Leveraging and Limiting Practical Drift in Emergency Response Planning

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**Trajectory of Talk**

- Procedures “as taught” versus “as enacted”
  - Improvisation
  - The theory of Practical Drift
- Two case studies
  - ATFP for USMC
  - Regional Emergency Management, Centre County
- Implications
Work Practices are Dynamic

• Procedures as taught
  – Standard Operating Procedures (SOP)
  – Static, often out-of-date, sometimes wrong
  – E.g., critical work activity & workplace knowledge is often “hidden”/”invisible”

• Actual procedures as carried out
  – Standard workarounds
  – Opportunities for human development in the workplace (zone of proximal development)
  – Living human practices, evolve to fit changing circumstances
Improvisation as Central

• Studies of work (Suchman, Button, Orr, …)
  
• Improvisation is a key mechanism in learning
  – Practices are appropriated and developed through improvisation
  
• Improvisation is a key mechanism in performance
  – Plans are specifications that are referred to in activity, but *not* merely enacted
Practical Drift

• Workarounds are not systematically “designed” - they are “local innovations”
  – Can expand the zone of proximal development, trigger learning
  – Can result in catastrophic breakdowns - especially wrt inter-organizational coordination

• Snook (2000): friendly fire incident
  – Concepts-in-action drift so far from existent planning that it cannot be effectively utilized
  – The “dark side” of improvisation
Anti-Terrorism 
Force Protection

• Developed decision-support system for resource allocation in ATFP for USMC
  – 4-year study
  – focus groups, design reviews, field studies

• Wide range of users
  – Naval and Marine officers and noncoms and civilian employees
  – notable disparity between planners and responders
Anti-Terrorism Force Protection

• Planners envision scenarios, thought experiments
  – Adhere to standards & best practices of other orgs
  – Integrate diverse sources of specialist knowledge

• Responders
  – Prioritize assets wrt pre-established & ad hoc criteria

• Plans are ‘lossy’ abstractions
  – Designed to be vague for local adaptation
  – Chain-of-command distances planners & responders
  – Normal 3-year billet rotation contributes to knowledge loss
Centre Region EM Planning

- Participatory ethnography
  - Shadowed the Centre Region Emergency Management Coordinator for 18 months
  - Attended planning coordination mtgs
  - Supervised access documents
- Beaver Stadium
  - 110,000 people at PSU football game
- Fire Chiefs Mtg
Centre Region EM Planning

• Emergency Planning
  – Integrate diverse and specialized functional knowledge in planning documents
  – Local (PA) regulations restrict plan dissemination
  – Highly staggered re-planning cycle (>2 yrs)

• Emergency Response
  – Field exercises to practice and assess plans, expensive and infrequent (e.g., failed landing gear)
  – Functional and table-top exercises raise issues (~twice per year)
Practical Drift In Emergency Response

- Planning knowledge is derived from long-term analysis and reflection
- Codified in relative static artifacts
- Hard to revise because rationale not captured or codified
Practical Drift In Emergency Response

- *Response knowledge* is derived from direct, experience in context
- Typically not codified at all (embodied)
- Not fed back to planners
What is new here?

- **Practical drift** as innovation & miscoordination
- More specific than “workflow” studies
  - Inter-organizational alignment
  - Miscoordination of planners and responders
  - In emergency response
- More specific than making work visible
  - Plan rationale not codified
  - Responder experience not fed back to planning
Implications: Limiting and Leveraging Practical Drift

• Communicating plan rationale
  – Tools and practices to encourage creation of backing annotation
  – Motivating scenarios are *boundary objects*

• Reachback and lessons learned
  – Virtual CoPs for planners and responders
  – Marine Corps Lessons Learned System, Army Center for Lessons Learned, Company Command.com
Implications: Limiting and Leveraging Practical Drift

• Concepts-in-action
  – Waterfall view: planning → response
  – Need for a richer relationship between planners and responders

• Co-reflection (cf Schön)
  – Dialectic: norms, values, & codified knowledge, prior experience, interaction with material situation
  – Solutions are negotiated, not derived
Implications: Limiting and Leveraging Practical Drift

- How to enable rationale and co-reflection?
- Organizational issues
  - Reconception of “planner” and “responder” roles
  - Scenario-based rationale & reachback practices
- Technology issues
  - Collaborative systems to facilitate access and awareness
  - E.g., Wiki-enhanced after-action reports and case study repositories
tele-pointers
zoom/re-center map
create shared icons
create shared annotations
copy selection to shared map
shared feature selection
editing interface for shared styles

Shared map prototype

http://127.0.0.1:45688/public/Untitled+SynchronizedMultiView
Questions? Comments? Suggestions? Thanks!

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