

Organizational Learning

15.301 Managerial Psychology

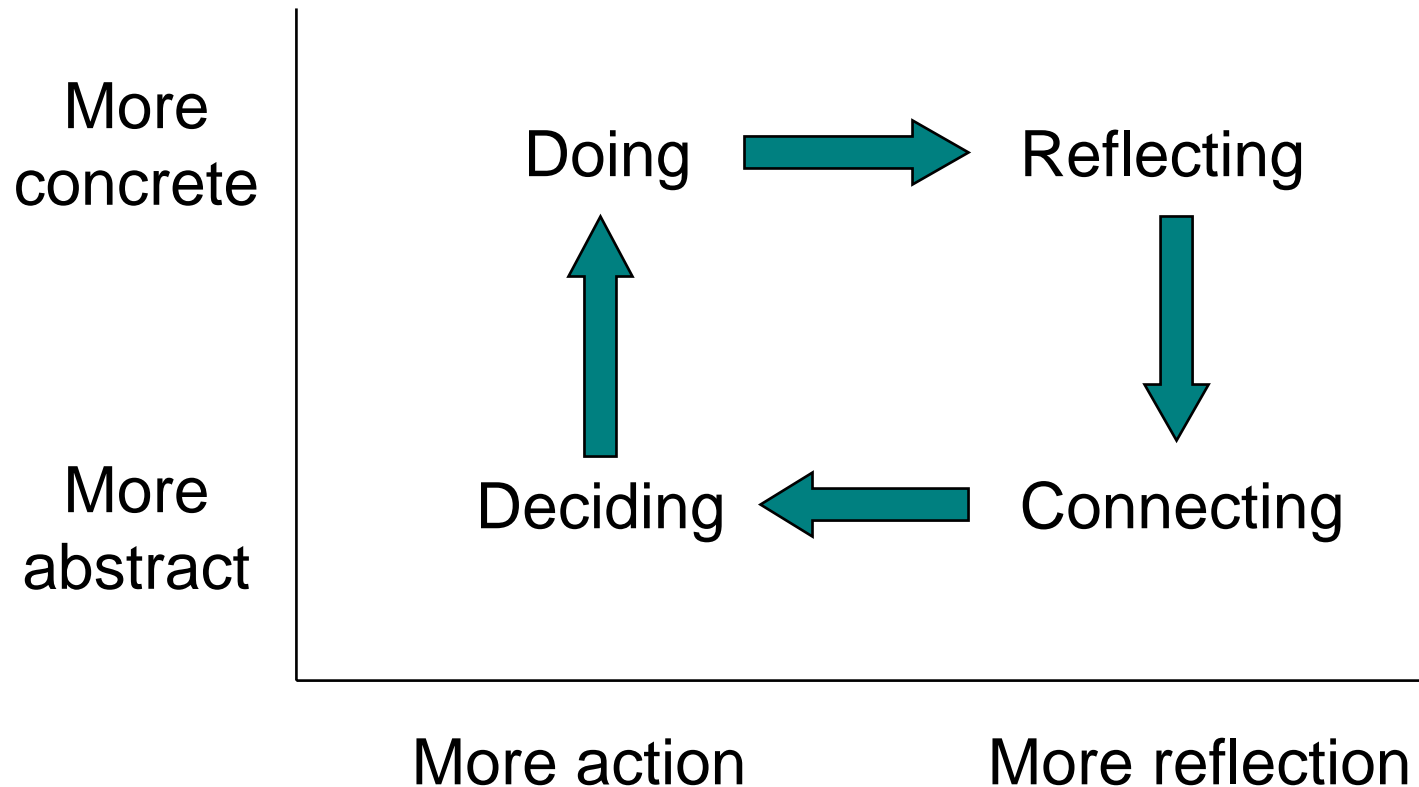
John S. Carroll

How Do People Learn?

