

- Why is it so hard to get organizations to use DA methods?
- Why do some managers accept DA with open arms, but others resist?
- Why do some firms adopt DA methods, but others do not?
- *Are we doing something wrong?*

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Who uses Decision Analysis, and Why?

Bob Clemen
Duke University

With Kelly E. See and Guy McCumber

Paper: See, K. E., & Clemen, R. T. (2006). Psychological and organizational factors influencing decision process innovation: The role of perceived threat to managerial power. Draft. Download from: <http://faculty.fuqua.duke.edu/~clemen/bio/work.htm>

Outline

- A survey of senior managers
 - Whom did we survey?
 - What did we ask?
- Results
 - What did we learn?
- *Wait until the end – bonus “short subject”*

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Remember back to 2000

- “Value of DA” – informal survey of 18 DAAG members
- We learned a little about
 - How many, what kind of decisions DA used for
 - Little or no tracking of DA value added
 - Ways DA adds non-monetary value
 - Detractors of DA? (Yes)

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Survey of Senior Managers

- *What factors influence the use of decision analysis (DA) in organizations?*
 - Individual factors
 - Attitude toward change?
 - Aversion to technology?
 - Threat to managerial control and value?
 - Perceived usefulness of DA?
 - Organizational factors
 - Organizational culture of change?
 - Centralized decision making?
 - Lots of formal procedures?
 - Need to justify?
 - Industry environment

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Whom did we ask?

- 160 senior managers
(average experience = 17 years)
- All students or alumni of Duke's Global Executive MBA
- All exposed to decision analysis
- Responded to survey online
- Around 100 questions

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Two Categories of DA

1. Qualitative problem-structuring methods (“soft DA”)

- Understanding objectives, preferences (e.g., “Value-focused thinking”)
- Creating new alternatives (e.g., Strategy tables)
- Strategy tables
- Decision hierarchy
- Influence diagrams
- Including stakeholders (e.g., Dialogue decision process)
- Other group decision making techniques

2. Quantitative and technical tools (“hard DA”)

- Scenario analysis
- Sensitivity analysis (e.g., Tornado diagrams)
- Identifying ranges (best case/worst case) of outcomes
- Probability distributions for outcomes (risk profiles)
- Expert judgment
- Monte Carlo simulation
- Decision trees
- Value of information, control
- Real options
- Optimization methods
- Risk tolerance
- Cost-benefit analysis
- Multiattribute utility
- Decision support systems, “expert systems”
- ... and others

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Basic Results

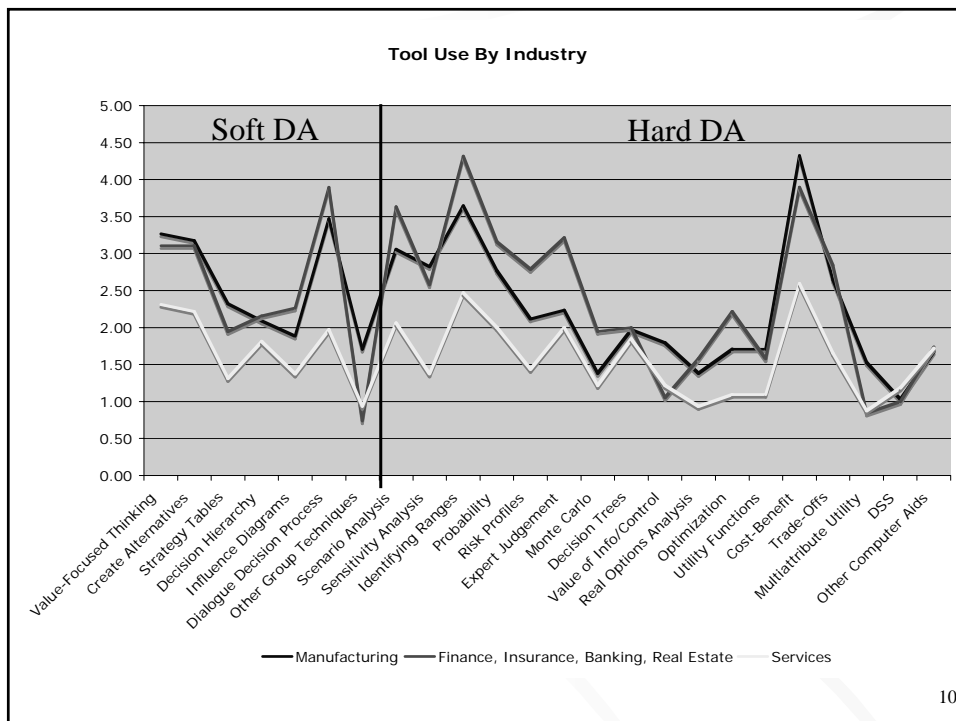
- High incidence of DA use: 70%
- Top qualitative methods:
 - Create alternatives 61%
 - Understand objectives 59%
 - Org process (DDP) 53%
- Top quantitative methods
 - Cost-benefit analysis 68%
 - Ranges of outcomes 63%
 - Scenario analysis 59%

