Scripts Reprise

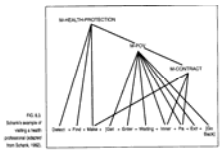
- Scripts: Sequence of actions w/info about ACTORS, ACTIONS, and GOALS
- Fill in missing info by assuming events occurred as they typically do
- Explain unanticipated events
- Used for planning
  - Gives list of actions
  - Causal info helps us to adapt

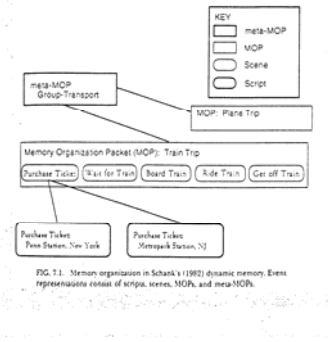
Trouble in Script Land

- Scripts are inflexible
- People don't seem to need scripts for goal-directed action
- Empirical evidence (Bower)
  - People confused events in a story about a doctor visit w/those in a story about a dentist visit
  - But doctor-visit & dentist-visit 2 different scripts and so shouldn't be confusable. Hmm…

MOPs, TOPs, & TAUs

- Memory Organization Packets (MOPs)
  - MOPs made up of scenes
  - Scenes – collection of high-level components of scripts
  - Examples
    - Scene: Doctor's Waiting Room
    - MOP: Waiting Rooms
    - MOP: Health-Professional-Visit





MOP Features

- Makes System Flexible
  - Mix and match scenes
  - Store different specific scenes (viz. Doctor. vs. Dentist Visit) in same place
- Empirical support (Abbot, Black, & Smith)
  - General goal
    - Eating at a restaurant
  - Intermediate goal
    - Entering, Ordering, etc.
  - Actions
    - Order Fish

TOPs

- Thematic Organization Points
  - Mutual goal pursuit against outside opposition
- Abstract commonalities
  - Magnificent Seven
  - Seven Samurai

TAUs

- Thematic Abstraction Units (Dyer, 1983)
  - 'A stitch in time saves nine'
- Seifert & Black (1983)
  - Given stories with a common TAU, subjects were able to produce their own story w/the same TAU
- Seifert et al. 1986
  - Verification times for test sentence from one story was faster when preceded by story w/similar TAU
- Keane (1987, 1988)
  - Problem solving TAUs

Problems with Schema Theories

- Vague
- Unprincipled
- Ad Hoc

Possible Solutions

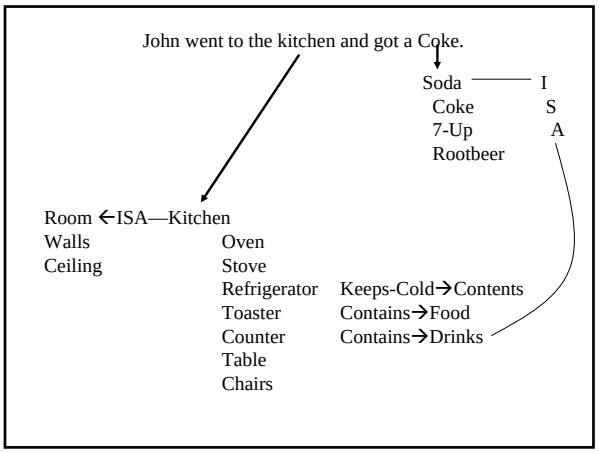
- Specify content of MOPs, TOPs, etc.
  - CYC project
- Account for Acquisition

John went to the kitchen and got a Coke.

Inferred Information

- There was a refrigerator.
- John opened the refrigerator to get the Coke.
- The kitchen had a ceiling.
- The kitchen had walls.
- Etc., etc., etc.

How do people use partial information to infer other information that isn't specified?



