Imagery

- Fictive Motion types

  - Emanation
  - Pattern Path
  - Frame-relative motion
  - Advent Path
  - Access Path
  - Coverage Path

Imagery

- Emanation
  - Fictive motion of something intangible emerging from a source.
- Source object is *active-determinative* entity
  - Agency
  - Energy, power
  - Size
  - Concreteness

Imagery

- Access Path

  Stationary object's location depicted in terms of a path that some entity might follow to it.

  1. The bakery is across the street from the bank.
  2. The ball rolled across the street from the bank.
  3. The vacuum is down around behind the clothes hamper.
  4. I extended my arm down around behind the clothes hamper.

Imagery

- Coverage Path

  Depiction of the form, orientation or location of a spatially extended object in terms of a path over the object's extent.

  1. The fence goes/zigzags/descends from the plateau to the valley
  2. The field spreads out in all directions from the granary.

Imagery

- Imagery
  - Perception-like experiences accompanying language comprehension or thought

    - Perception - perceiving a scene produces a mental representation of objects, their spatial relationships (or other perceptual characteristics), awareness of how scene is changing over time, identification of event/state, awareness of reality of experience

    - Consciously imagining a scene or comprehending a sentence describing a scene produces an experience similar in some ways to perception but without ‘reality’ experience

Imagery

- Reality experience (from Talmy)
  - Palpability
  - Clarity, strength, ostension
  - Objectivity
  - Localizability, actionability
  - Identifiability, certainty
  - Conscious awareness

Imagery

- *Ception* (Talmy)
  - Gradient experience of event representation
    - High end - *perception* reality experience
    - Mid-range - *imagery*
    - Low end - *association*
      - Actions
      - Affective states
      - Knowledge about

Imagery

- Evidence for imagery (Baddeley)
  - Memorizability of imageable objects > non-imageable
  - Instruction to use imagery in memorization increased learning lists of words

Imagery

- Analog vs. propositional representation
  - Analog - imagistic representations are similar to perceptual representations

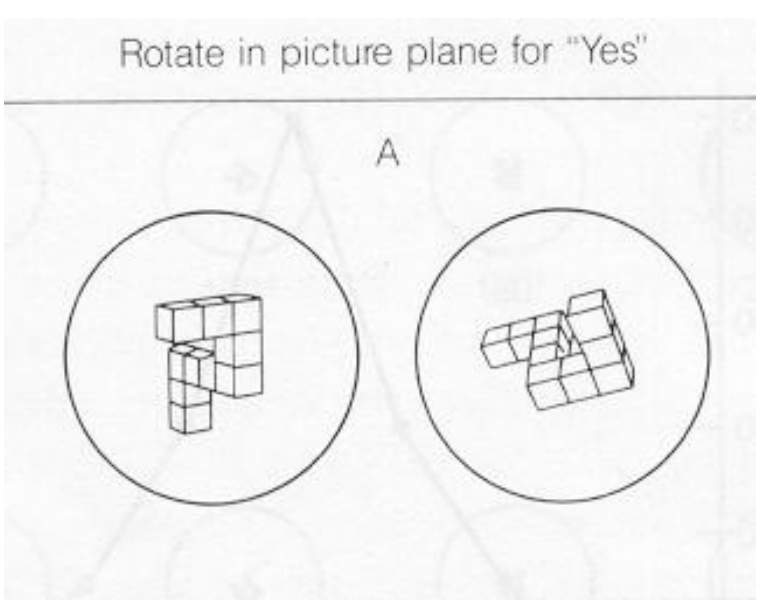
    Kosslyn

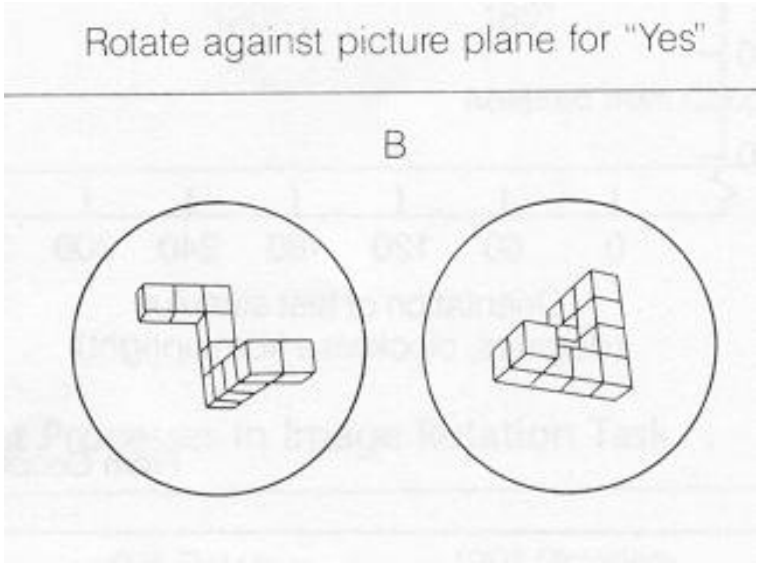
    Sheppard & Metzler

  - Propositional - imagistic representations are not visual or spatial. Perceptual relationships do not directly carry over to mental representations.

