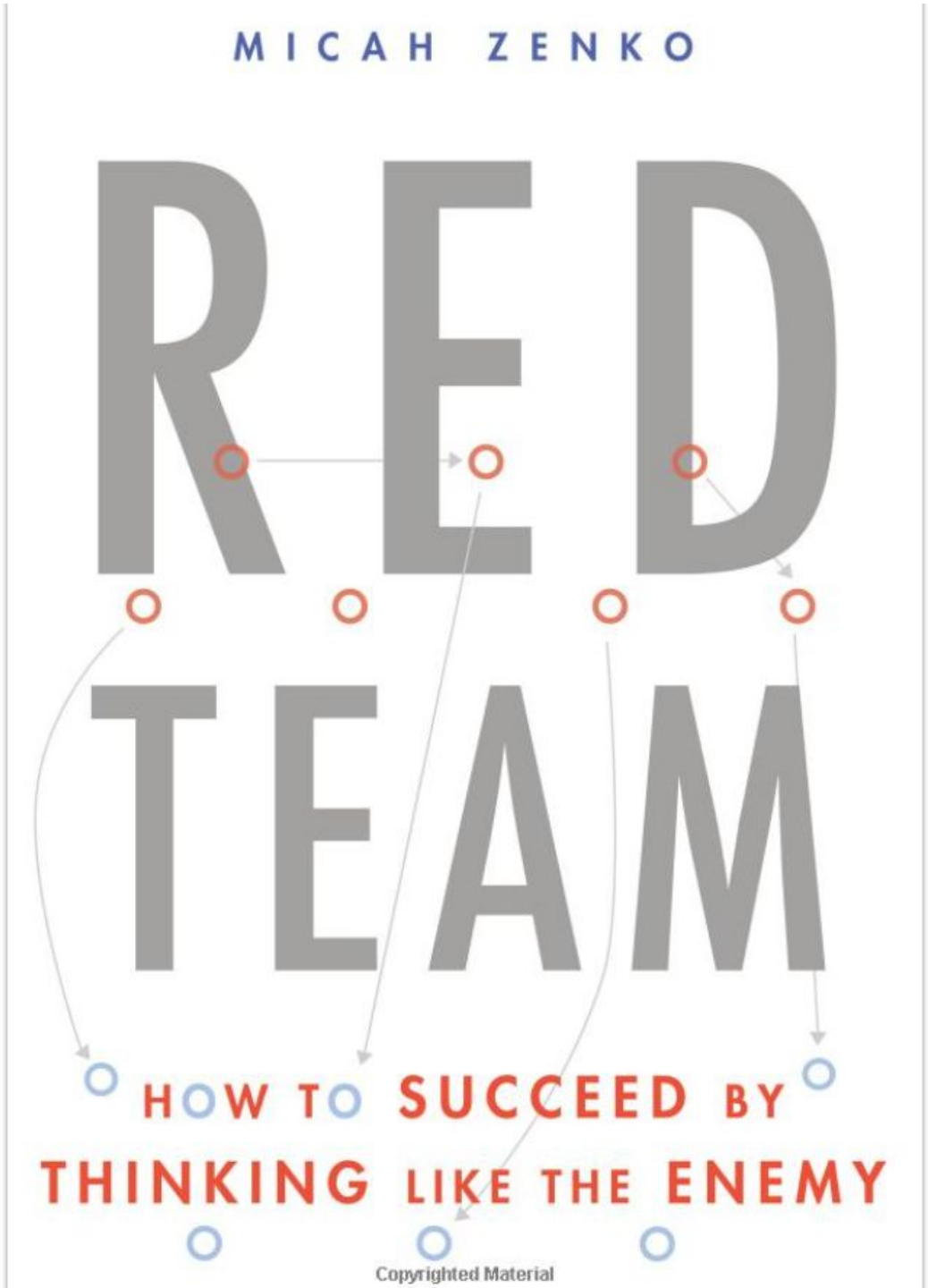
Example uses of a red team

- Canary Wharf Developers
- City of London office space ~£80/sq ft
- Offer Canary Wharf at £30
- How might City property owners react?

Example uses of a red team

- Proposed IT project
  - What issues are hidden?
  - How can we uncover them?
  - What assumptions have we made?
  - When may they be important?
- A red team allows you to safely
  - Raise issues
  - Challenge assumptions
  - Improve your plan, or develop a better one

Critical success factors to building a Red Team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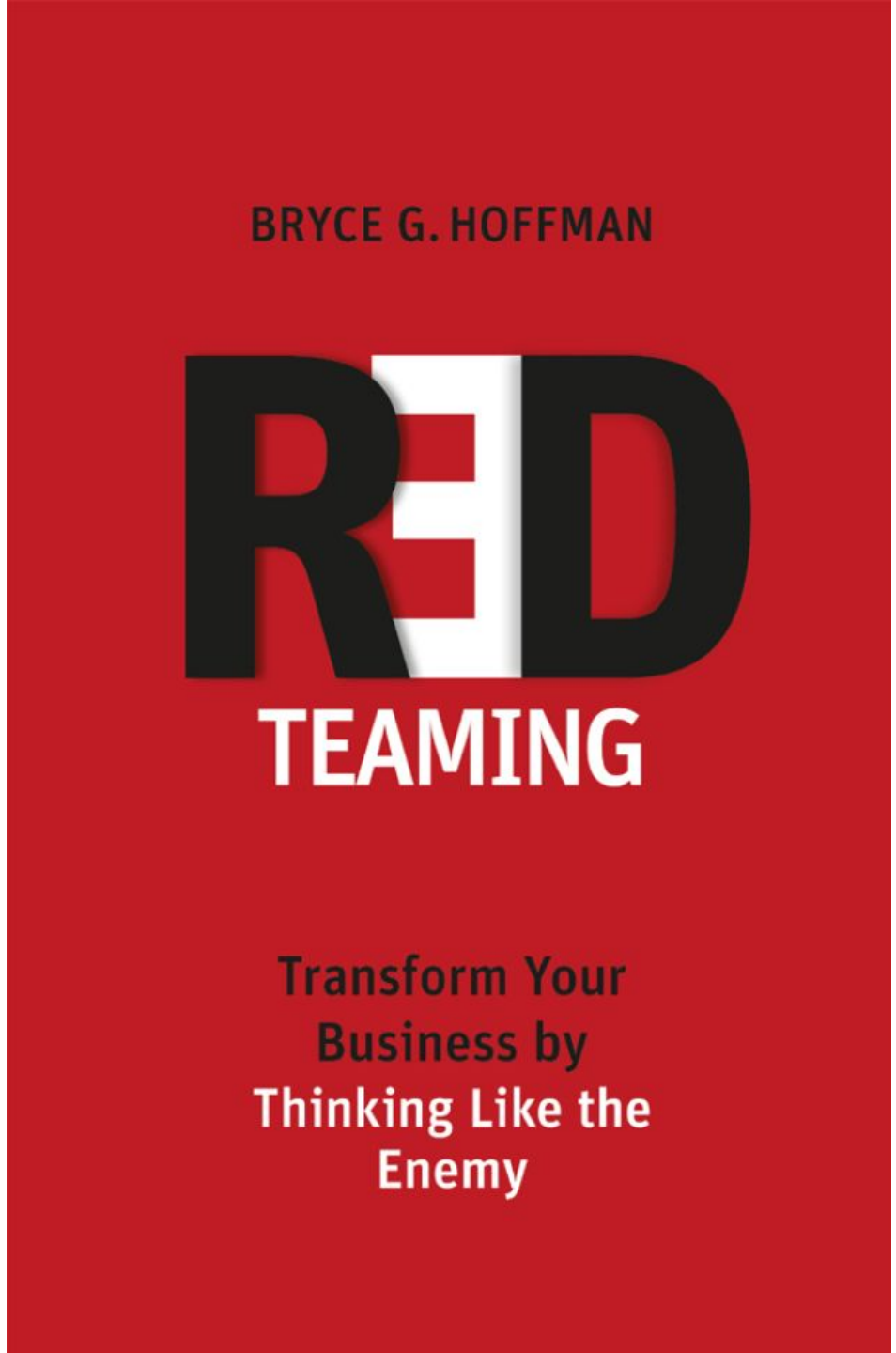