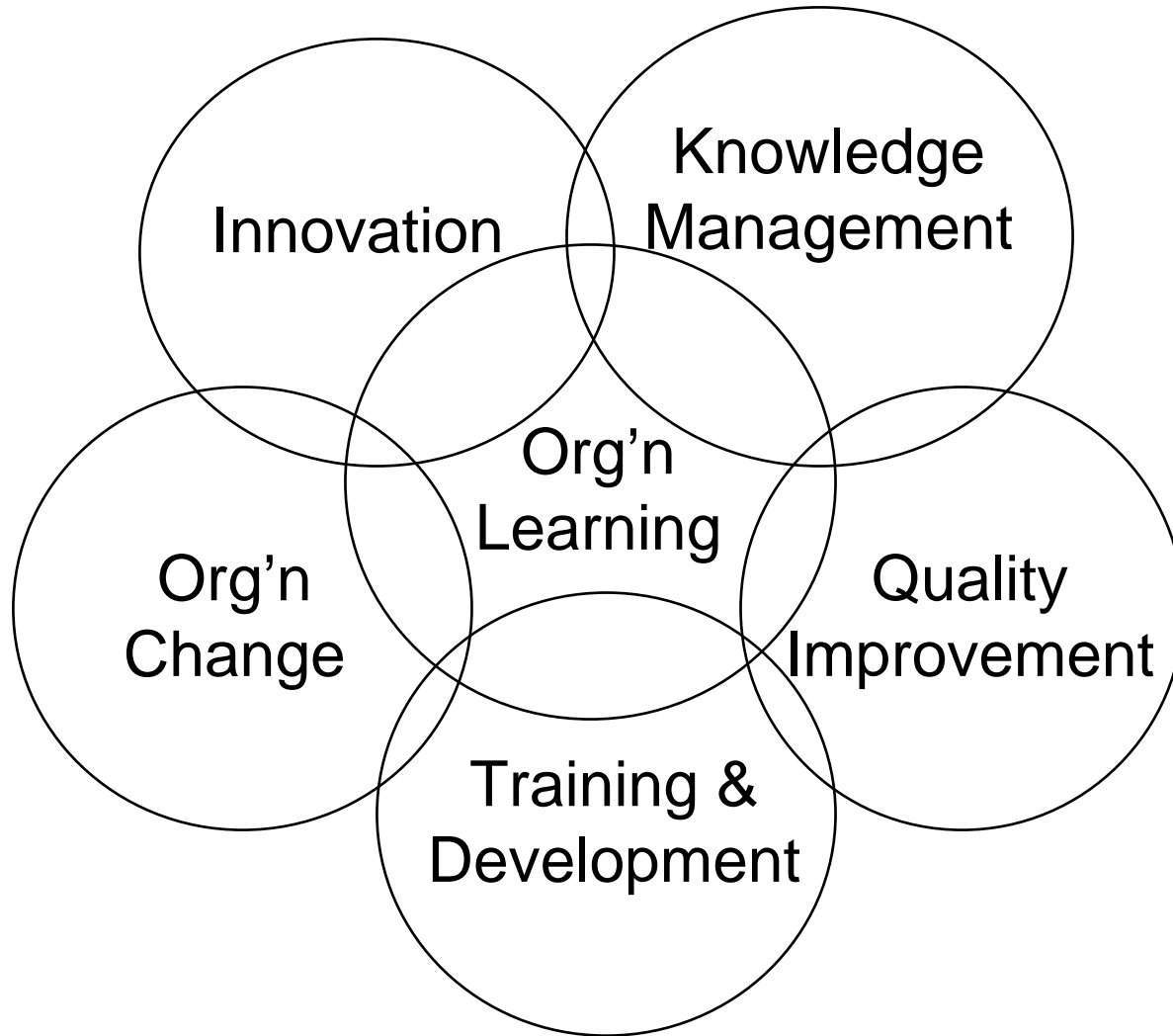
- Trial and error (Law of Effect)
- Practice, practice, practice
- Rote memorization (declarative knowledge)
- Vicarious learning (role models)
- Imaginative rehearsal (simulation)
- “Another name for learning is failure”
- “Knowledge is what you get just after you need it”

How Do Organizations Learn?

(D. Kolb et al.)



