

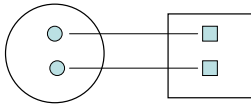
Conceptual Blending

Conceptual Metaphor Theory

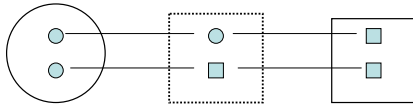
- Pervasive
- Exhibits Systematicity
- Cross-Domain (Analogical) Mapping
- Metaphoric language reflects conceptual structure
- Abstract concepts understood by mapping from more concrete, experientially motivated ones

Frame Blends

Analogy



Frame Blend



Vol. 2. As told by the artist to W. B. Park. The artist is a human cartoonist. He is a human cartoonist.

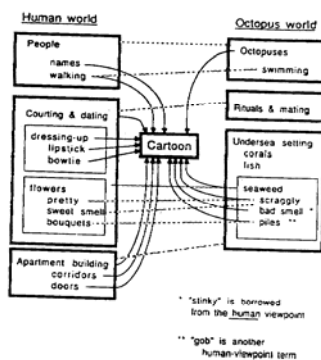


Figure 3. Spelling out how the two frames in the cartoon in Figure 1 are blended, and indicating (with wavy lines) the entities upon which the blend is based.

Conceptual Blending 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



1993



2002



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

1993



2002



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

Analogy Mapping

20th Century

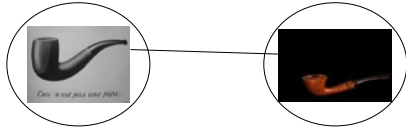


21st Century



Kobe Bryant is the Jordan of the 21st century.

Representation Mapping



Representation

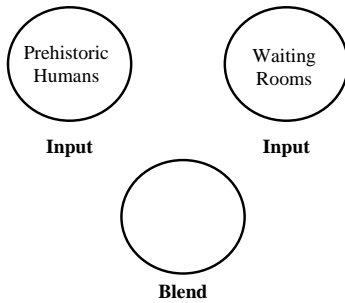
Actual

This is a pipe.

Primitive Waiting Rooms



Primitive Waiting Rooms



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	Not Sexually Active
Ticking	Sexual Tension Building
Explodes	Has-Sex
Explosion Predetermined	Sex Inevitable (?)

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
Erupts & Has Sex with “the man”
Deterministic