BRYCE G. HOFFMAN
RED TEAMING
Transform Your Business by Thinking Like the Enemy

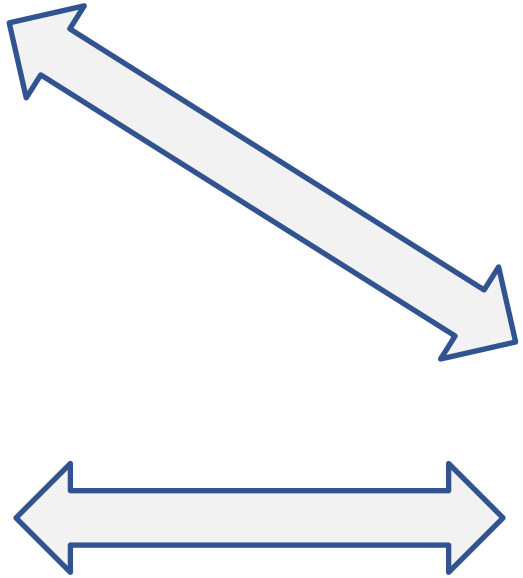
Critical success factors to building a Red Team

1. Boss buy-in
   - Set expectations & permissions
   - Resource & access
   - Willingness to listen to findings… And act on them
2. Clear & Appropriate brief
3. Effective team & tools

Capabilities & qualities needed

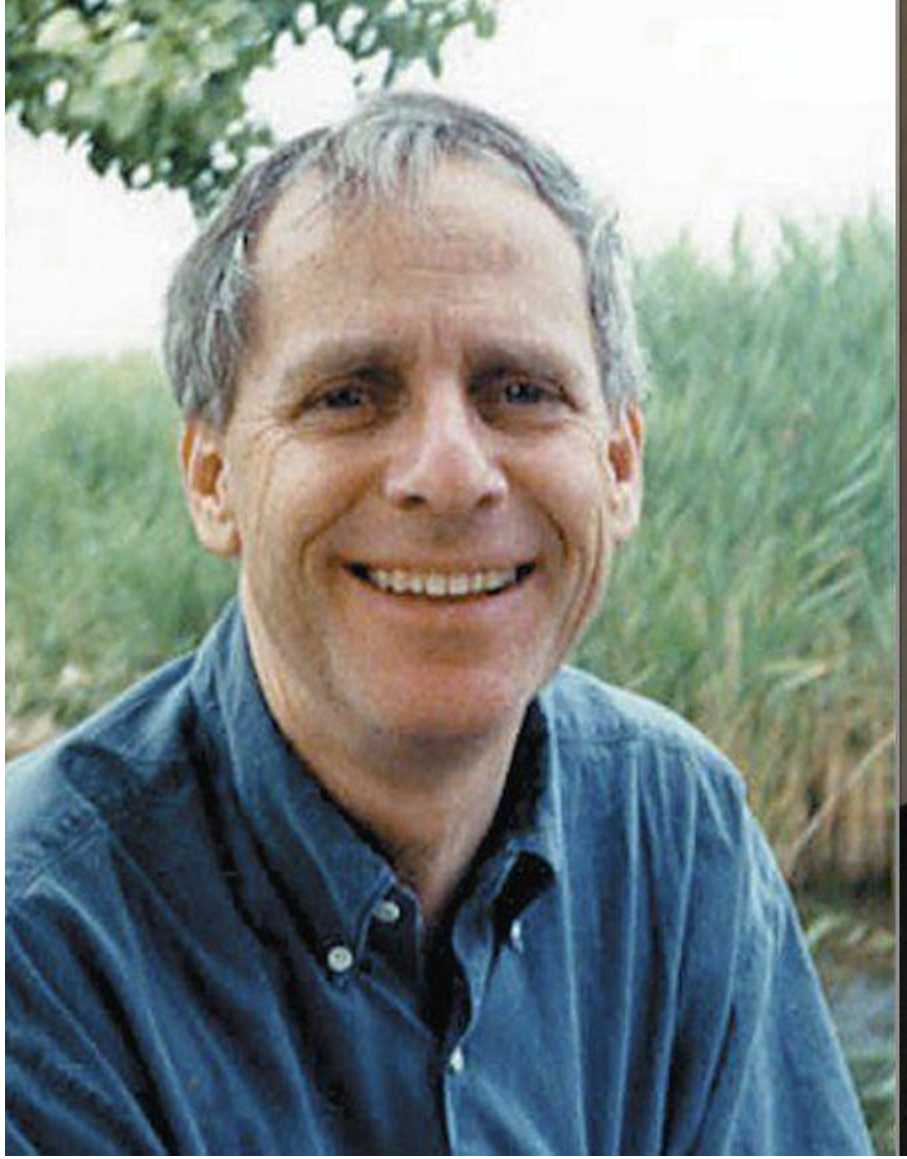
Qualities needed in a red team member

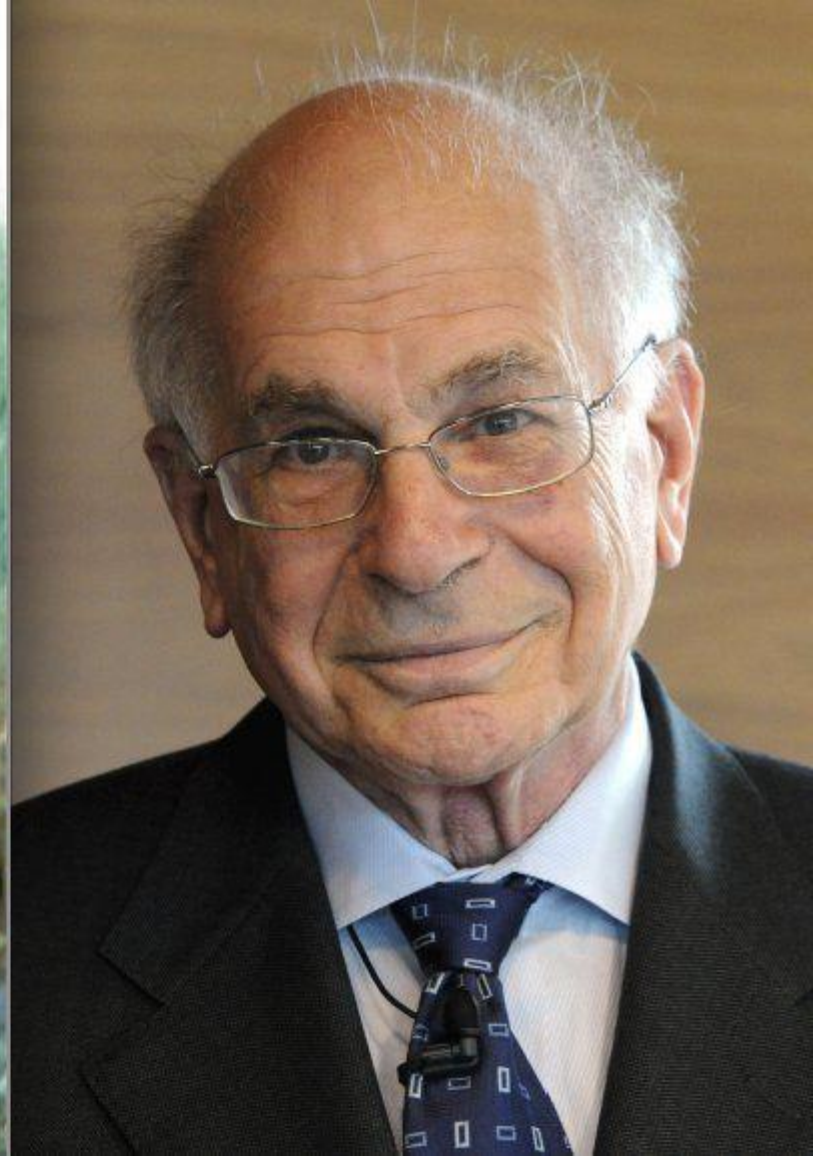
- Maverick spirit
- Creative
- Curious
- Open minded
- Self-confident



