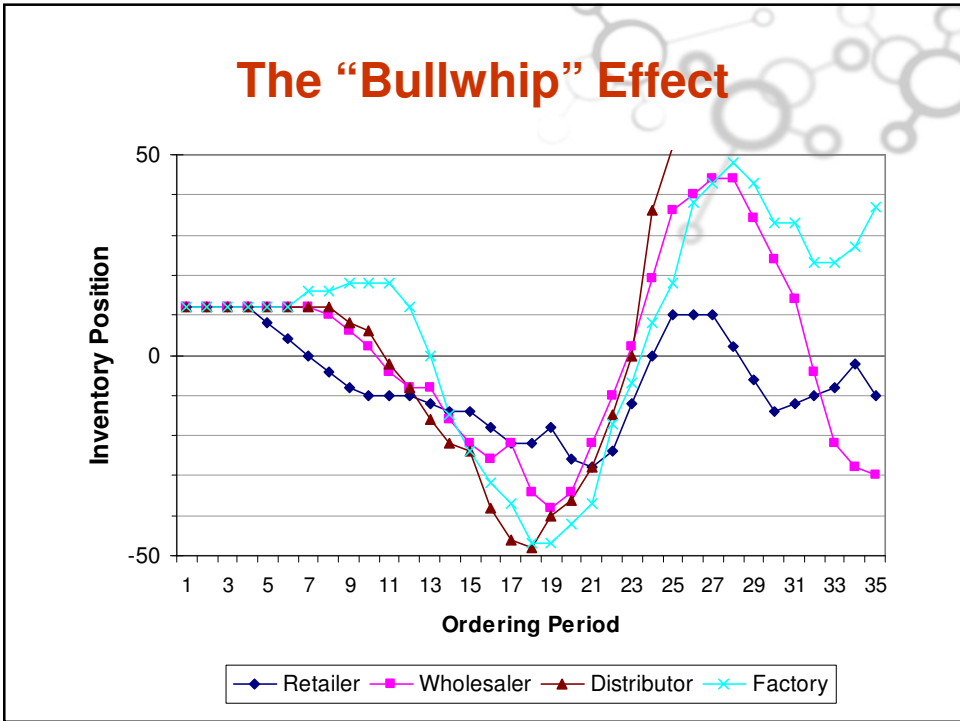


## Decision-Making in the Supply Chain: The Impact of Cognitive Thinking Styles and Problem Complexity

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## Motivation of Study: Causes of Bullwhip Effect

- **Operational:**
  - Lack of POS information
  - Poor inventory management practices
  - Rationing behavior
  - Price variation
- **Behavioral:**
  - Lack of worker training programs
  - Poor top management leadership
  - Not collaborating with other SCM members
  - Taking a silo-oriented view of SCM

Can you relate to any of these as purchasing managers?

## Motivation of Study

- **“More work is also needed to understand the relationship between individual characteristics (such as patience, risk-neutrality, and abstract thinking) and performance on supply-chain tasks”** (Croson and Donohue 2002, p. 82).
- **Study integrates concepts from SCM and psychology** (Gino and Pisano 2008; Boudreau, Hopp, McClain and Thomas 2003).