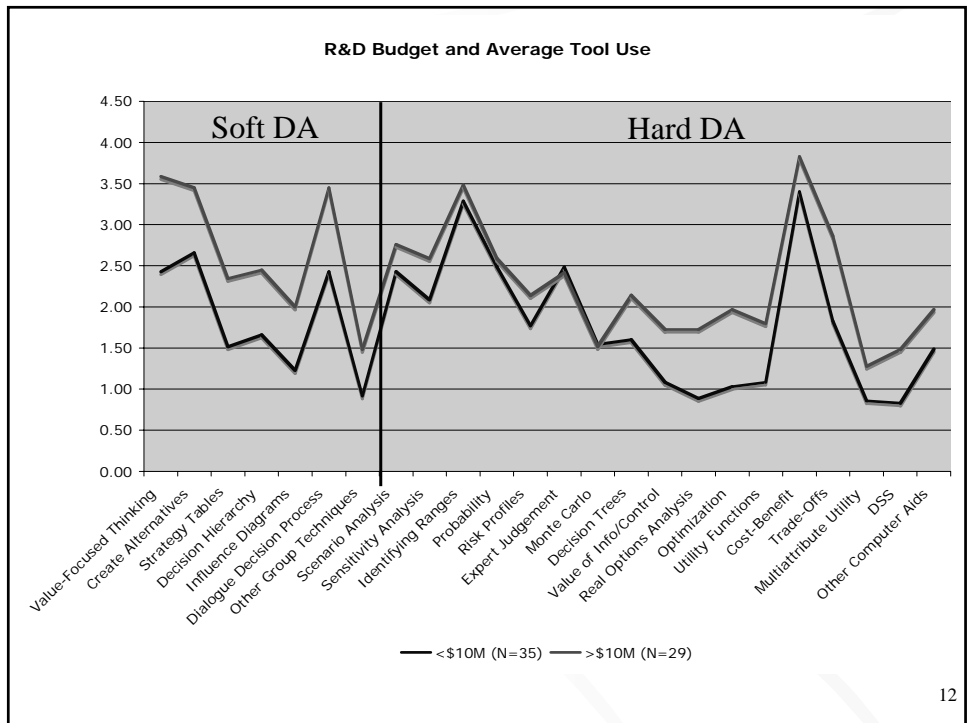
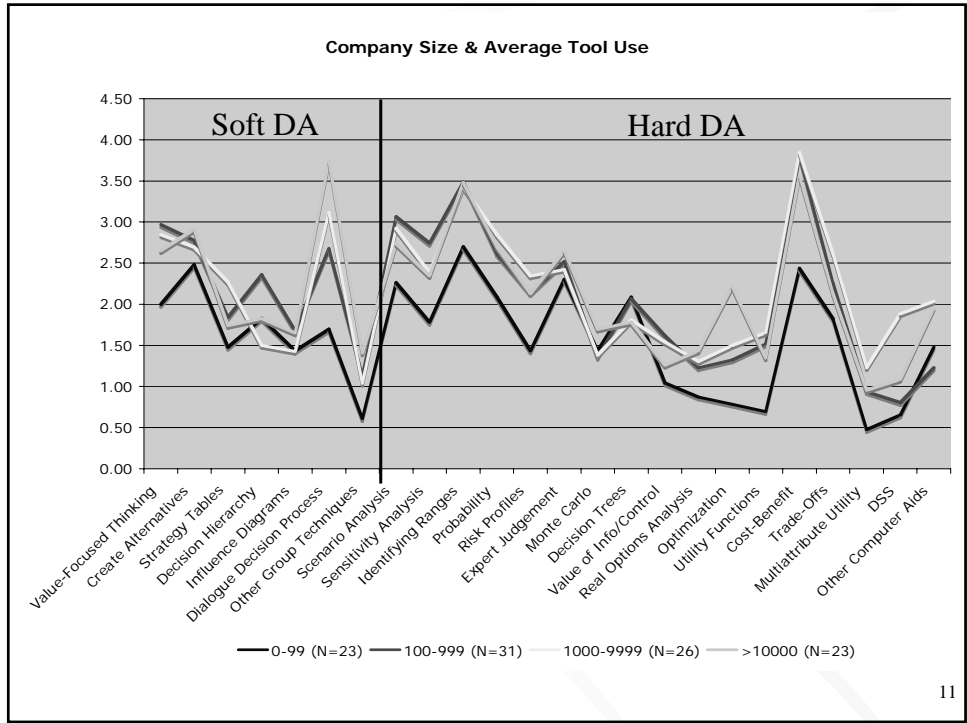
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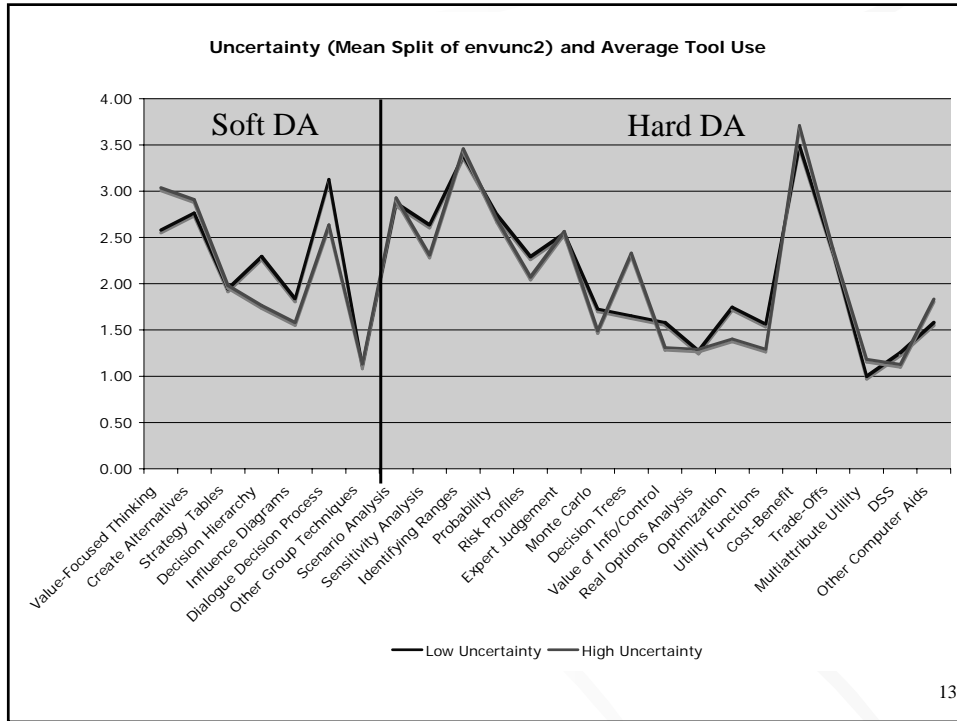
Basic Results