- Analytical
- Empathy, avoiding mirror-imaging
- Facilitation skills
- Tactful, avoiding conflict
- Humility

- Lot of these qualities fit with testing
- **Qualities do not reside in single person**





“I will prove that you are wrong”

“Under what conditions could this be true?”

Capabilities & qualities needed

Why …

1. can’t we mark our own homework?
2. are we deluded and believe we can?
3. do we fail in predictable ways?
4. do we have organisational pathologies?

We suffer a series of cognitive biases

(My specialism)

Qualities needed - self-awareness

- Biases
  - Bias Blind Spot
  - Confirmation Bias
  - Overconfidence Effect
  - Groupthink

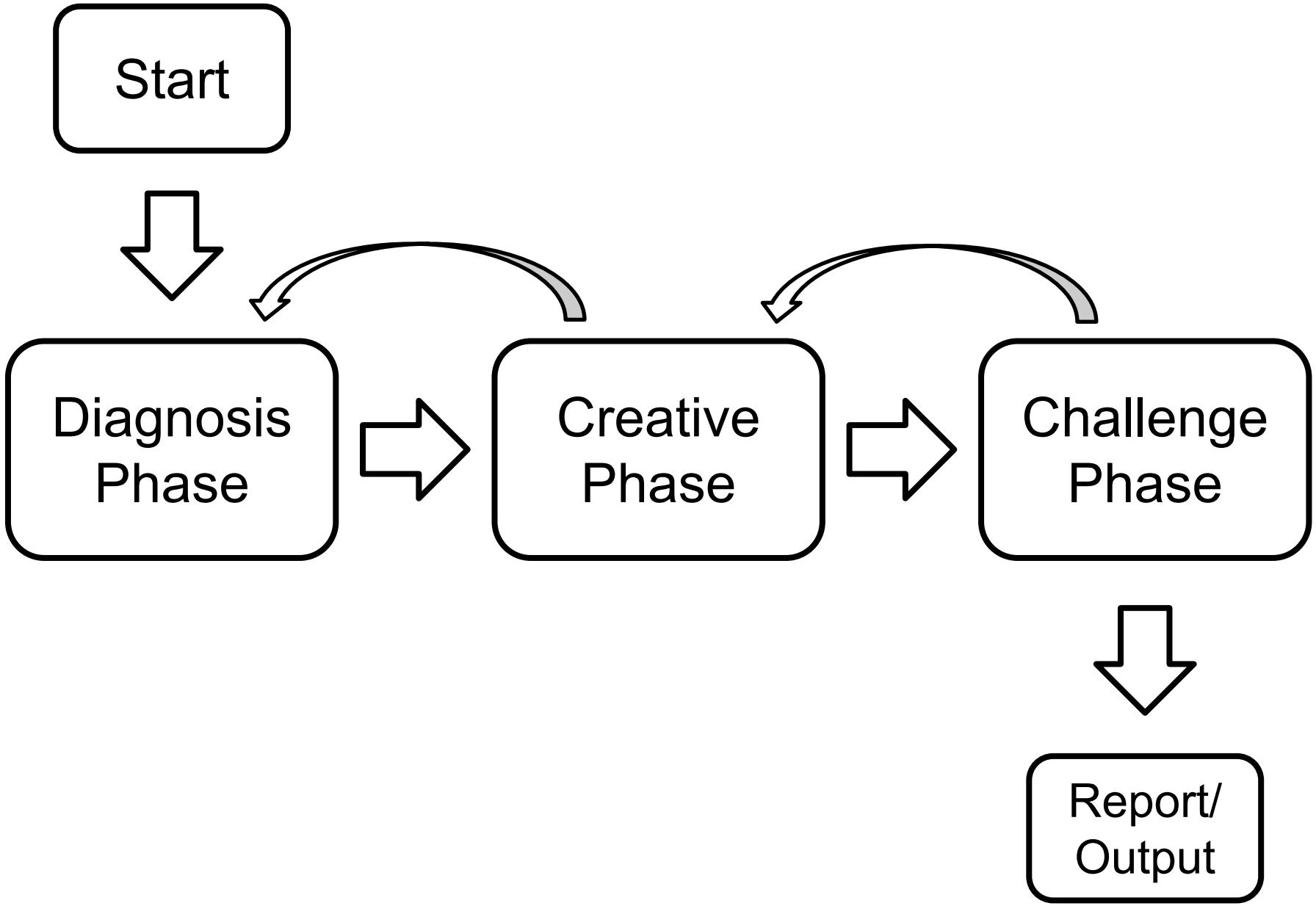
- Currently developing debiasing activities & mitigation
- Self-aware & introspection

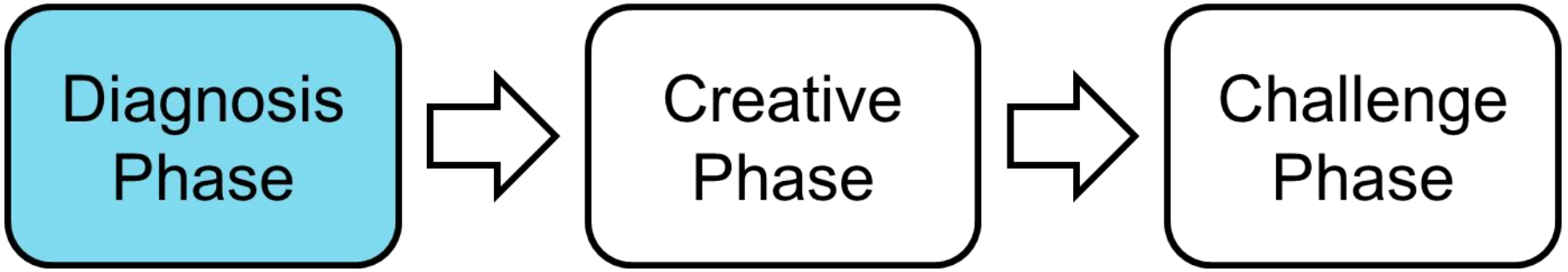
Structured thinking tools

Structured thinking tools

- Code quality tools
- Security & penetration tools
- Usability and accessibility
- Performance
- Regression and automation