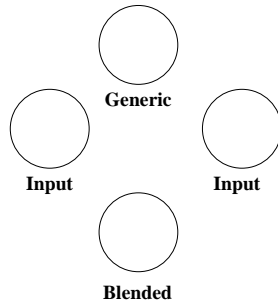
Conceptual Blending

- 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

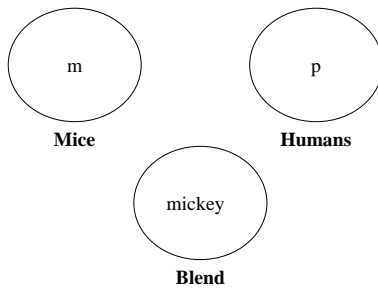
Conceptual Integration Networks



Personification



Mickey Mouse Blend



Analogical Counterfactuals

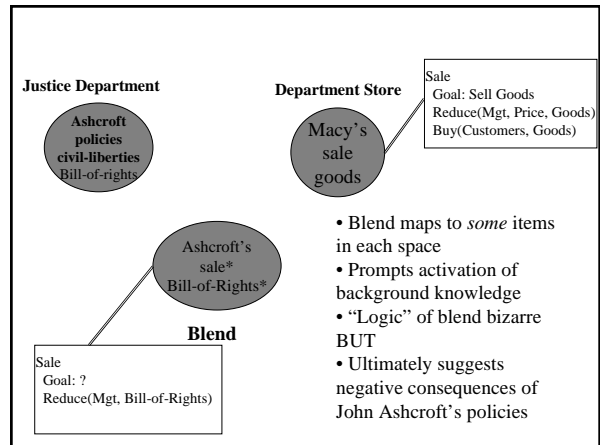
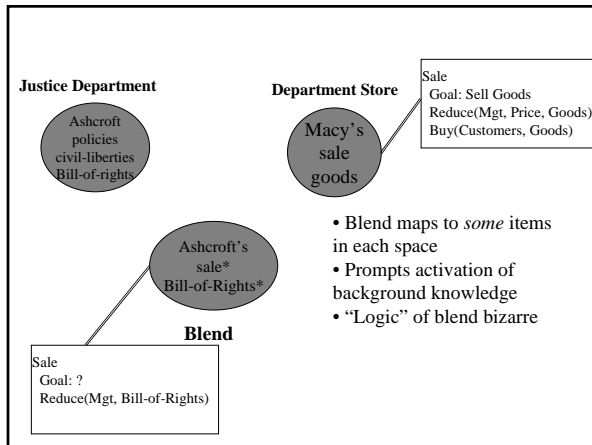
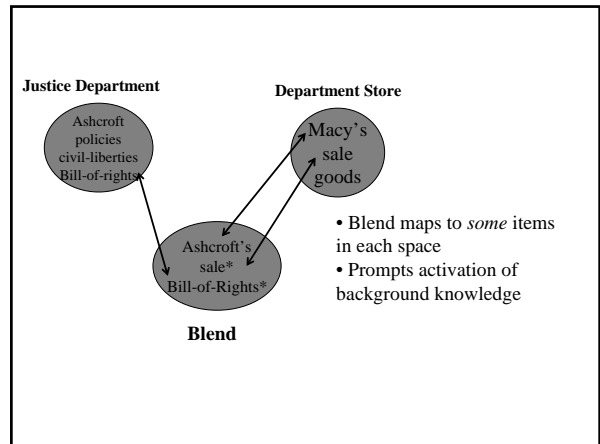
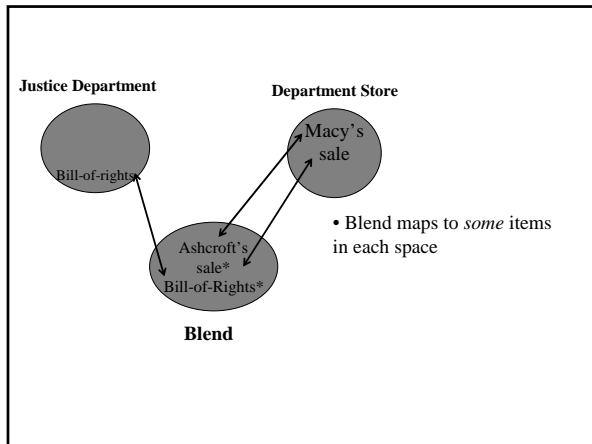


If Clinton were French, no-one would have cared about Lewinsky.