- DA used in 30% of decisions (median)
- 55% “outsource” (use consultants)
- 41% offer training resources
- 36% have standard operating procedures for decision making

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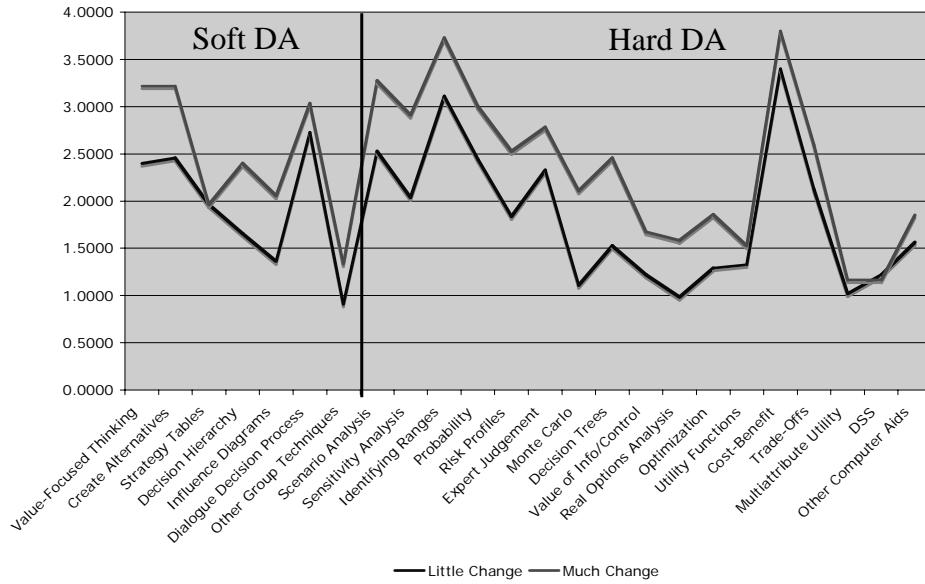
**Results from regression analysis:
Individual-level variables**

• Technical aversion	<u>Relationship</u> negative	↘
• Ease of use of DA tool Demonstrate positive results	positive	↗
• Diminishes managerial value, discretion, control	negative	↘