    Plyshyn

Imagery





Sheperd & Metzler experiment on mental rotation

Imagery

- Image & size (Kosslyn)

- Questions about imagined objects could be answered more quickly in contexts were object of interst was more saliently construed.

  Ex. Imagine a rabbit next to a larger or smaller animal then answer questions about the rabbit. Faster response when rabbit next to smaller animal.

Imagery

Imagine an elephant standing next to a rabbit

Imagery

Does the rabbit have a beak?

Imagery

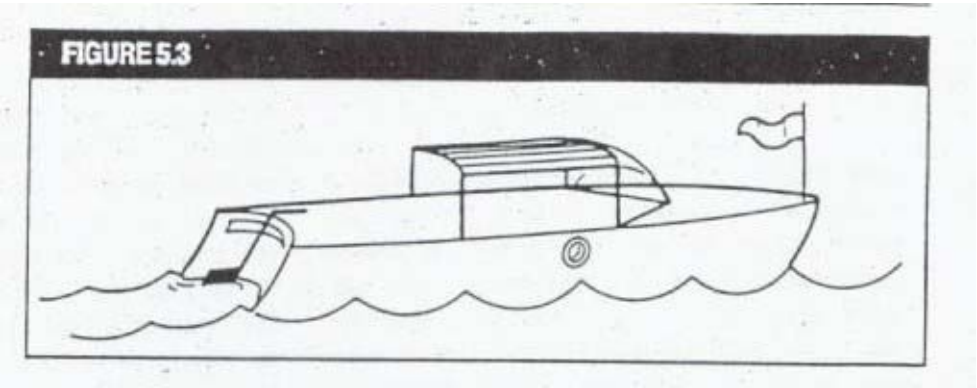
Imagine a fly standing next to a rabbit

Imagery

Does a rabbit have eyebrows?

Imagery

- Kosslyn studies - boat picture
  - Subjects look at and memorize picture of boat
  - Asked questions about various parts of boat
  - Questions took longer to answer if preceding question pertained to more distant part of boat



Imagery

- Kosslyn studies - geographical representations
  - Subjects asked questions regarding distances between landmarks on a familiar university campus.
    1. How far is it from Peterson Hall to the Cog Sci Building?
    2. How far is it from Peterson Hall to Rimac?
  - Decisions times correlated with actual distances

Imagery

- Kozlowski & Bryant (1977)
  - people self identified as having a good sense of direction were better at pointing to places on campus but no better than anyone else at pointing north.
  - Some indication that representations of locations are non propositional

Imagery

- Is imagery visual or spatial?
  - Visual system provides color and spatial information
  - Logie experiment
    - subject faces screen
    - colored patches appeared at regular intervals.
    - Subject instructed to ignore
    - Subject tried to learn word lists using either visual imagery or a verbal rehearsal strategy.
  - colored patches caused significant drop in performance on imagery condition but not rote learning

Imagery

- Neuropsycholgy
  - Kosslyn & the monks

    Participants memorized drawings, then later had to visualize them with their eyes closed and answer the same questions asked while vieweing them. Their brains were scanned during both parts of the experiment.
  - 90 percent of the same areas of the brain were actively occupied during both tasks. Every bit of the brain activated when they saw the drawings was also activated when they imaged them.

Imagery

- Regional blood flow monitoring (Ingvar 1979)
  - Different tasks lead to a differential rate of blood flow in different parts of the brain
    - left hemisphere - language
    - frontal lobes - complex tasks

Imagery

- 3 tasks:
  1. counting backwards in threes from 50
  2. imagining a jingle and deleting alternate words
  3. visualize taking a walk through familiar location and alternately taking left and right turns

  - Task 3 produced blood flow in same regions as during visual processing

Imagery

- Davidson & Schwartz

  – alpha-rhythms occur in perceptual parts of brain associated with periods of non-activity
    - occipital - visual
    - parietal - touch

  – Subjects image either:
    1. a regularly flashing light
    2. a regular tap on the arm
    3. both

Imagery

- Results

- Condition 1 (visual imaging) --> occipital alpha-pattern suppressed

- Condition 2 (touch imaging) --> parietal alpha pattern suppressed

- Condition 3 (both) --> alpha pattern suppressed in both occipital and parietal lobes