Many Labels For Learning



TMI As A Learning Failure

- Three Mile Island
 - ignorant of near misses at other plants
 - previous similar errors at TMI; no steps taken
 - engineers' critique not acted on
- Utility President Herman Dieckamp:

“To me that is probably one of the most significant learnings of the whole accident [TMI] the degree to which the inadequacies of that experience feedback loop... significantly contributed to making us and the plant vulnerable to this accident”

A Learning Failure at NASA

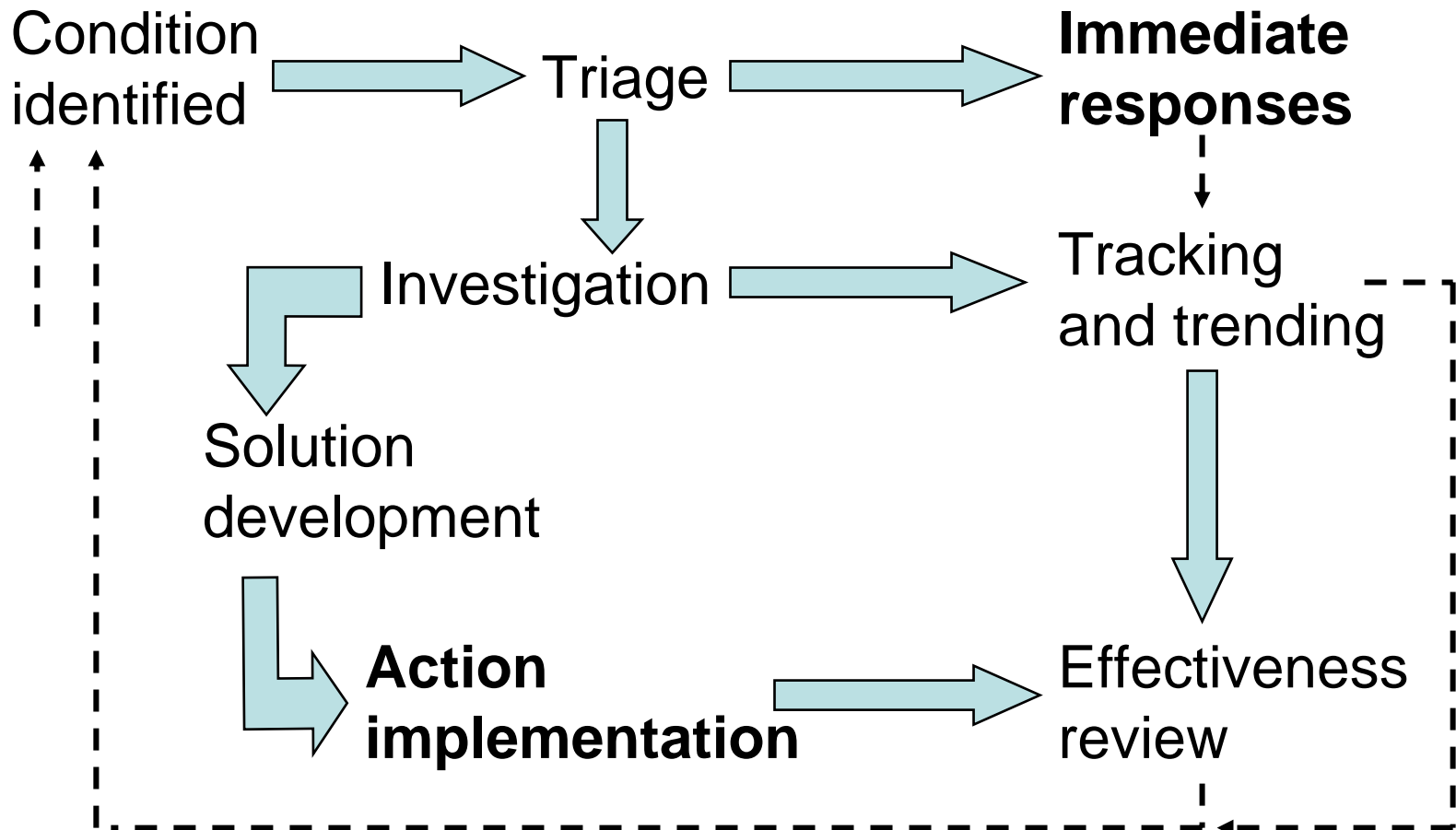
- What was learned from Challenger (1986)?
 - Pressures for production outweighed expertise
 - Normalization of risk (accepting known problems)
 - Back to business as usual; “didn’t get it”
- What happened with Columbia (2003)?
 - More production pressure
 - Leadership that tolerated no dissent
 - Lack of independent voice for safety
 - Safety/quality people are promoted: message?