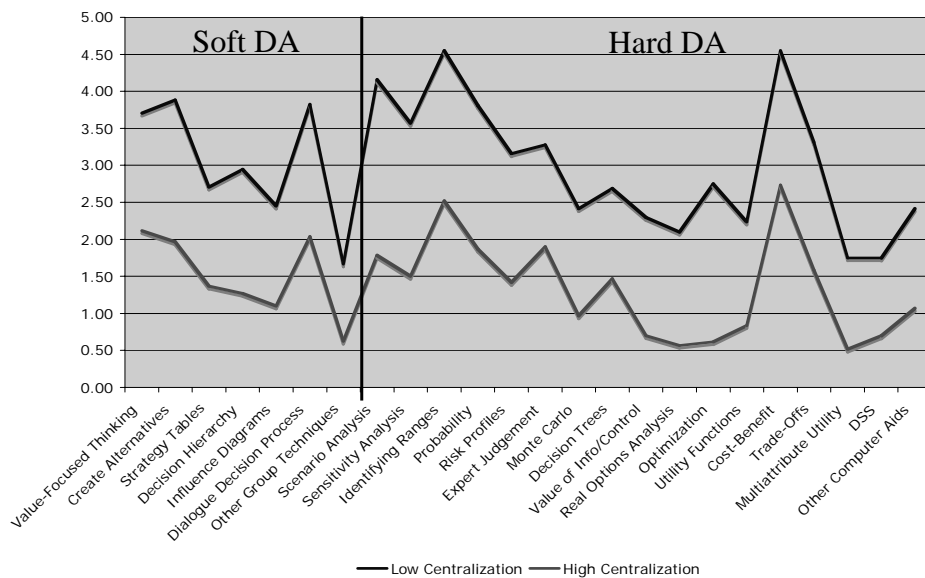
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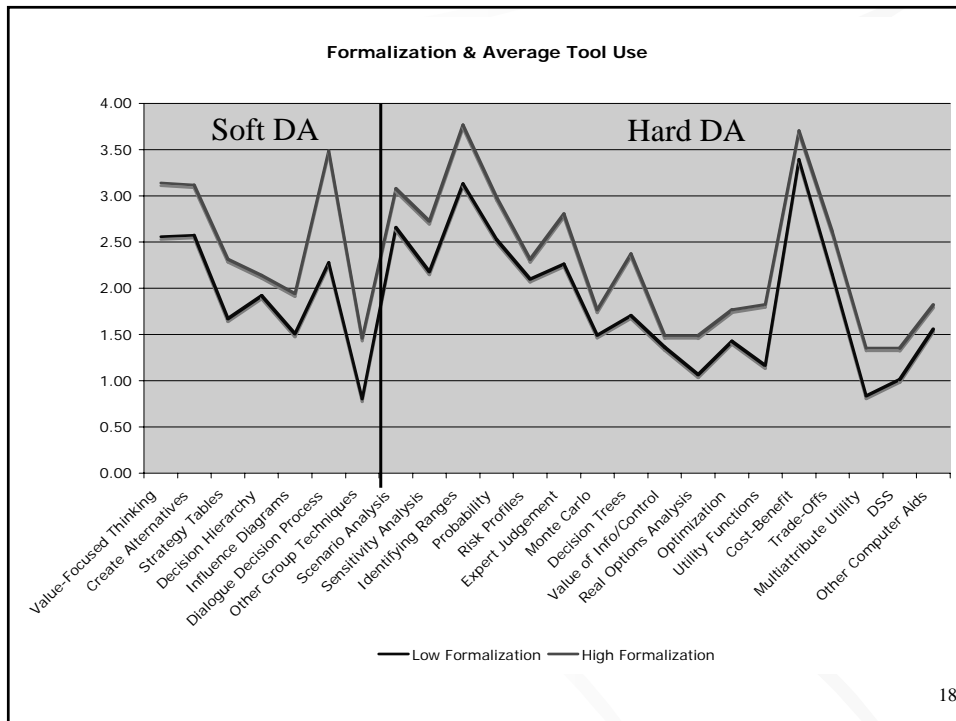
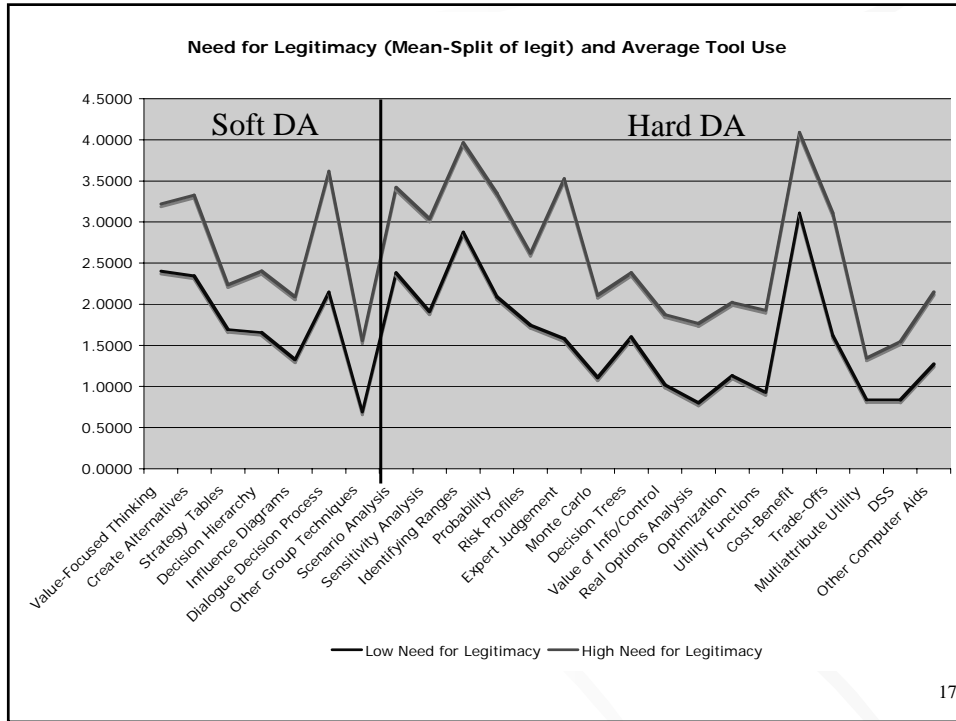
Organization-level variables

Organizational Culture of Change (Mean-Split of "org chang") and Average Tool Use



Centralization & Average Tool Use





But ...

- Low formalization
 - Perceived threat matters. More perceived threat, less DA use
- High formalization
 - Perceived threat doesn't matter
- Why?

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Implications

- Some variables make sense
 - Individual: Tech aversion, ease of use, perceived threat
 - Organizational: Legitimacy, Org change culture
- Others may be less obvious
 - Low centralization
 - Formalization \times perceived mgr threat
- Consider doing an organizational “audit”
 - Highlight strengths and weaknesses of the organization
 - Develop implementation plan guided by audit results

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Bonus “Short Subject”

- Rex Brown’s recent *Interfaces* article, “The Operation was a Success but the Patient Died.”
 - Argues that outside consultant’s priorities may differ from client’s → Failure of DA project.
- We asked questions that can be used to address this:
 - Does your organization outsource DA (use consultants)?
 - In your experience, has DA been poorly executed?
- Some research questions:
 - Outside consultants vs. in-house DA experts?
 - What about external consultants? How many different tools used?

NO EFFECT

Stay tuned! ...

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