

chunking limit

1	0	1	0	0
2	2	0	2	1
5	0	4	7	5
10	2	7	3	2
20	0	20	0	0

characteristics

author:	Miller, George A.
country:	United States
period:	1956
type:	theory
role:	change agent and trainer
activity:	reflect
topic:	culture & internationalisation and communication
abstr. level:	individual
perspective:	learning
status:	final
module:	classics I
comments:	0

description:

The Harvard psychologist, George A. Miller, worked on short term memory using Claude Shannon's and Norbert Weiner's information theory research. Shannon thought of information as measurable. He developed a mathematical theory of communication to deal quantitatively with the transmission of messages over 'channels' by measuring the amount of information transmitted in bits or binary digits.

Using the average of ten bits for English words, Miller's first calculations that gave human memory capability a maximum of two or three random words proved too low. He then discovered that a process of coding and recoding information into larger chunks increases the total of words that can be remembered and communicated. A chunk is a meaningful, more abstract reference or context to a word or group of words.

Miller's later research showed that human beings understand and remember no more than seven plus or minus two chunks at a time. This phenomenon is called the 'chunking limit'. Miller's research has two implications:

- short term memory performance can be enhanced by adopting smarter chunking algorithms using memory training. Recoding is a powerful weapon for increasing the amount of useable information;
- effective communication takes into account the reader's comprehension and ability to access and retrieve information.

The last implication leads to the following practical recommendations:

- if more than nine bullet points on a slide, order the information into smaller, related groups;
- if more than nine objects need to be stated in a single flow diagram to reflect a model's complexity, divide the diagram into subcomponents.

The concept of chunking and the limited capacity of short term memory have become basic elements of subsequent theories of memory.

assets:



the chunking limit

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pros:

- Provides practical guidelines on effective communication.

cons:

- Contemporary experiments demonstrated that an individual's capacity for short-term remembering also depends on the message's form -- a word, an image or a sound.
- The chunking limit varies across languages. Chinese speakers remember a higher number of chunks than English speakers.
- Knowing the relevant chunks for a particular audience is difficult: beginners do not have the level of encoding of experts.

references:

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