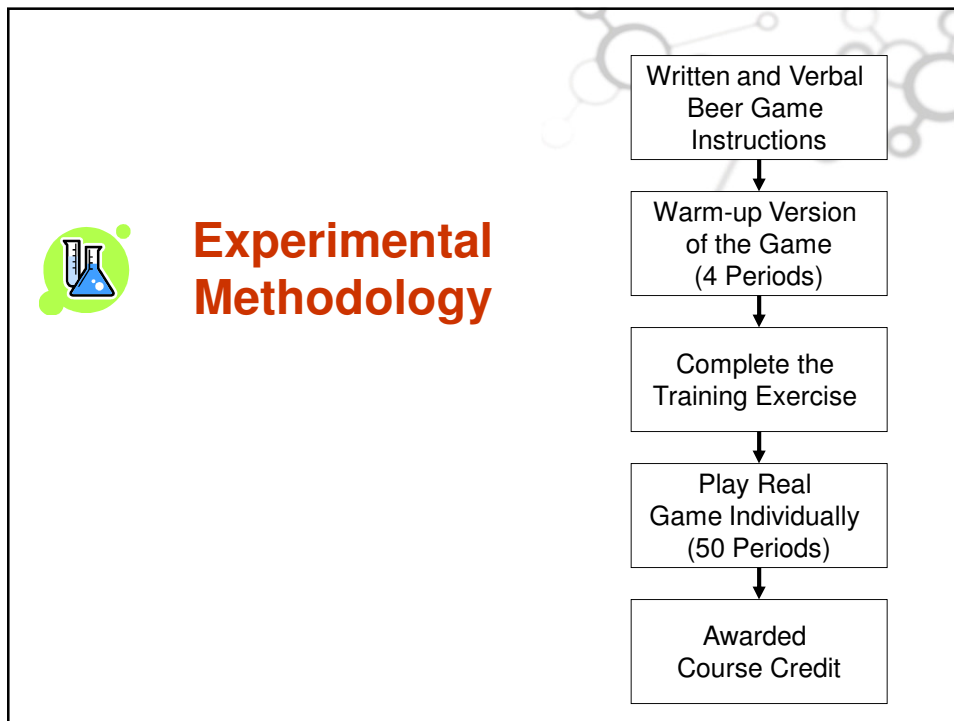
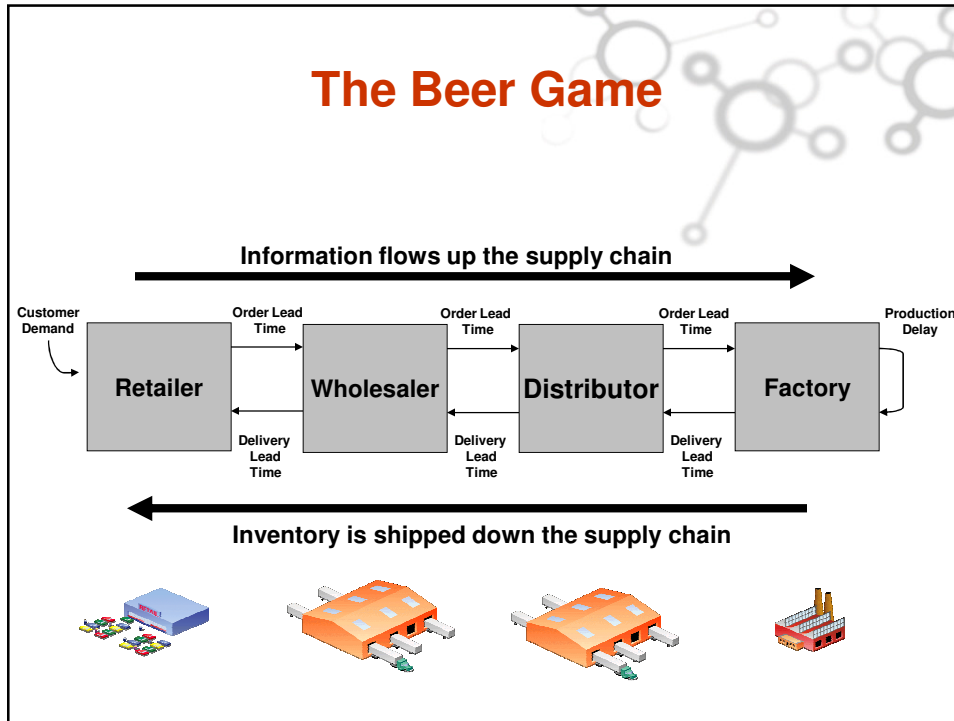
## Abstract and Concrete Thinking