(From Columbia Commission report, 2003
and Leveson et al, 2004)

Exercises

- ***Jeweler's Problem:*** A woman buys a \$78 necklace at a jewelry store. She gives the jeweler a check for \$100. Because he does not have the \$22 change, he goes to another merchant next door. There he exchanges the woman's check for \$100 in cash. He returns and gives the woman the necklace and her change. Later the check bounces and he must repay the other merchant. He originally paid \$39 for the necklace. What is his net cash (out-of-pocket) loss?
- ***Horsetrading Problem:*** A man buys a horse for \$5000, and sells it for \$6000. He then buys back the same horse for \$7000 and sells it for \$8000. What is his total profit or loss from these transactions?

Corrective Action Process

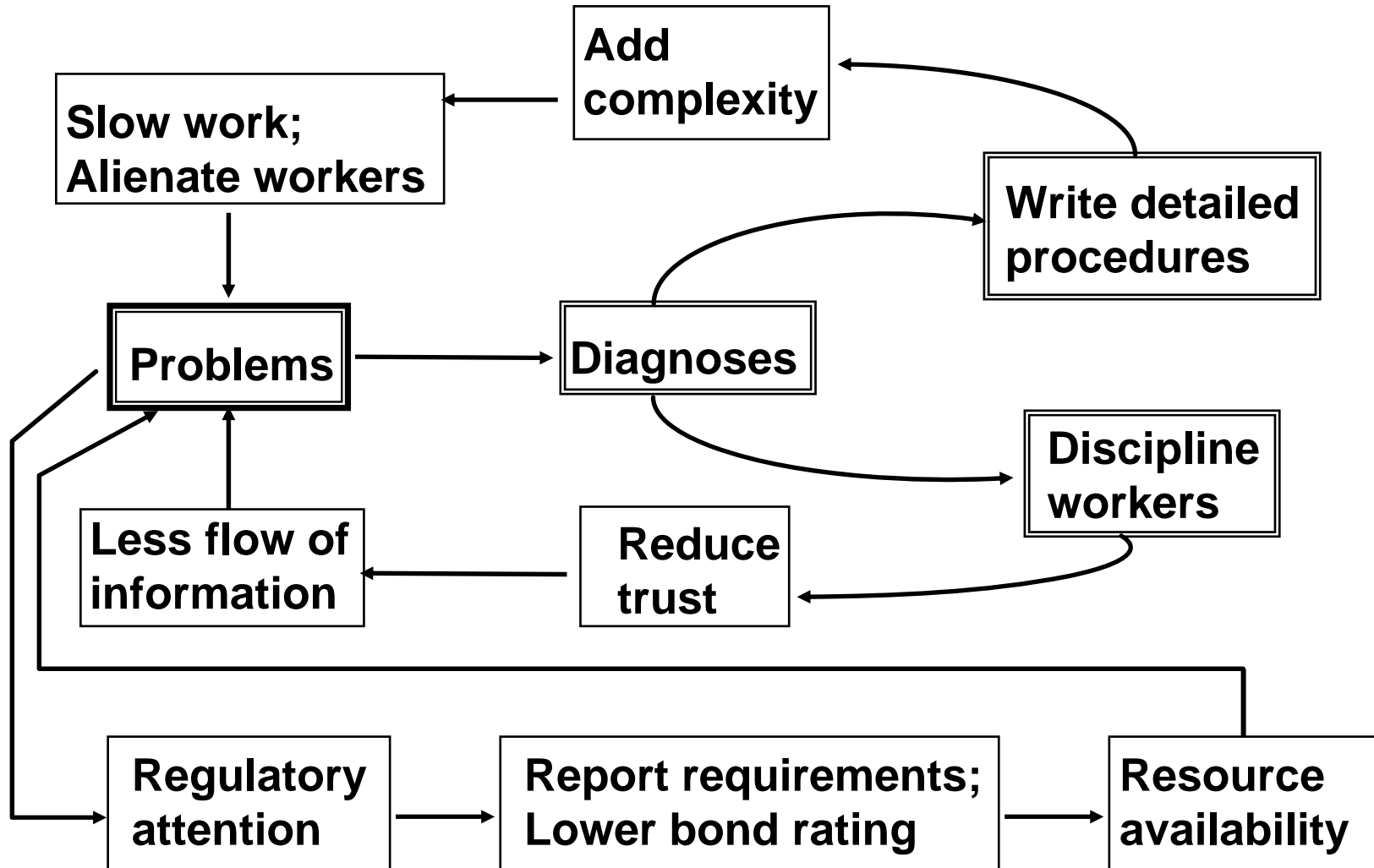


Blame The Troops

- During an outage, a design modification was installed to replace old electromechanical indicators with new computer-based indicators in a nuclear power plant control room
- Operators were trained and told “there is nothing you can do to harm the new system”
- A few months later, an operator entered improper keystrokes and the computer system froze
- Root causes were traced to operators and designers
- Operators were disciplined
- No one in engineering is “singularly responsible”

