

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

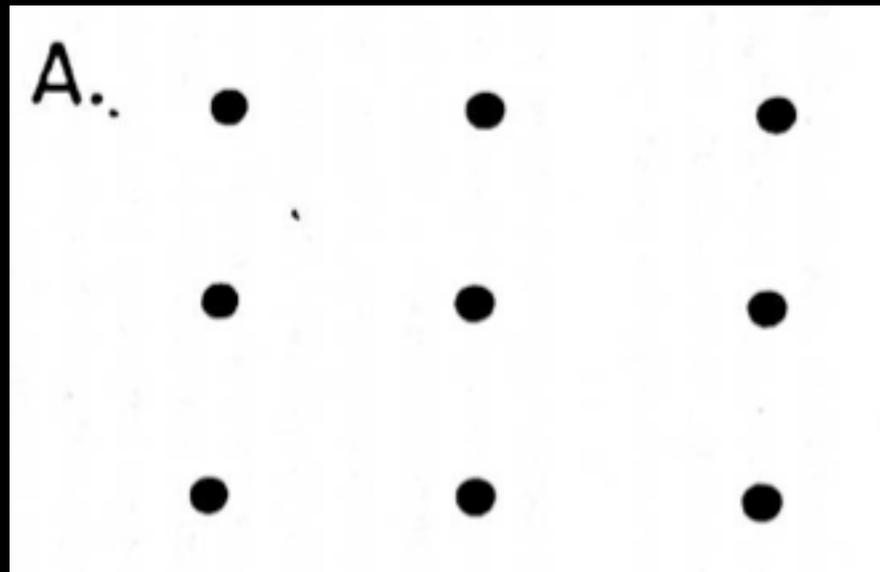
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Culture and Systems of Thought: Holistic  
Versus Analytic Cognition  
(Nisbett et al., 2001)

# Insight

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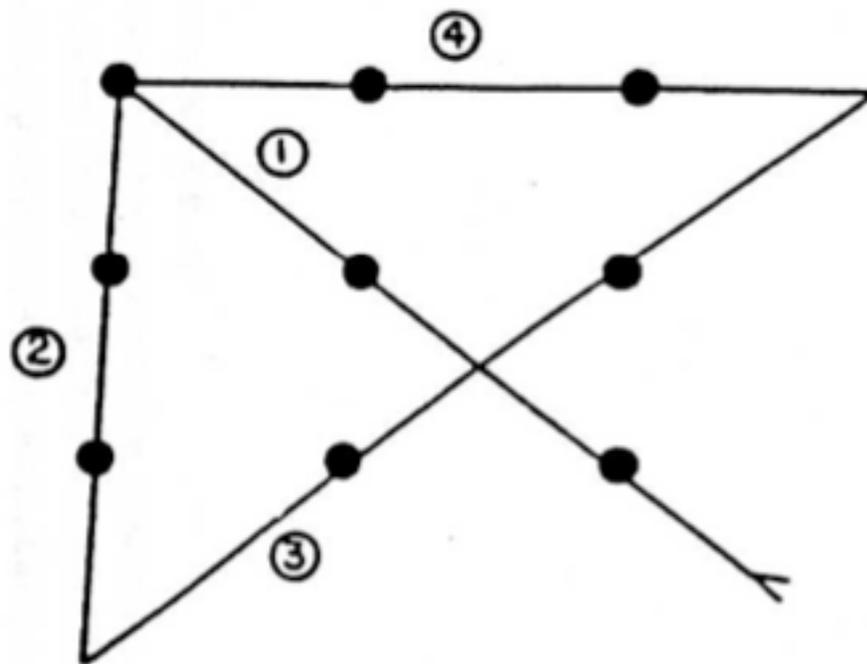
- “Seeing and understanding the inner nature of things clearly, especially by intuition.”
- Aha! moments
- Focus on subconscious nonanalytic processes



Connect all dots with 4 successive lines without lifting pencil from paper.

Aha!

B.



# Previous Research on Insight

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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

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- 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

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## ■ 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

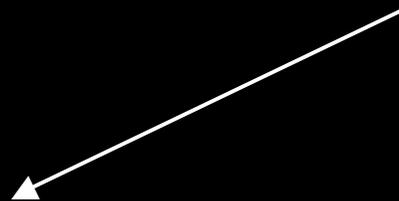
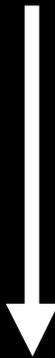
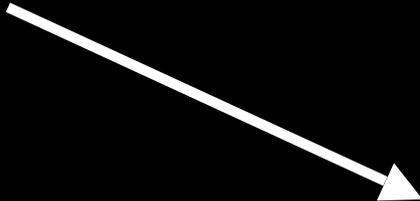
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Prepared Mind



Business as Usual

Wizard Merlin



Opportunistic Assimilation

# Opportunistic Assimilation

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- 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