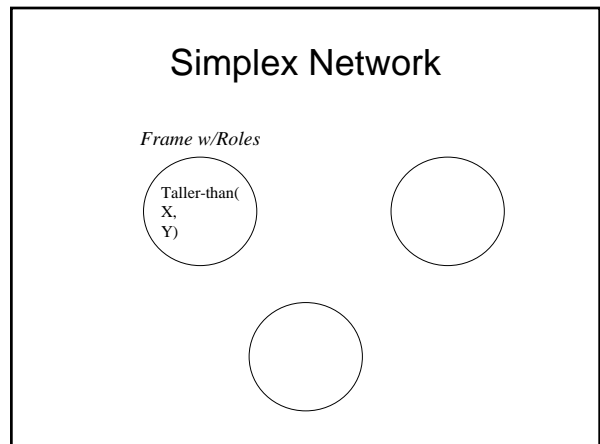
Conceptual Blending

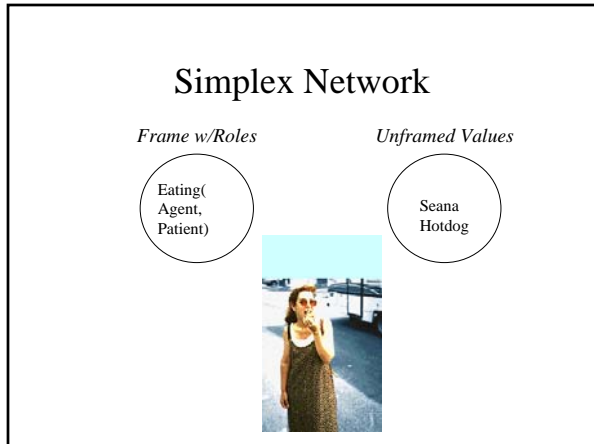
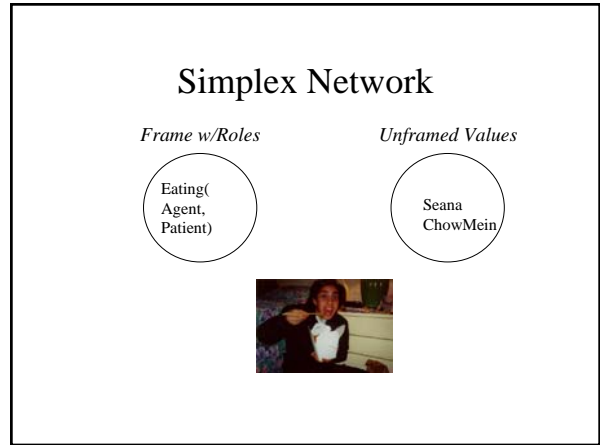
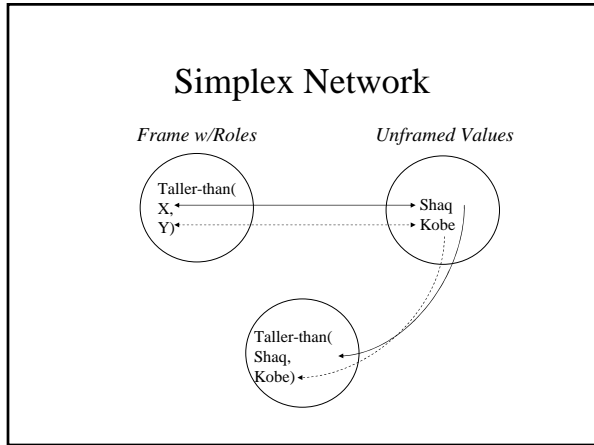
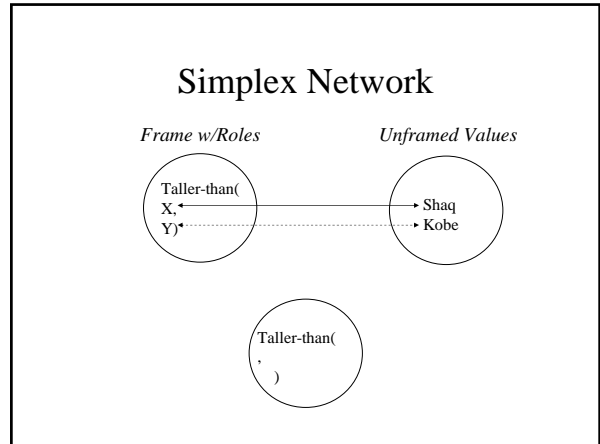
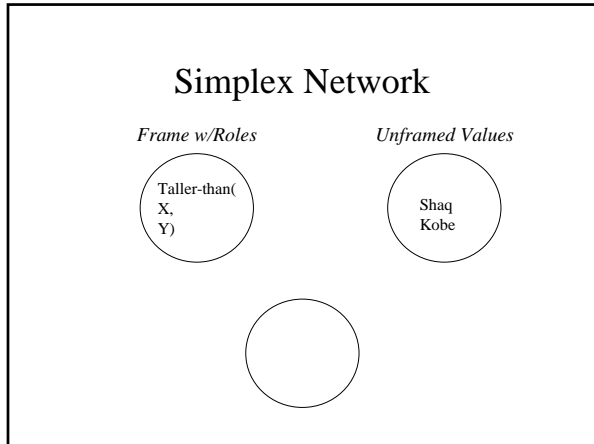
- Involves:
 - Establishment and/or exploitation of mappings
 - Activation of background knowledge
 - Mental imagery, mental simulation
- Represent:
 - Actual things (genetic+engineer)
 - Fictional things (Mickey Mouse)
 - Impossible things (French Bill Clinton)
- Although cognitive models in blended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





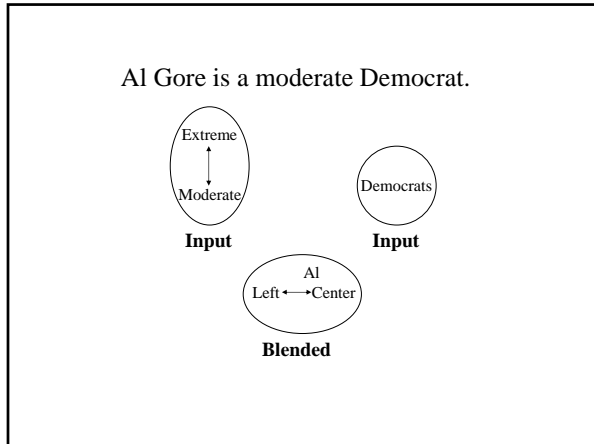
- ## Blending Processes
- **Composition**
 - Filling *Goods* slot in **Department-Store** frame with Bill-of-Rights
 - **Completion**
 - Might infer that John Ashcroft owns Ashcroft's department store (because businesses are often named after their owners)
 - **Elaboration**
 - Imagining a sale in which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





