Conceptual Blending

Conceptual Metaphor Theory

- Pervasive
- Exhibits Systematicity
- Cross-Domain (Analogical) Mapping
- Metaphoric language reflects conceptual structure
- Abstract concepts understood by mapping from more concrete, experientially motivated ones

Frame Blends

Frame Blends Theory

- Spaces
  - WM buffer
  - “Contain” activated frames from LTM
- Frames
  - Go in spaces
- Mappings – correspondences between elements and relations in spaces
  - Analogy
  - Similarity
  - Identity
Mental Spaces

- Partial cognitive models set up in working memory
- Represent real or imagined scenarios
  - Actual
  - Hypothetical
  - Counterfactual
  - Wishes
  - Representations
  - Beliefs

In 1993, Jordan played for the Bulls. Now he plays for the Wizards.

Mappings

- Correspondences between elements and relationships in different mental spaces
  - Toby Maguire and Spiderman
- Based on various sorts of relationships
  - Identity
  - Similarity
  - Analogy
  - Representation

Identity Mapping

In 1993, Jordan played for the Bulls. Now he plays for the Wizards.

Analogy Mapping

Kobe Bryant is the Jordan of the 21st century.
This is a pipe.

**Primitive Waiting Rooms**

- Prehistoric Humans
- Waiting Rooms

**Input**

**Blend**

**Murphy Brown**

Murphy: let's just say that the man and I have very strong feelings for each other. I was trying to avoid a physical relationship so my judgment wouldn’t get clouded. But you know me, Frank, I have sex about as often as we get a Democrat for president. I was a walking time bomb.

Frank: Oh God, Murph.

Murphy: Then one afternoon the man came to my office to take me to lunch. It was totally spontaneous. I was like Mount Saint Helens, Frank!

**Time Bomb Input**

- Bomb that detonates at a predetermined time
  - Dormant Phase
  - Ticking
  - Explodes

**Human Input**

- Person
  - walks
  - rational behavior
  - can be overwhelmed by emotions
Walking Time Bomb

• Person who is about to lose control of his emotions any minute

Murphy Brown

Dormant Phase
Ticking
Explodes
Explosion Predetermined
Walking Time Bomb – explodes when alone in its office with a man it is attracted to

“I was like Mount Saint Helens, Frank!”

Volcano Blend

Mt. St. Helens
Volcano
Long Inactive
Pent up lava
Huge Eruption
Deterministic

Murphy Brown
Woman
Sexually Inactive
Pent up desires
Sex with “the man”
Voluntary

Blend
Woman/Volcano
Sexually Inactive
Pent up desires
Sex with “the man”
Deterministic

Conceptual Blending

• Some metaphoric language involves conceptual blends
  – structure of target domain not completely determined by source
• Analogical reasoning often involves a hybrid world (blended space) that
  – combines frames from different domains
  – contains emergent structure of its own

Conceptual Blending

• Processes for information integration
  – Conceptual Structure
    • Language
    • Thought
    • Action
• Partial structures from 2 or more mental spaces dynamically combined in a blended mental space
Conceptual Integration Networks

**Input**

**Generic**

**Input**

**Blended**

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**Personification**

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**Mickey Mouse Blend**

- **m**
  - Mice
- **p**
  - Humans
- **mickey**
  - Blend

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**Analogical Counterfactuals**

If Clinton were French, no-one would have cared about Lewinsky.

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**Conceptual Blending**

- **Involves:**
  - Establishment and/or exploitation of mappings
  - Activation of background knowledge
  - Mental imagery, mental simulation
- **Represent:**
  - Actual things (genetic engineer)
  - Fictional things (Mickey Mouse)
  - Impossible things (French Bill Clinton)
- **Although cognitive models in blended spaces are occasionally bizarre, inferences generated inside them affect the contents of LTM**
Blending Processes

- Composition
  - Filling Goods slot in Department-Store frame with Bill-of-Rights
- Completion
  - Might infer that John Ashcroft owns Ashcroft’s department store (because businesses are often named after their owners)
- Elaboration
  - Imagining a sale in which the Bill of Rights is reduced by 60%

Simplex Network

Frame w/ Roles

Taller-than(X, Y)
Simplex Network

Frame w/Roles

Taller-than(Shaq, Kobe)

Unframed Values

Simplex Network

Frame w/Roles

Taller-than(X, Y)

Unframed Values

Simplex Network

Frame w/Roles

Taller-than(X, Y)

Unframed Values

Frame-compatible Network

• Network for integrating 2 frames

Simplex Network

Frame w/Roles

Eating(Agent, Patient)

Unframed Values

Simplex Network

Frame w/Roles

Eating(Agent, Patient)

Unframed Values

Frame-compatible Network

• Network for integrating 2 frames
Al Gore is a moderate Democrat.

Single-Scope Network
- Important for framing, analogy
- Each input structured by a different frame
- Blended space inherits frame from one input (i.e. predicates, relational structure), and values (arguments, slot-fillers) or from the other

“Military tribunals are a preemptive act, a slap in the face of human rights groups, the United Nations and international criminal courts.” -- Peter Maguire
Double-Scope Network

- Each input structured by a different frame
- Blended space has some relational structure from each input frame, as well as some values (arguments, slot-fillers) from each input

Analogy Mappings

Cuts (Bush, Turkey, Carving Knife)

Divides (Bush, Afghanistan, Negotiation)
Analogy Mappings

Thanksgiving Dinner

Competition (For-Drumsticks, Btw-Uzbeks, Tajiks, Pashtuns)

Competition (Power, Btw-Uzbeks, Tajiks, Pashtuns)

Taliban Overthrow

Identity Mappings

Thanksgiving Dinner

Dad
Turkey
Johnny
Suzie
Mom
Plates
Carving Knife

Blend

Bush
Turkey
Uzbeks
Tajiks
Pashtuns
Plates
Carving Knife

Diplomacy

Taliban Overthrow

Bush
Afghanistan
Uzbeks
Tajiks
Pashtuns