Overview of Human Memory Models

Early models and measures of memory

Some of the first noted research on human memory was conducted in 1890 by **William James**. Based on his works, James assumed memory consists out of **two systems**:

- **primary memory**, which lasts for a **few seconds** and holds **in our consciousness** the perception of events in our environment, and
- **second memory**, which has **unlimited duration** and can be **brought to consciousness** if wanted.

A measure for the **capacity of short-term** (primary) memory was first introduced even a bit earlier, in 1887, by **Joseph Jacobs**, who tested the span of digits his students were able to remember. Under the criterion that at least 50% of the digits need to be remembered correctly, subjects he tested mostly remembered **about 7 digits**. What he also noticed is that this result can be improved by grouping the digits (for example in groups of three), or reading aloud.

Similar results were reported by **George Miller** in 1956 in his famous work "The **Magical Number Seven**, Plus or Minus Two: Some Limits on Our Capacity for Processing Information"[1], where he suggested human short-term capacity was determined by the number of ***chunks*** or cognitive wholes one can remember, no matter if it is a letter, digit or word. This number on average equals **seven**, and may vary usually **between five and nine**.

Bibliography

Famous People and Their Contributions to the Study of Memory Retrieved March 16, 2011.

1)
Miller, G. A. The magical number seven, plus or minus two: Some limits on our capacity for processing information. Psychological Review, 63, 81–97. 1956.