- Different tools for different tasks
- We have different tasks within thinking


Start
Diagnosis Phase
Creative Phase
Challenge Phase
Report/ Output

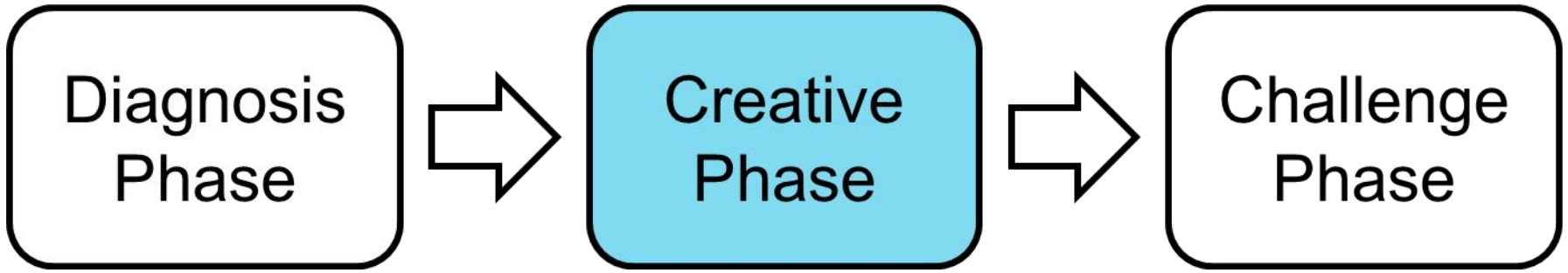


Activities

- Identify flawed assumptions
- Uncover assertions
- Reveal faulty logic
- Identify evidence gaps
- Identify additional info required

Tools

- Key assumptions check
- 5 Whys
- Probability Analysis
- Inconsistencies Finder
- Analysis of Competing Hypotheses

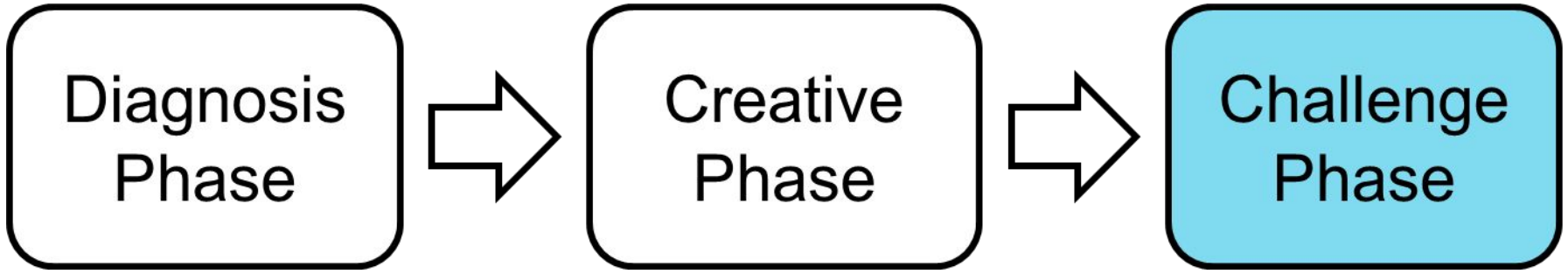


Activities

- Apply alternate perspectives
- Consider external factors
- Identify alternate outcomes
- Identify side-effects