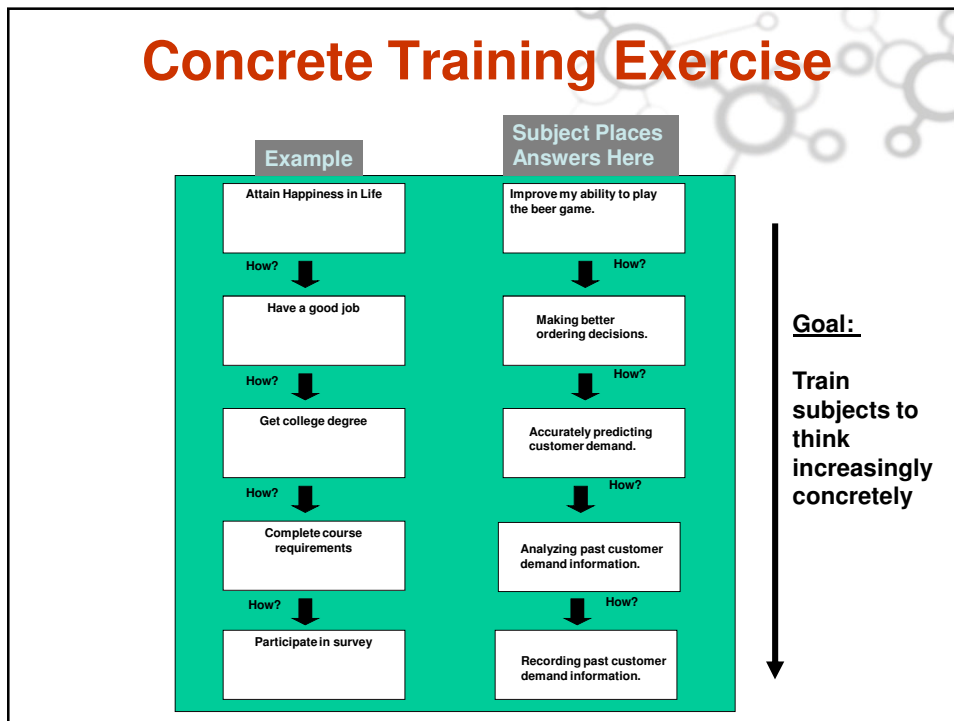
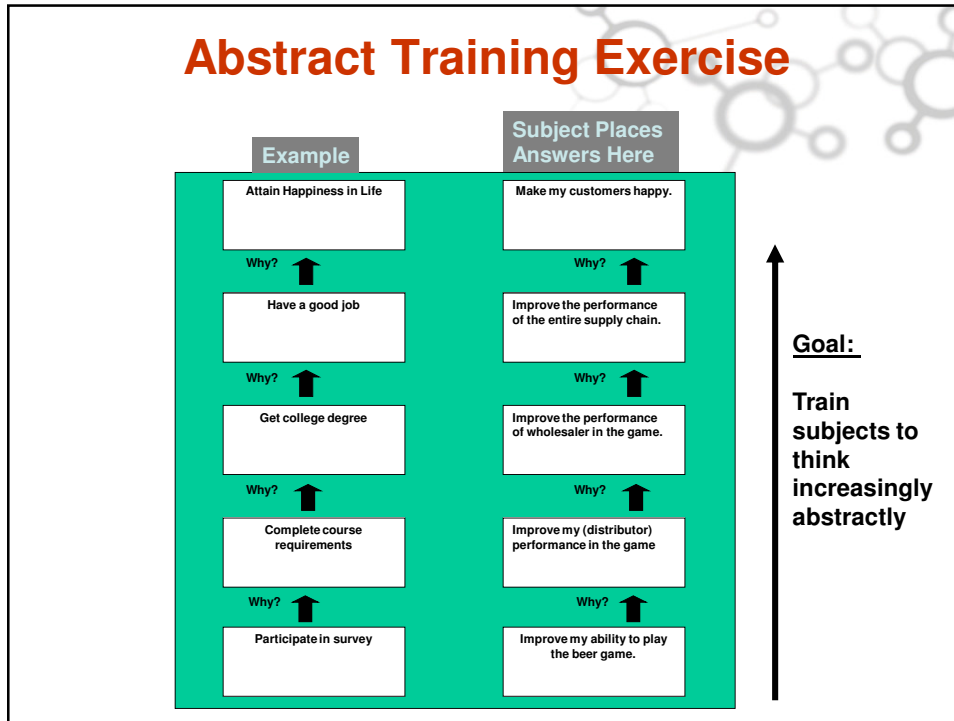
- **Abstract thinking individuals** (Lieberman et al. 2002):
  - Take a “systems approach” to solving problems.
  - Openness to learning and experimenting with different ideas.
  - Develop creative alternatives to a problem.
  - Able to adjust to changes in the external.
- **Concrete thinking individuals** (Lieberman et al. 2002):
  - Take a functional approach to address an operational problem.
  - Consider the immediate circumstances when making decisions.
  - Focus on details and information at hand to develop immediate solutions.

