Schemas and Scripts

Lesson VI: Organization of Memory
module 30

University of Idaho

- **Schema**
  - – Broad concept
  - – Mental framework for organizing general knowledge, relating multiple concepts and attributes
  - – Specifies a structure that includes variable "slots" that need to be filled with values
  - – If nothing is specified, default values and expectations fill the void

- **Scripts**
  - – Schemas for routine activities
  - – The "restaurant" script as an example

- **Both schemas and scripts mirror the internal structure of concepts and categories**

- **Example**
  - John was feeling very hungry as he entered the restaurant. He settled himself at the table and noticed that the waiter was nearby. Suddenly, however, he realized that he'd forgotten his reading glasses.
  - Explain how the last sentence is related to the middle sentence... *(from Matlin, Cognition)*

- **Role of schemas and scripts for text comprehension**
  - Background knowledge and expectations integrate new information
  - Missing information is added or filled in as needed

- **Frederick Bartlett**
  - British memory researcher
  - 1932 publication of his book on memory (especially on memory for text passages)
  - Emphasis on general background knowledge of participants to explain what they remember about text passages
  - One of the first experimental studies of human memory in natural contexts

- **Examples**
  - Indian "ghost" story
  - Perception of briefly presented visual material (naval officer lacking a beard)

- **Brewer & Treyens (1981)**
  - Participants were asked to wait in experimenter's "office" for a short time
  - Later they were asked to remember the items in the room
  - Participants remembered schema-consistent items that were present (desk) and that weren't (books)
  - Participants remembered few items that were inconsistent with schema (wine bottle, picnic basket)

- **Increased memory for "odd" events that violate expectations**
  - When reading a short text passage, schema inconsistent elements stand out
  - Inconsistent elements are sometimes remembered better than consistent elements

- **Explanations**
  - Salience of "odd" item
  - Reduced problem of source confusion: Items that violate expectations are usually inferable from the context of a story, whereas "standard" items might just be a product of one's schema *(remember the explanation of false fame effect?)*

- **Goals of interface design**
  - Intuitive interface with little need to learn
  - Minimization of errors and ambiguities
  - Clear communication of the role and results of particular elements and operations

- **Designing an interface**
  - Use of metaphors (e.g., the desktop)
  - Metaphors take advantage of existing schemas
  - Expectations about the function of objects are based on general knowledge stored in schemas

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