Tools

- Pre-mortem
- Stakeholder mapping
- Problem Framing
- 4 ways of seeing

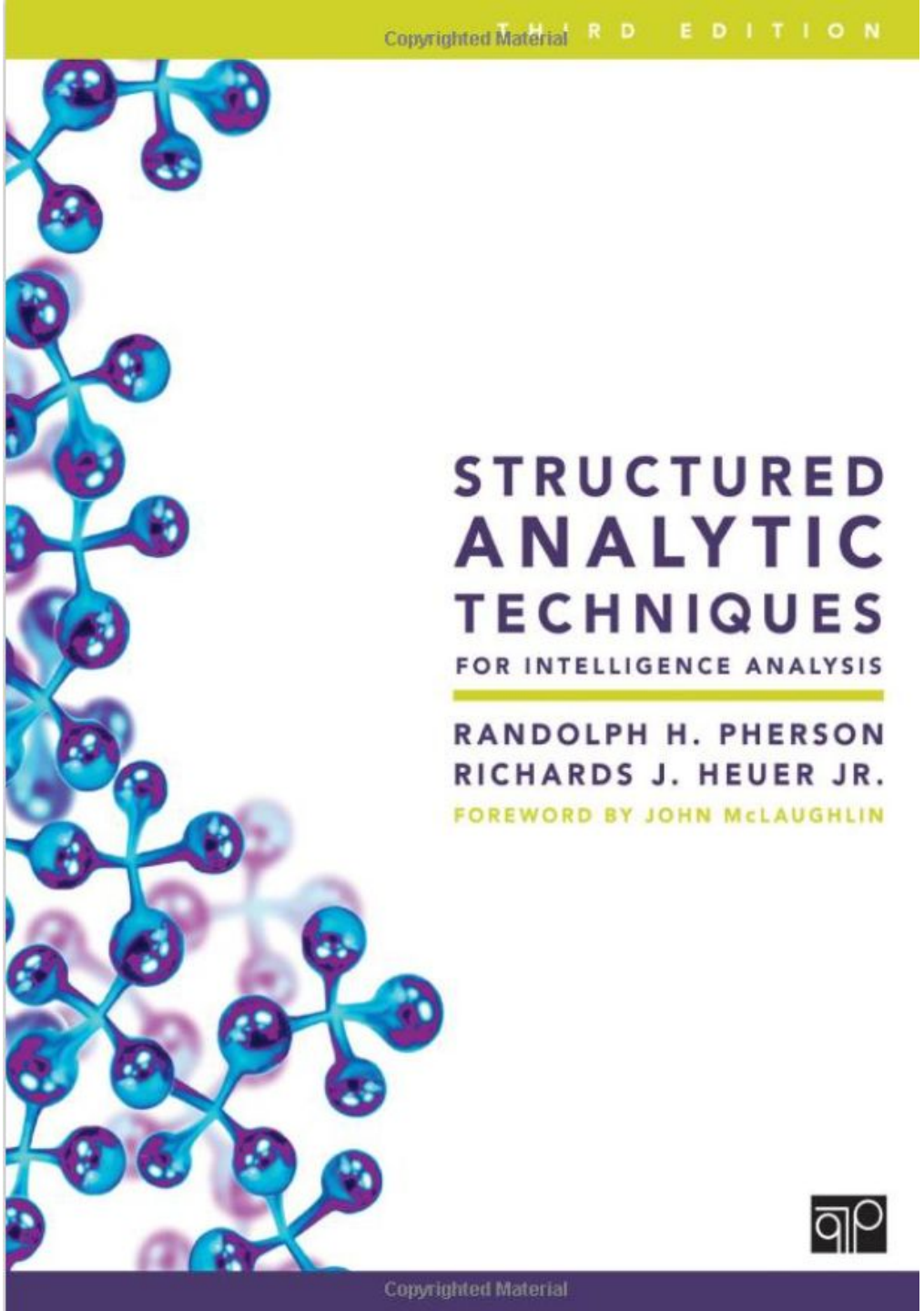


Activities

- Develop contrasting views
- Challenge ideas & theories
- Test hypotheses

Tools

- Devil's advocacy
- What-if analysis
- …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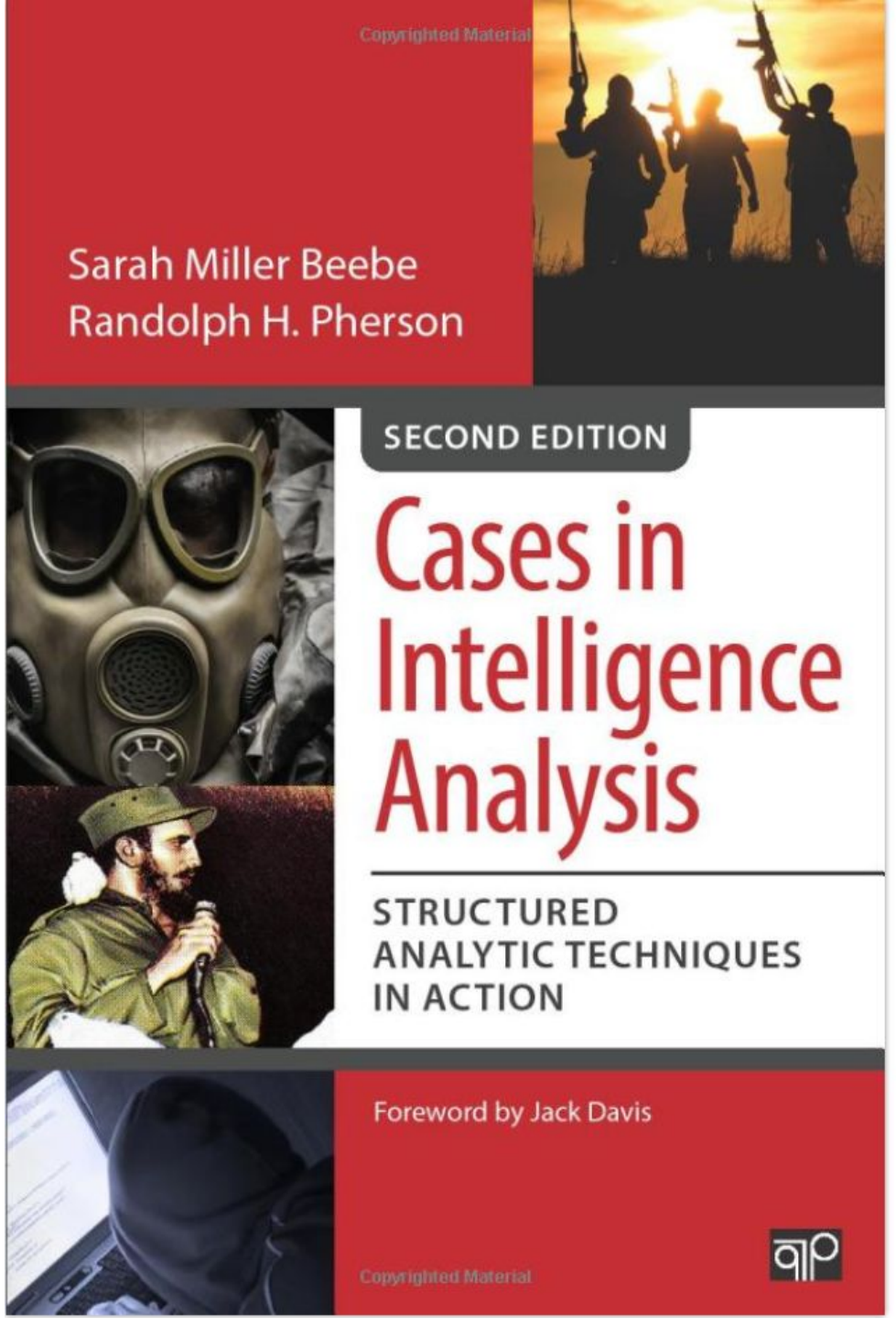
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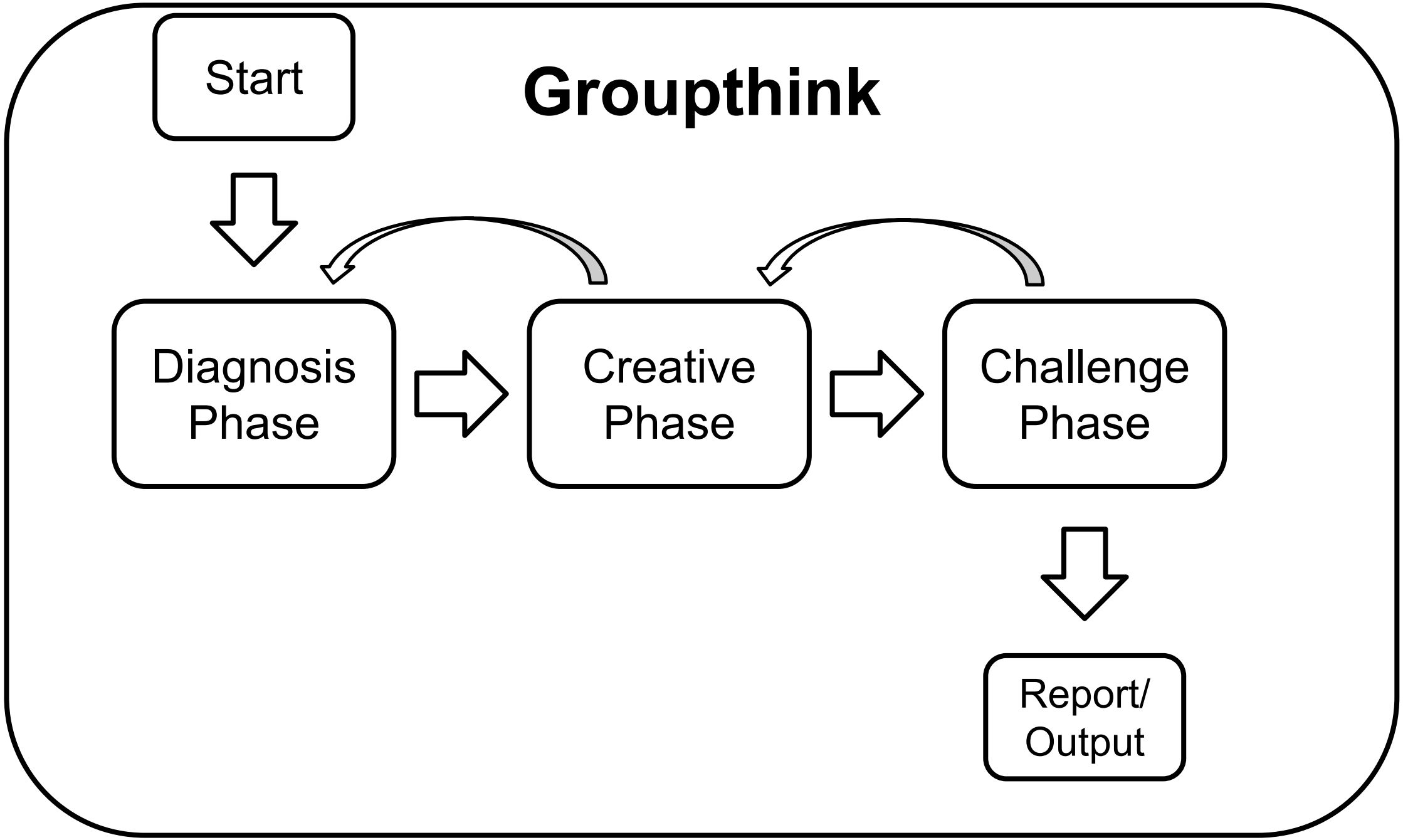
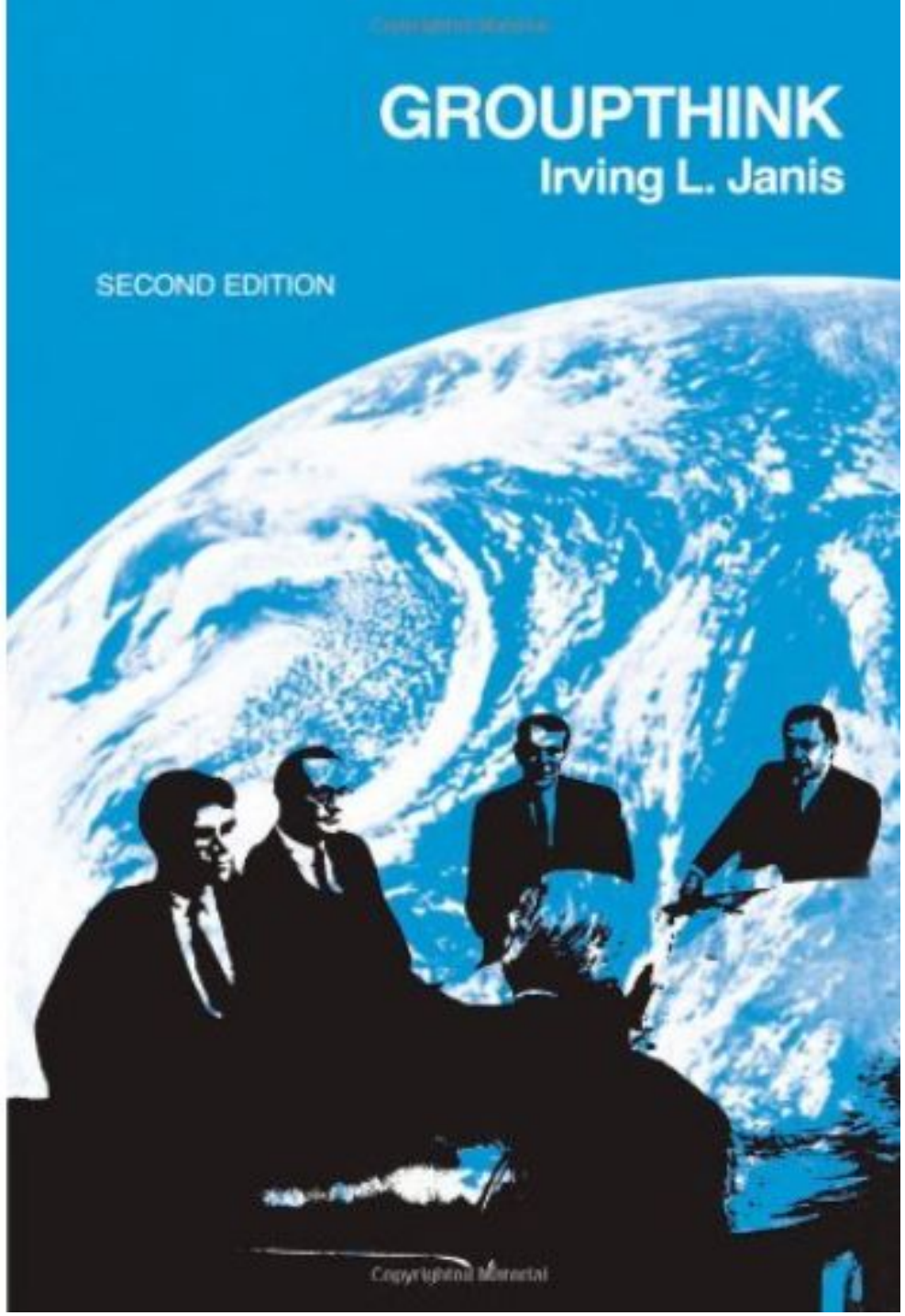