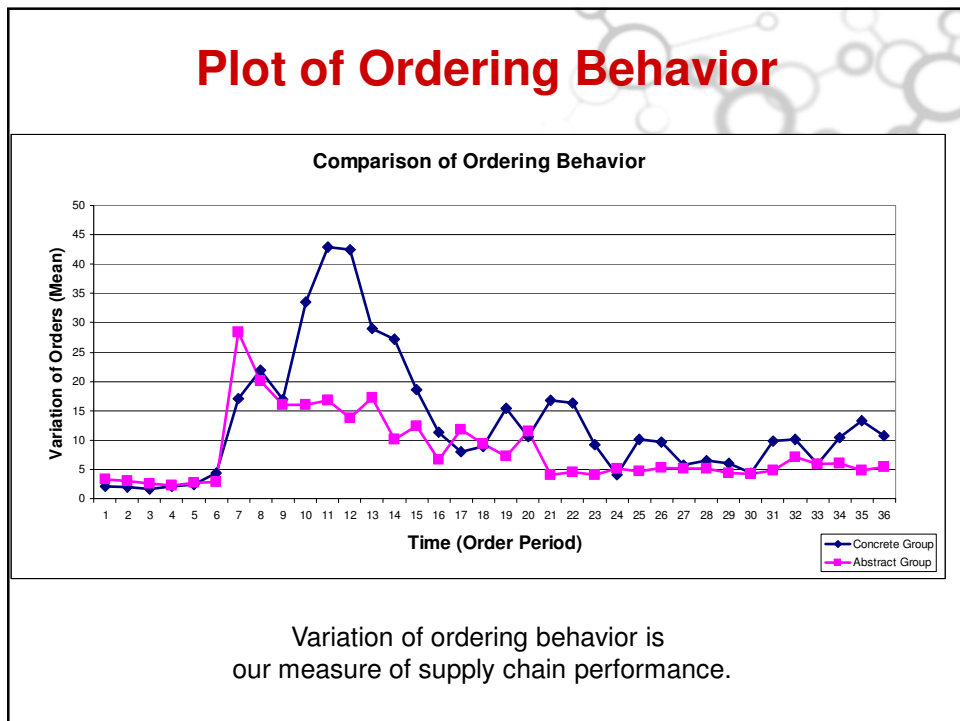
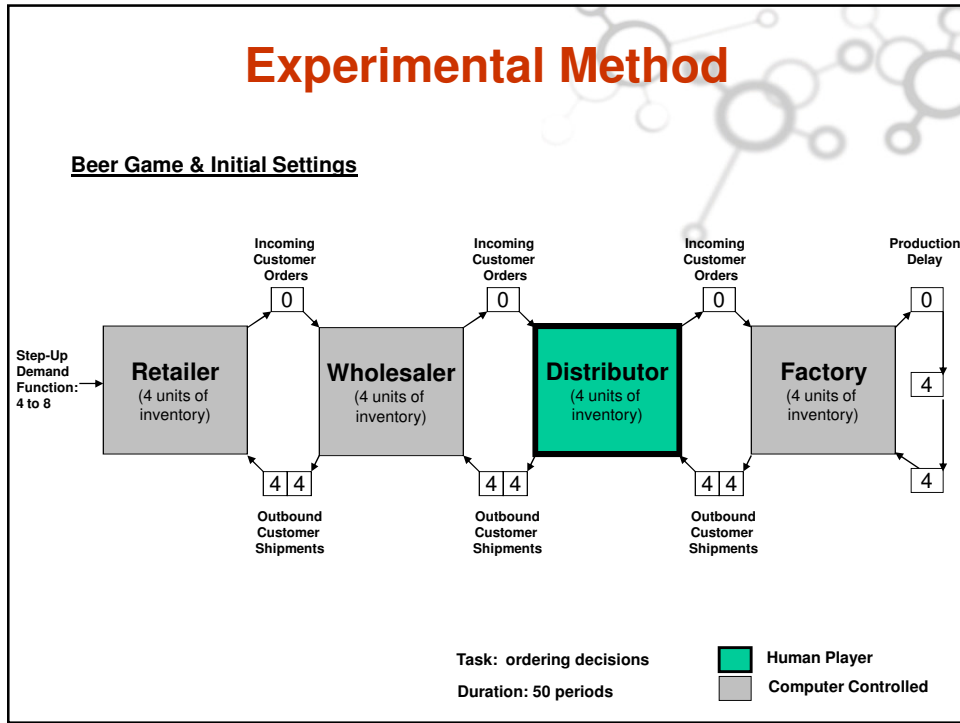
## Research Questions

*Do individuals who think abstractly generate a lower variation of orders than individuals who think concretely?*

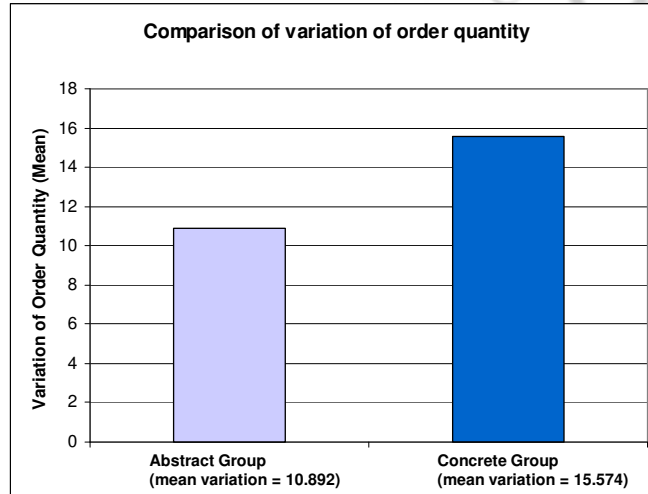
*Do individuals who think abstractly generate lower total supply chain costs than individuals who think concretely?*





