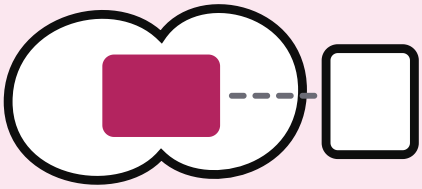
Concept

Mental model

The often incomplete idea a person forms of how something works, and uses to predict what will happen when they act.



In Spanish
Modelo mental

Origin
Craik (1943); Johnson-Laird (1983); brought to design by Norman (1988; revised ed., 2013)

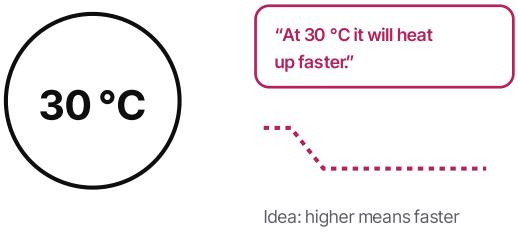
What problem it addresses

Explains why people misuse a product that works well: they act on their idea of how it works, not on how it really works.

An example

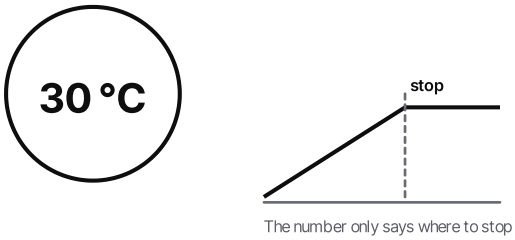
The heating thermostat.

What the person thinks



If I set it to 30 °C, the house will warm up faster. **A reasonable idea.**

How it works



The boiler heats just as fast. The number only says where to stop. **The house ends up too hot.**

The person is not careless: they act logically, but on an idea the device did not help them correct.

Why it happens

1 ?

We can't see how a system works on the inside.

2 

We form an idea from what we see and what we already know.

3 

If the idea doesn't match the system, we make mistakes.

Applications in design

Use it like this

Research how people believe something works before designing it.

Avoid

Assuming people understand the system the way the team does.

Don't fall for it

If many people make the same mistake, the problem is in what the design communicates, not in them.

1943

What the research says

Kenneth Craik proposed that the mind builds small-scale models of reality to anticipate what will happen (Craik, 1943).

●●● **Solid evidence.** Johnson-Laird (1983) turned the idea into a theory of reasoning. Norman brought it to design (1988; revised ed., 2013): designers can only speak to the person through the object itself.

Connections

Used in

- Information architecture
- Interaction design
- AI design
- UX design
- Wayfinding design

Related to

- Affordance
- Cognitive load
- Stimulus–response compatibility
- Slips and mistakes
- Jakob's law
- Paradox of the active user

Authors and works

1943	**Kenneth Craik**	Proposed that we think with small-scale models of reality.
1983	**Philip N. Johnson-Laird**	Developed mental models as a theory of reasoning.
2013	**Donald A. Norman**	Explained how design must convey a correct model of how a product works.

Sources

Original sources

- Norman, D. A. (1988). The psychology of everyday things. Basic Books.
- Craik, K. J. W. (1943). The nature of explanation. Cambridge University Press.
- Johnson-Laird, P. N. (1983). Mental models: Towards a cognitive science of language, inference, and consciousness. Harvard University Press.
- Norman, D. A. (2013). The design of everyday things (Rev. and expanded ed.). Basic Books.

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