Demystification of Cognitive Insight: Opportunistic Assimilation and the Prepared-Mind Perspective
(Seifert et al., 1993)

Culture and Systems of Thought: Holistic Versus Analytic Cognition
(Nisbett et al., 2001)
Insight

- “Seeing and understanding the inner nature of things clearly, especially by intuition.”
- Aha! moments
- Focus on subconscious nonanalytic processes
Connect all dots with 4 successive lines without lifting pencil from paper.
Aha!
Previous Research on Insight

Prepared Mind

Business as Usual
• Normal mental processes
• Insight is unimportant
• Straightforward application of knowledge

Wizard Merlin
• Insight only occurs in a few
• Almost supernatural
  • Tied to genius
  • Richard Feynman
Prepared Mind Perspective

- No supernatural powers but true insight occurs in some occasions
  - Researchable

- Phases:
  1. Mental Preparation
  2. Incubation
  3. Illumination
  4. Verification
Studying Preparation and Incubation

**Preparation Phase**
- Study failures
  - Ignore stored information
  - Information is not used correctly
- Role of memory organization?

**Incubation Phase**
- Conscious-work hypothesis
- Fatigue-dissipation hypothesis
- Selective-forgetting hypothesis
- Subconscious random-recombination hypothesis
Opportunistic Assimilation

- Focuses on mental preparation and incubation phases

- Two main mechanisms
  - Failure indices caused by impasses (mental preparation)
    - Long-term memory traces
  - Exposure to new and relevant information critical (incubation)
    - External and fortuitous
Two experiments

- Answering problematic factual questions
  - Prediction: Exposing people to relevant new information after initial failure attempt will best promote successful solutions
Two experiments

- Answering problematic factual questions
Two experiments

- Remembering failed solution attempts
  - People should remember problems that resulted in impasses better than completed or interrupted before reaching impasse
Two experiments

- Remembering failed solution attempts
Conclusions

- Hypothesis supported by both studies
- Opportunistic assimilation is good explanation
- New model:
  - Information-processing model of insight
New model

- **Preparation**
  - Confrontation with a problem, construal of failure, storage of failure indices, suspension of processing

- **Incubation**
  - Intermediate, external exposure to information, retrieval of failure indices

- **Illumination**
  - Interpretation and assimilation, INSIGHT!
Shifting focus....

Holistic vs. Analytic Cognition
Holistic vs. Analytic Cognition

- Main idea: cultural background and beliefs can impact cognition
  - It is important to remember who you are dealing with

- Contrasting cognition in societies descended from Ancient Greece (analytic) and Ancient China (holistic)
Ancient Greece
- Individual
- Debate important
- World can be explained via rules

Ancient China
- Collective agency
- Harmony
  - Debate not good
- Technologically advanced
  - Practical rather than formal models
<table>
<thead>
<tr>
<th>Analytic</th>
<th>Holistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object-centered</td>
<td>Look at the whole environment rather than object only</td>
</tr>
<tr>
<td>Tying object to category</td>
<td>Relationships between object and field important</td>
</tr>
<tr>
<td>important</td>
<td></td>
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<tr>
<td>Can use rules and formal</td>
<td></td>
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<tr>
<td>logic to decipher and predict</td>
<td>Experience based</td>
</tr>
<tr>
<td>behavior</td>
<td></td>
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<tr>
<td>Lack of contradiction</td>
<td>Dialectical reasoning</td>
</tr>
<tr>
<td>No role of context</td>
<td>Change, Contradiction, “Middle Way”</td>
</tr>
</tbody>
</table>
How does social organization impact cognitive processes?

- **Indirectly**
  - Different parts of the environment are subject to attention
    - Holistic (Asian): Field
    - Analytic (American): Object

- **Directly**
  - Some types of social communication are more acceptable
    - Holistic: Conflict should be resolved (Middle Way) or transcended
    - Analytic: Debate and logic
Modern studies

- **Attention**
  - Holistic: Whole, better at detecting relationships (covariation), field dependent
  - Analytic: Part (object) centered, field independent

- **Control**
  - Analytic: Illusion of control

- **Explanation**
  - Holistic: Situational and context factors
  - Analytic: Fundamental Attribution Error
Modern studies

- Prediction and “postdiction”
  - Holistic: Larger pool of potential explanations for event, less surprise, hindsight bias
- Relationships and similarities versus rules and categories
  - Holistic: A is part of B
  - Analytic: A and B are both Xs, category learning
Modern studies

- Logic versus experiential knowledge
  - Holistic: Experiences important
  - Analytic: Ignore past behavior if needed, formal logic

- Dialectics versus law of noncontradiction
  - Holistic: Harmony, seek compromise and continuity
  - Analytic: Reject contradictions, strengthen one proposition to eliminate contradiction
Conclusions and implications

- Cognition can be manifested differently across cultures
- Same toolbox, different tools?
  - Processes are same, but use of processes differ
- Results from cognitive studies should only be applied to appropriate populations