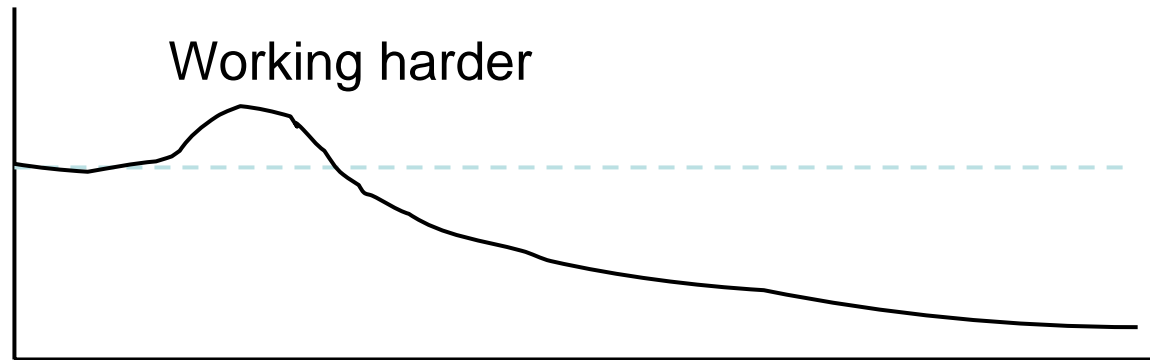
Fixes That Fail

J. S. Carroll, Ind. Env.
Crisis Qtly, 1995, p. 189



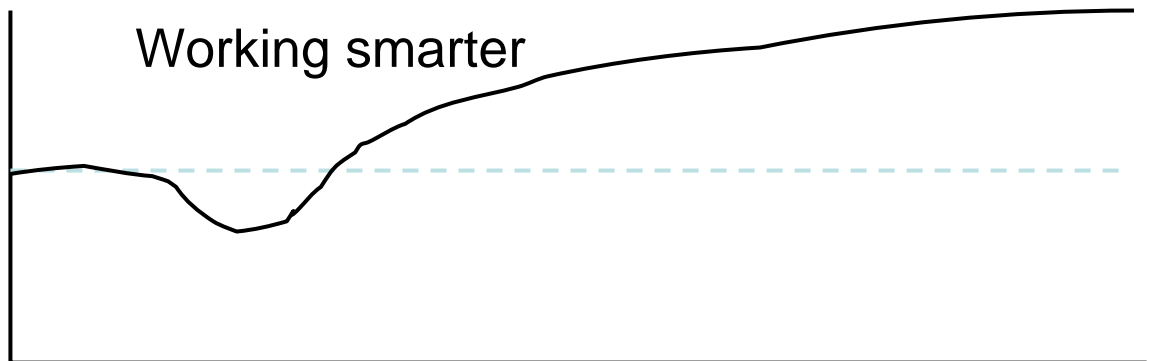
The Capability Trap

Performance



Time →

Performance



Time →

Repenning & Sterman,
Nobody gets credit for
fixing problems that
never happened.

California
Management Review,
2001

Airline Industry Learning

- Safety Reporting System developed to allow pilots (and others) to report problems in a confidential way
- Move away from “pilot error” to understand work systems, career systems, etc.
- Development of Cockpit Resource Management training, now used throughout aviation and increasingly in hospital O.R.s

Health Care Frontier

- IOM reports document 44,000+ preventable deaths per year; medication errors alone contribute to 7,000 deaths annually
- Some mundane problems, e.g., “wrong site” procedures that we know how to fix, e.g., “sign your site”, yet they persist
- And many other problems seem more complex, with unknown fixes

Strategy That Wouldn't Travel

- For Monday, read the case (Beer, 1996)
- What worked in Wichita? Why?
- Use the three lenses, Sloan Leadership Model, and other course concepts to analyze what happened in Wichita
- For Wednesday, re-read the case
- What went wrong in Lubbock? Why?
- This is an opportunity to apply what you have learned!
- I will be cold-calling both days, so be prepared!