Groupthink
Start
Diagnosis Phase
Creative Phase
Challenge Phase
Report/ Output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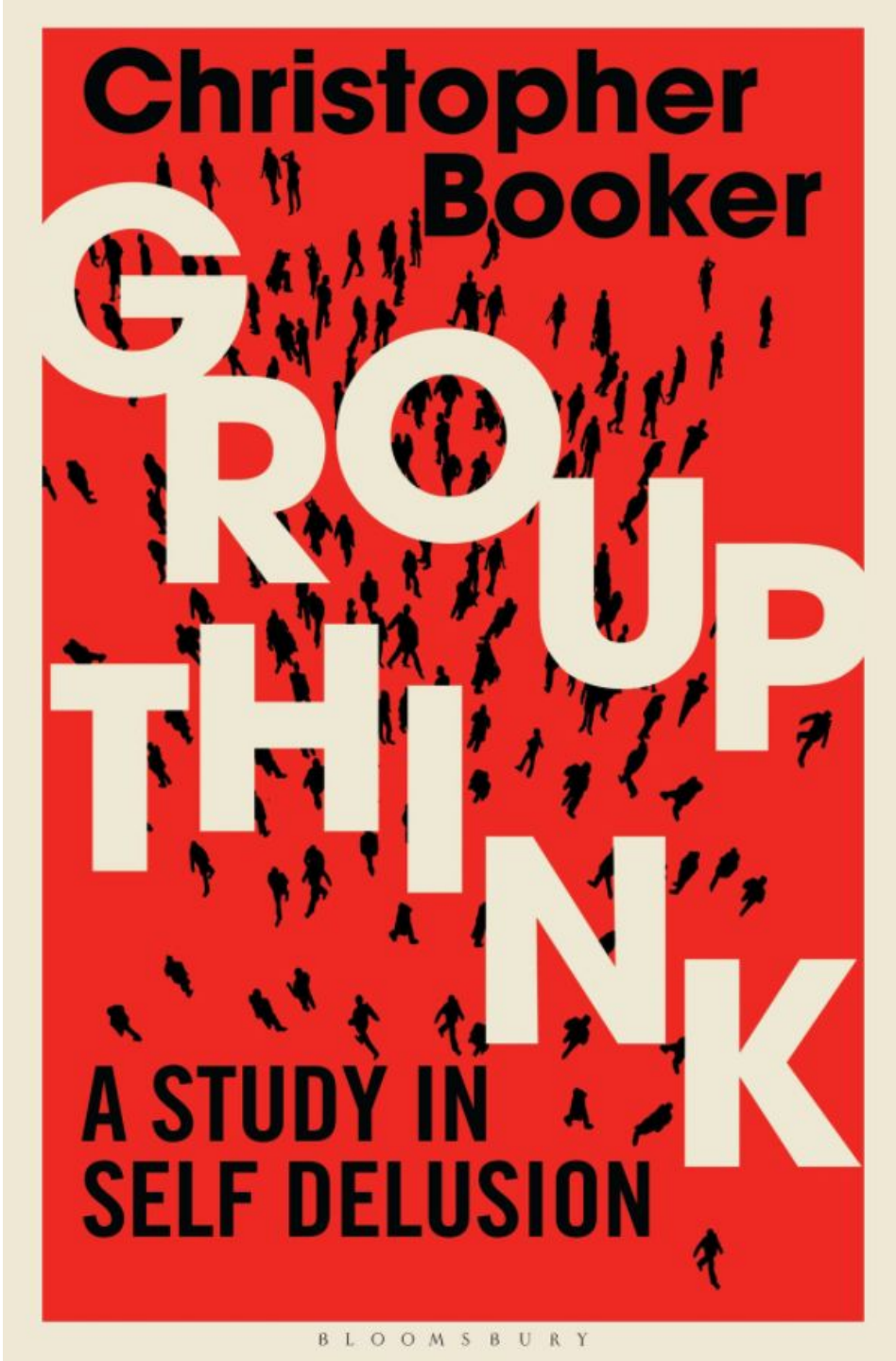
Christopher Booker
GROUPTHINK
A STUDY IN SELF DELUSION
BLOOMSBURY