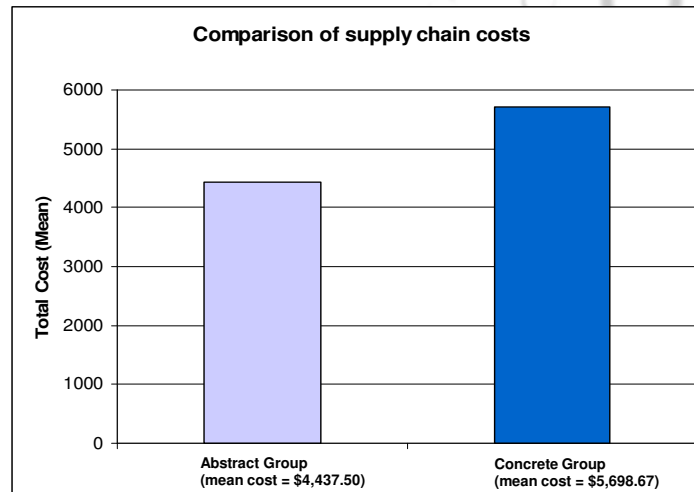


## Results



As expected, we find that the abstract group achieves a lower variation of orders as compared to the concrete group.

## Results



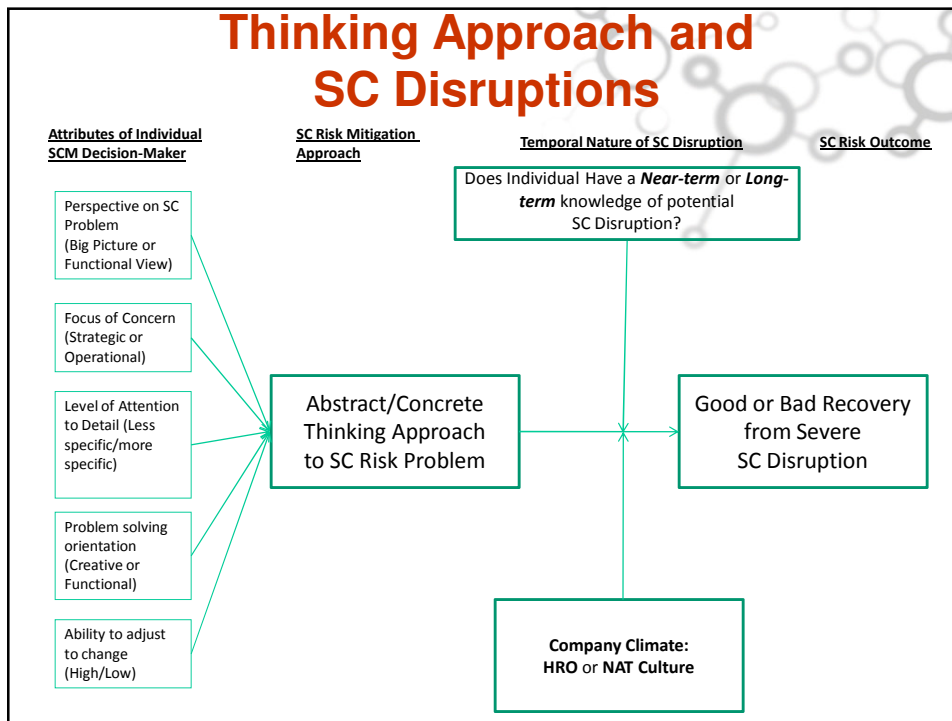
As expected, we find that the abstract group achieves a lower total supply chain cost as compared to the concrete group.

## Discussion

- Established a link between abstract thinking and supply chain performance on an ordering decision task.
- Subjects were trained to think *increasingly* abstractly.
- Subjects applied abstract thinking approach to supply chain task.
- Training subjects to take a “big picture” approach to supply chain management can enhance the performance of the overall supply chain.



## Thinking Approach and SC Disruptions



## Contribution of Study

- First published SCM study which shows that a cognitive thinking approach does contribute to supply chain performance using experimental psychology method.
- Responds to call for behavioral SCM research by Croson and Donohue (2002):
  - “More work is also needed to understand the relationship between [...] abstract thinking and performance on supply-chain tasks.”
- Findings complement and contribute to the stream of behavioral SCM literature.

## Implications for Purchasing Managers

- What examples from your company have you seen where a differentiation in thinking types could be seen?
- In what types of situations was this most readily apparent?
- What affect did the differences have?