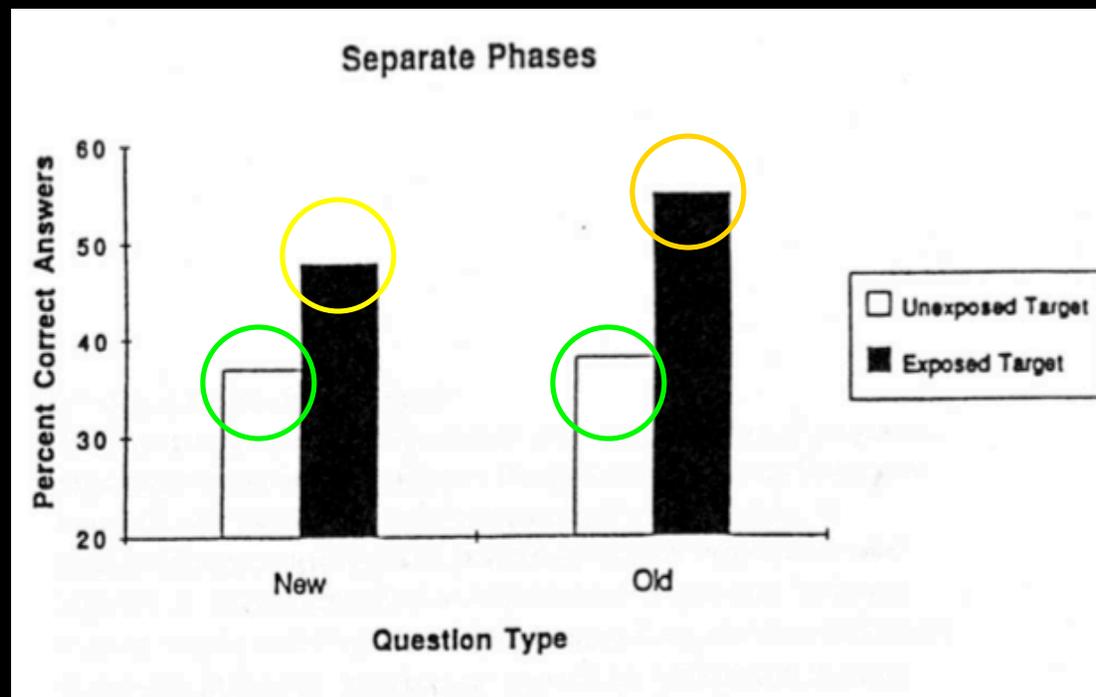
# Two experiments

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- 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

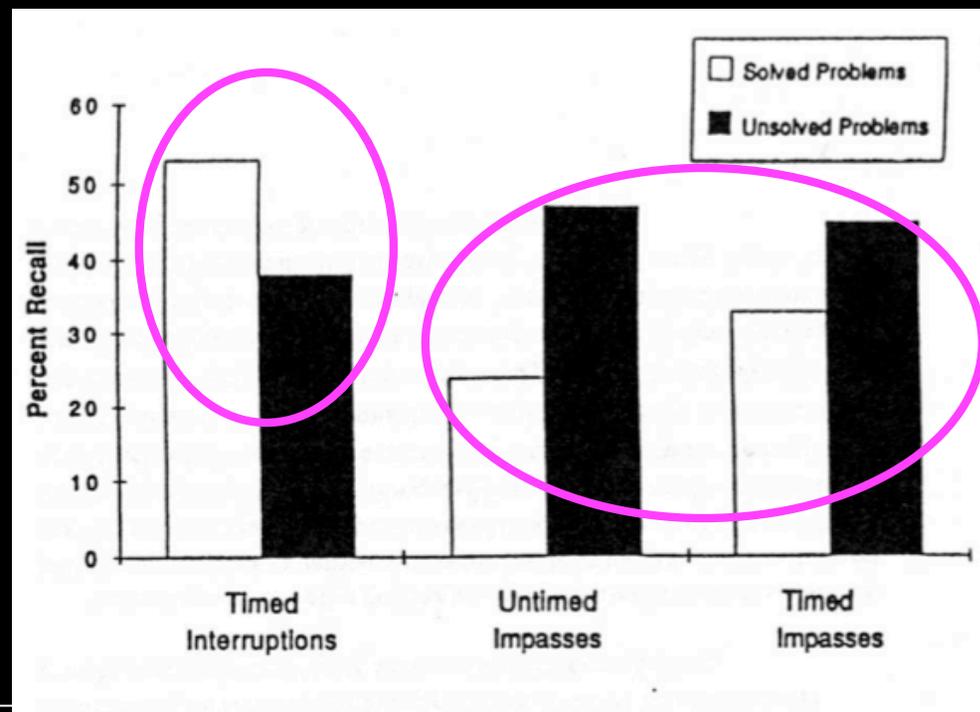
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- Remembering failed solution attempts
  - People should remember problems that resulted in impasses better than completed or interrupted before reaching impasse

# Two experiments

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- Remembering failed solution attempts



# Conclusions

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

# New model

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## ■ 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....

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Holistic vs.  
Analytic Cognition

# Holistic vs. Analytic Cognition

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- 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)

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## ■ 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

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## ■ Analytic

- Object-centered
- Tying object to category important
- Can use rules and formal logic to decipher and predict behavior
- Lack of contradiction
- No role of context

## ■ Holistic

- Look at the whole environment rather than object only
  - Relationships between object and field important
- Experience based
- Dialectical reasoning
  - Change, Contradiction, “Middle Way”

# How does social organization impact cognitive processes?

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## ■ 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

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## ■ 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

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- 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

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- 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

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- 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