Groupthink mitigation techniques

1. Circle of voices
2. Think-write-share
3. 1-2-4-Whole Group
4. 5 will get you 25
5. Dot voting

Groupthink awareness & mitigation workshop

Summary

Red Teams: Summary

- Opportunity to challenge orthodox thinking, improve plans
- Cannot mark homework, groupthink
- CSFs:
  - Boss buy-in
  - Tamed, tactful mavericks
  - Bag of structured thinking tools

Thank you

Questions?

Resources

Resources

- The most useful resources are either:
  - Most expensive
  - Free

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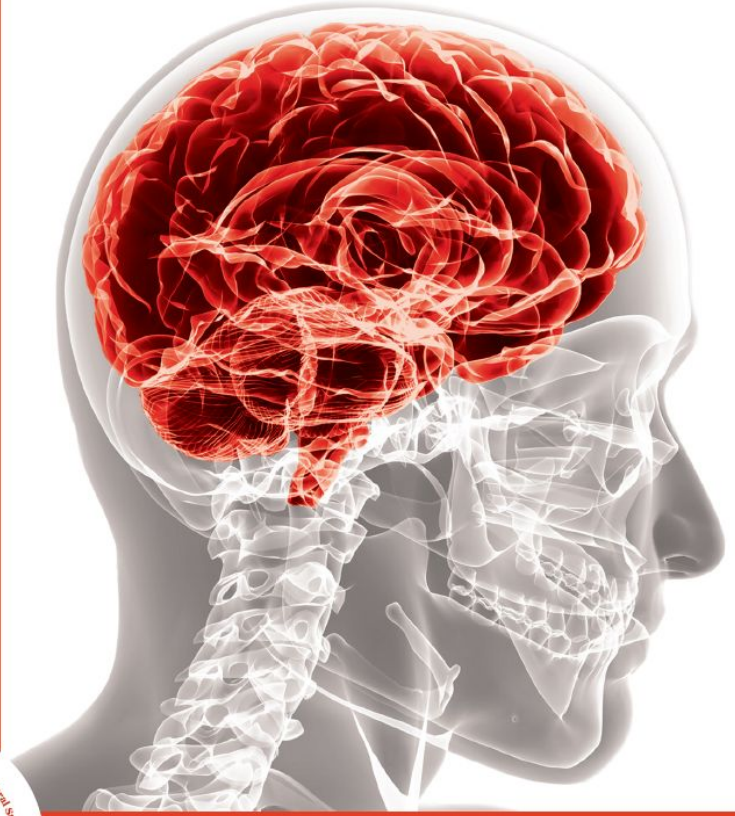
THE RED TEAM HANDBOOK



