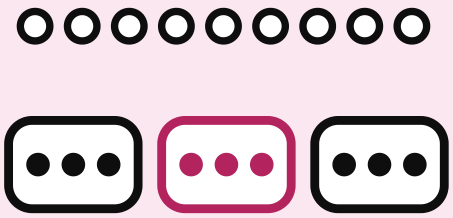
Concept

Miller's law

Immediate memory holds only a few items at a time, but grouping them into meaningful chunks lets us hold more. Miller spoke of seven, plus or minus two.



In Spanish
Ley de Miller

Origin
Miller (1956)

What problem it addresses

It explains why copying a long code is hard and why grouping information helps. What design takes from it is grouping, not counting to seven.

An example

An illustrative example: copying a ten-digit phone number onto another screen.

All in a row

5512345678

Ten digits with no breaks. **You have to look back at it several times.**

In groups

55 1234 5678

The same digits, in three blocks. **You hold three blocks, not ten digits.**

The digits are the same. What changes is how many units you have to hold.

Why it happens

1 

Immediate memory holds few units at a time.

2 

Grouping turns several items into a single unit.

3 

So more fits in the same space.

Applications in design

Use it like this

Group long data such as phone numbers, cards or codes, and split content into blocks with headings.

Avoid

Forcing people to remember a piece of data from one screen to type it on another.

Don't fall for it

Don't cut a menu to seven options as a rule: the problem appears when you have to remember, not when you can see.

7 ± 2 → 4



What the research says

Miller (1956) proposed about seven items. Reviewing later research, Cowan (2001) put the limit at about four chunks, between three and five.

●●○ **Debated evidence.** Miller framed the seven with humor and suspected it might be a coincidence. The rule of "no more than seven options in a menu" is a misreading: what is visible on screen does not have to be remembered.

Connections

Used in

- Information architecture
- Form design

Related to

- Cognitive load
- Serial position effect
- Hick's law

Authors and works

1956	**George A. Miller**	Described the limit of immediate memory and showed that grouping into chunks lets us hold more.
2001	**Nelson Cowan**	Reviewed the evidence and put the limit at about four chunks.
2020	**Jon Yablonski**	Collected it with other user experience laws in the book Laws of UX.

Sources

Original sources

- Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. Psychological Review, 63(2), 81–97. View source (https://doi.org/10.1037/h0043158)

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- Cowan, N. (2001). The magical number 4 in short-term memory: A reconsideration of mental storage capacity. Behavioral and Brain Sciences, 24(1), 87–114. View source (https://doi.org/10.1017/S0140525X01003922)

Secondary sources

- Yablonski, J. (2020). Laws of UX: Using psychology to design better products & services. O'Reilly Media. View source (https://www.oreilly.com/library/view/laws-of-ux/9781492055303/)

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