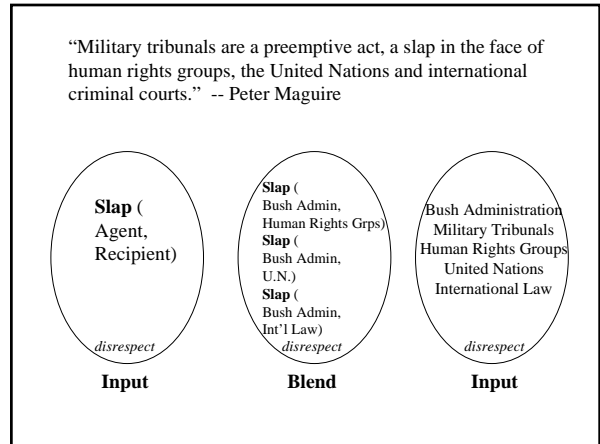
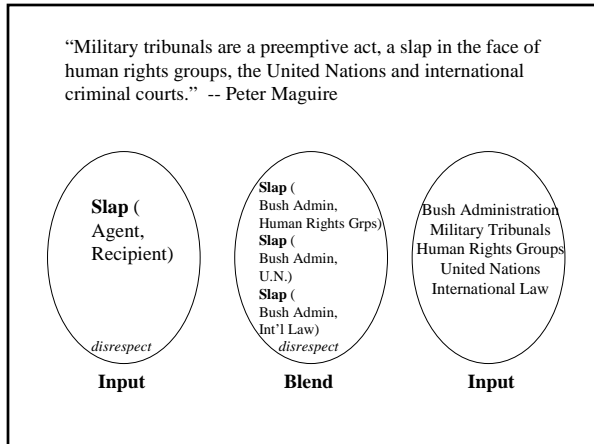
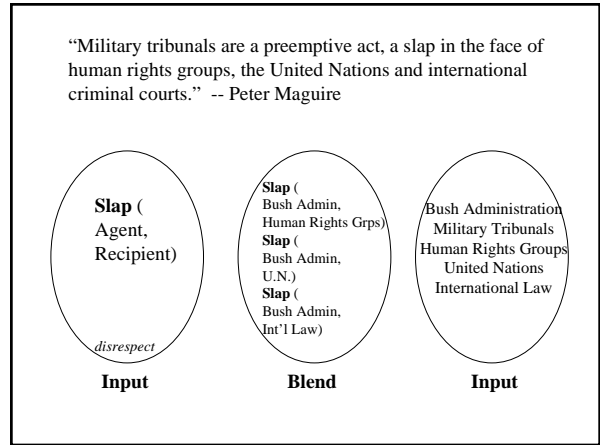
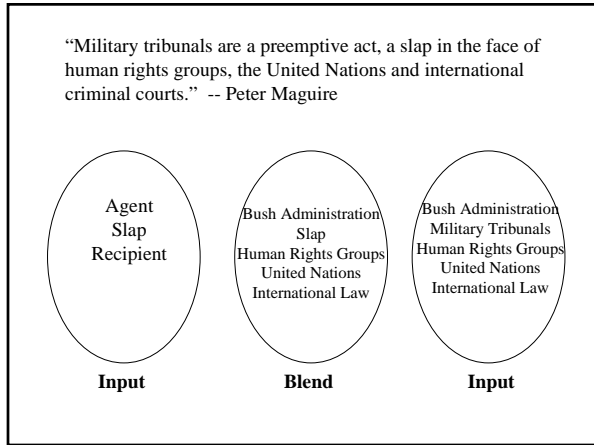
Frame-Compatible Network

- Network for integrating 2 frames



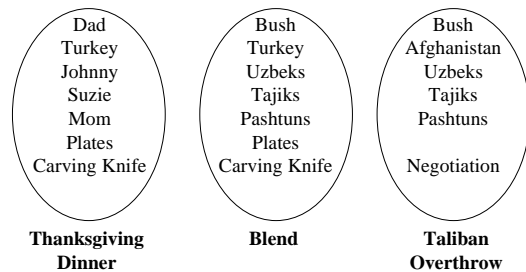
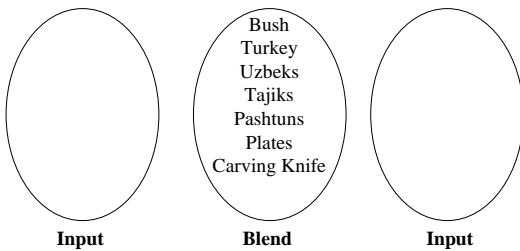
Single-Scope Network

- 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

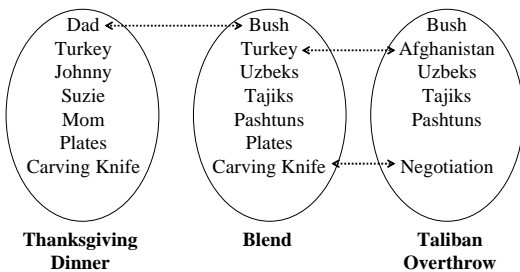


Double-Scope Network

- 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



Analogy Mappings