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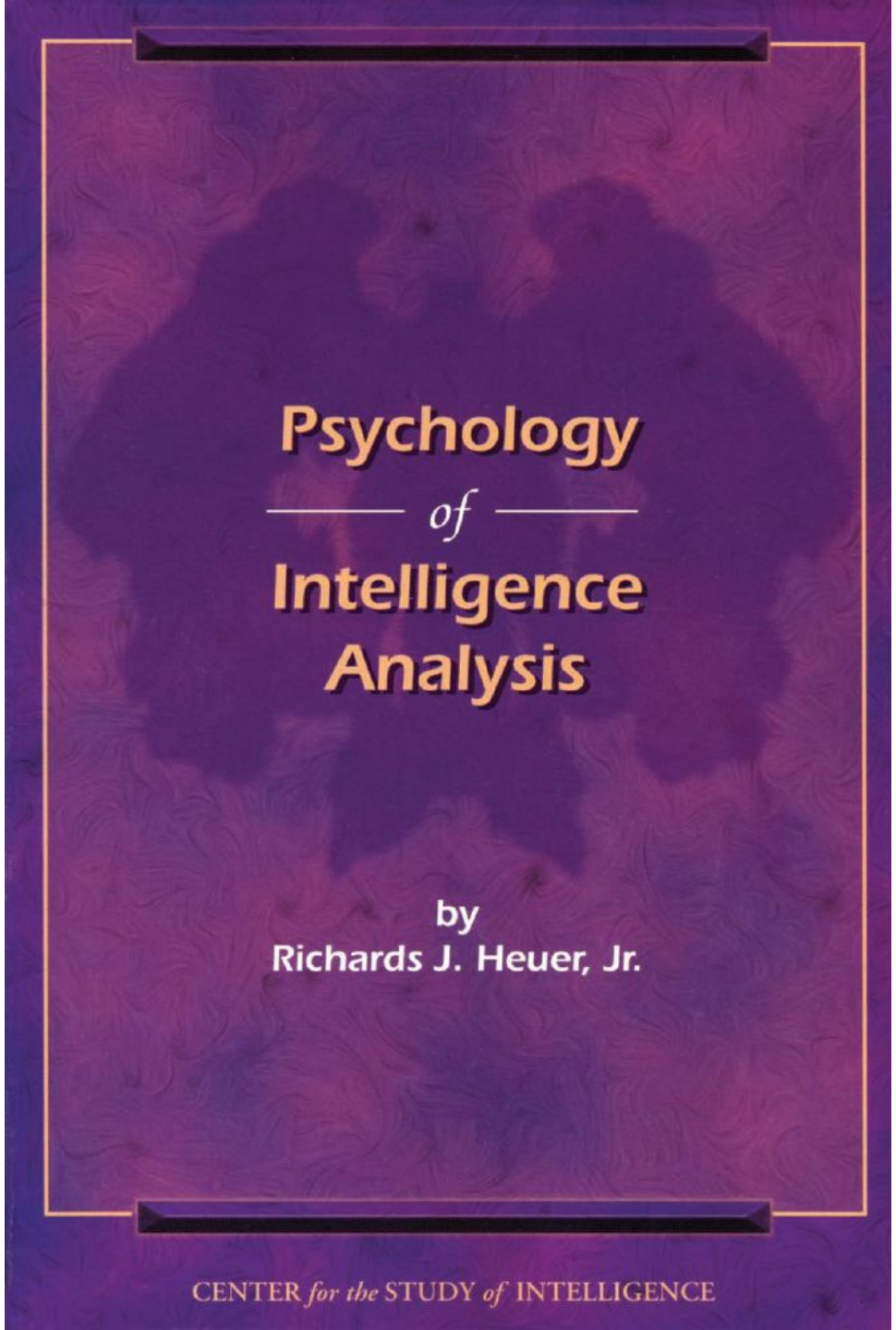
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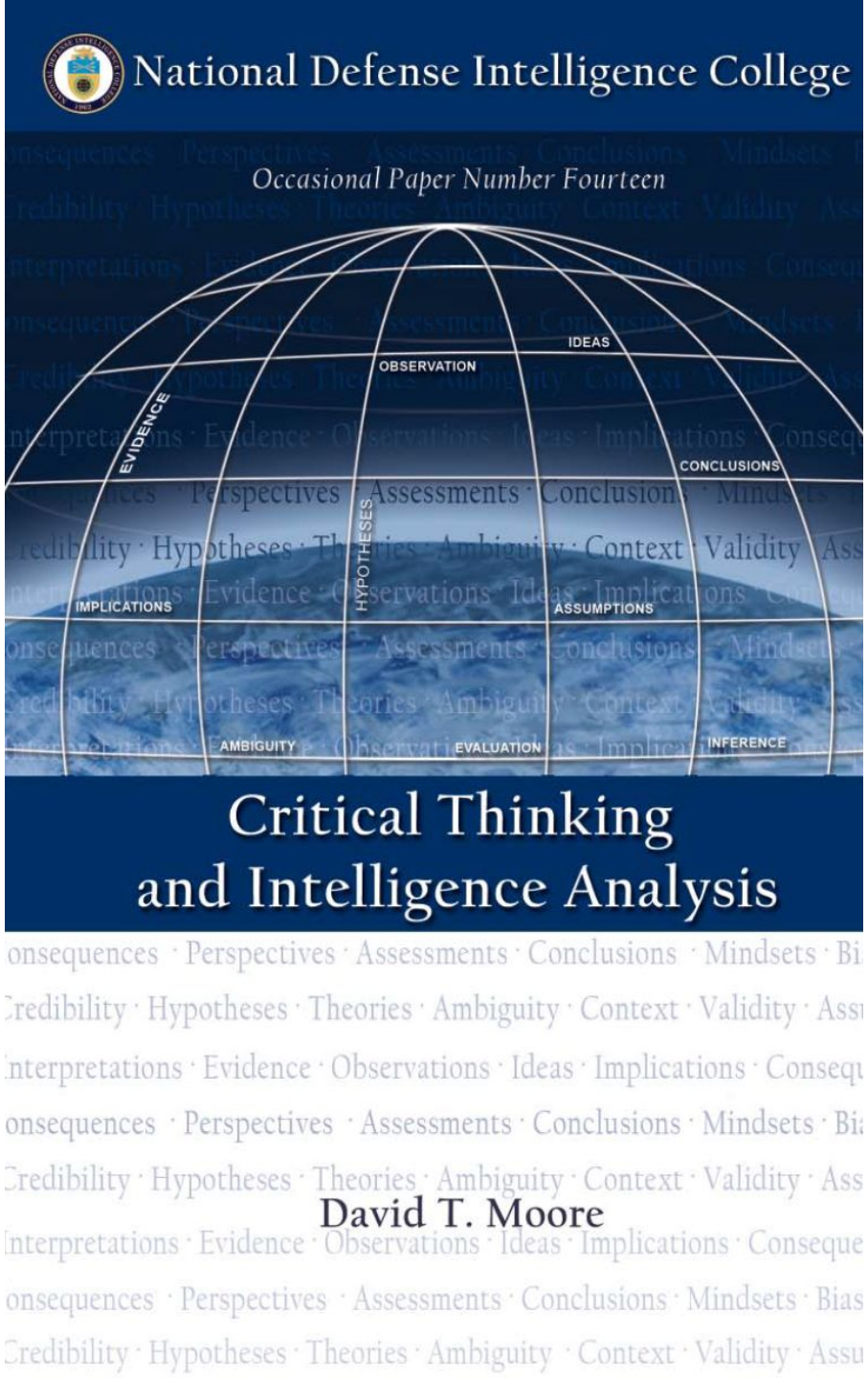
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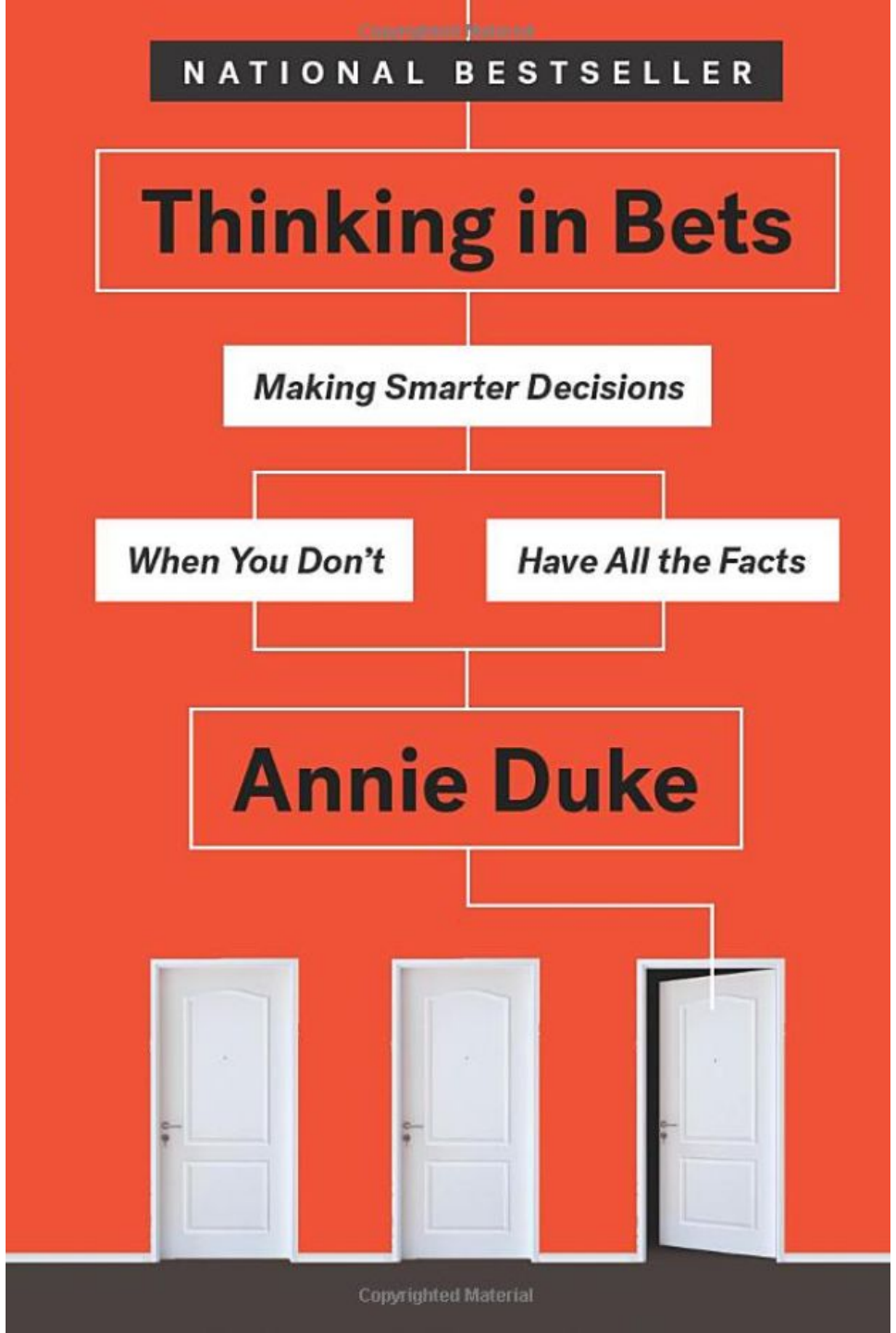
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