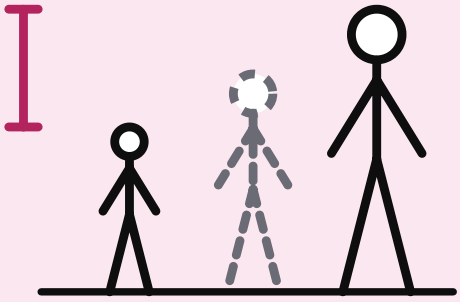
Concept

Anthropometry

The measurement of the human body and its use in design. You design for a range of bodies, measured in percentiles, not for an average person.



In Spanish
Antropometría

Origin
In ergonomics, Daniels (1952); in industrial design, Dreyfuss (1955)

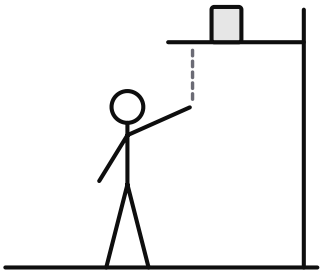
What problem it addresses

It explains why an object made for the average person fits many people badly. It gives design real measurements and a clear decision to make: which range of bodies it must serve.

An example

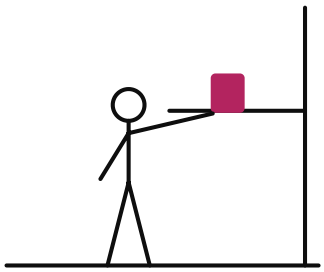
A kitchen shelf for the things you use every day.

At average height



Placed where a person of average height can reach. **Shorter people can't reach it.**

Within reach of the shortest



Placed where the shortest person who needs it can reach. **Nearly everyone can reach it.**

Reach is worked out with the smallest people in the range; clearance, like a doorway, with the largest.

Why it happens

1 

Bodies vary a lot, and each measurement varies in its own way.

2 

Almost nobody is average in every measurement at once.

3 

So you choose a range, and check each measurement at its extremes.

Applications in design

Use it like this

Decide who the design must serve, for example the 5th to the 95th percentile, and check each measurement at its extremes.

Avoid

Using an average figure or your own measurements as the reference.

Don't fall for it

If a fixed range leaves out too many people, make it adjustable.

0 of 4,



What the research says

US Air Force airmen who fell in the middle range on all ten measurements studied. On height alone there were 1,055 (Daniels, 1952).

●●● **Solid evidence.** Measurements don't go together. Someone of average height may have long or short arms, so percentiles of different measurements don't add up.

Connections

Used in

- Furniture design
- Inclusive design
- Industrial design

Related to

- Universal design

Authors and works

1952	**Gilbert S. Daniels**	Showed with data from thousands of airmen that the “average man” does not exist once several measurements are combined.
1955	**Henry Dreyfuss**	Brought body measurements into the everyday work of industrial design.
2006	**Stephen Pheasant and Christine M. Haslegrave**	Gathered measurement tables and the methods for designing with percentiles and adjustments.

Sources

Original sources

- Daniels, G. S. (1952). The "average man"? (Technical Note WCRD 53-7). Aero Medical Laboratory, Wright Air Development Center, Wright-Patterson Air Force Base. View source (https://archive.org/stream/DTIC_AD0010203/DTIC_AD0010203_djvu.txt)
- Dreyfuss, H. (1955). Designing for people. Simon & Schuster.

Secondary sources

- Pheasant, S., & Haslegrave, C. M. (2006). Bodyspace: Anthropometry, ergonomics and the design of work (3rd ed.). CRC Press.

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