Connectionist Approach to Schemas

- Schemas emerge from interaction of parallel processing units
- Schemas not explicitly stored representations
- Schema=Activation Pattern
- Training network produces tendency for particular units to be co-activated given similar input
- Yields schema-like behavior

The Forty Room Descriptors

ceiling	walls	door	windows	very-large
large	medium	small	very-small	desk
telephone	bed	typewriter	bookshelf	carpet
books	desk-chair	clock	picture	floor-lamp
sofa	easy-chair	coffee-cup	ashtray	fireplace
drapes	stove	coffeepot	refrigerator	toaster
cupboard	sink	dresser	television	bathtub
toilet	scale	oven	computer	closet

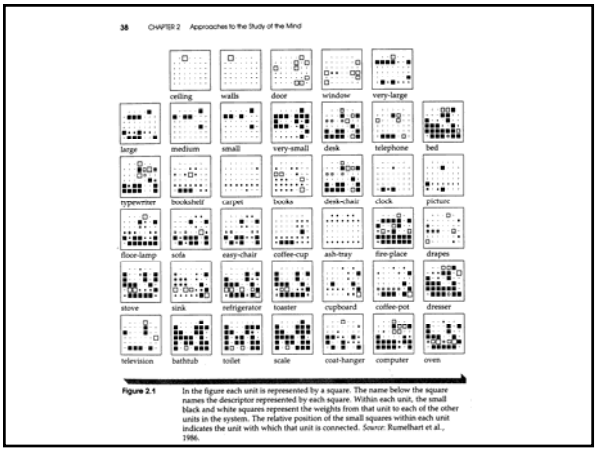


Figure 2.1 In the figure each unit is represented by a square. The name below the square names the descriptor represented by each square. Within each unit, the small black and white squares represent the weights from that unit to each of the other units in the system. The relative position of the small squares within each unit indicates the unit with which that unit is connected. *Source:* Rumelhart et al., 1986.

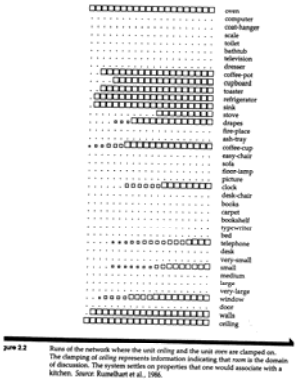


Figure 2.2 Runs of the network where the unit *ceiling* and the unit *oven* are clamped on. The clamping of *ceiling* represents information indicating that room is the domain of discussion. The system settles on properties that one would associate with a kitchen. *Source:* Rumelhart et al., 1986.

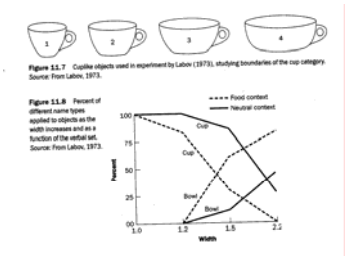


Figure 11.7 Cuplike objects used in experiment by Labov (1973), studying boundaries of the cup category. *Source:* From Labov, 1973.

Figure 11.8 Percent of different name types applied to objects as the width increases and as a function of the verbal set. *Source:* From Labov, 1973.

Connectionist Models

- Provide mechanism for integrating multiple sources of information
- Addresses 'unprincipled' nature of schema theories
  - Specific mechanism for schema acquisition

Shortcomings of Schema Theories

By the time Mary had had her 14th child she'd finally run out of names to call her husband.

(not scripts, not MOPs and TOPs, and not even neural network models!)

Why schemas not adequate…

- Need mini-theory about consequences of many kids
- Knowledge recruited for dynamic simulation (mental model)
  - Not just activated
- Deciding which aspects of childbirth knowledge do get recruited and which don't is a difficult problem
  - Solution possible (presumably) but does not currently exist

Socio-Cultural Side of Frames

- Frames structure experience
- Choice of frame matters
- Erving Goffman FRAME ANALYSIS
  - Frames are chosen, not just activated
  - Frames are socially negotiated
  - People's choice of frames results in their co-construction of social reality

Mutual Activation of Shared Schemas

- Schema=Glasses

Frame Analysis

- Goffman: best way to 'see' frames is to find instances when they are violated
  - Psychotic in department store
  - Fainting nuns
    - People cooperate to activate frames
    - Frame-appropriate behavior is socially conditioned

Good Samaritan Study

- Subjects – unwitting seminary students at Princeton Theological Seminary

- Late Ministers: 1/10 stopped for groaning man
- On-Time Ministers: 6/10 stopped for groaning man

Good Samaritan Study

- Situation definition influences both perception and behavior
- Comprehension is not passive, but an active process that depends heavily on socio-cultural factors