Looking at the development and use of human body-based measurements across cultures

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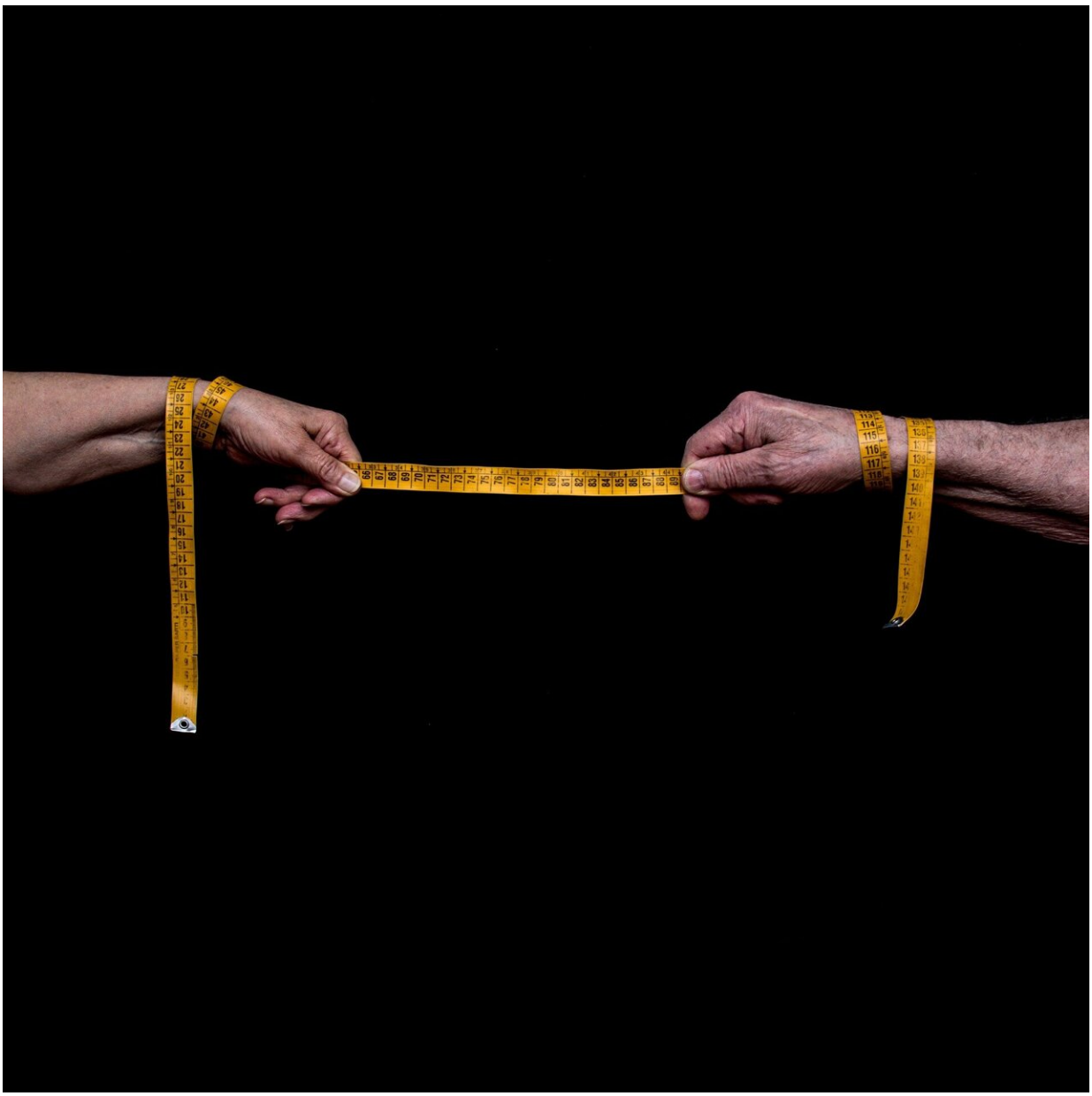

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A trio of cognitive scientists and culturist researchers at the University of Helsinki has taken a look at the development and use of human body-based measurement systems across multiple cultures. In their paper published in the journal *Science*, Roope Kaaronen, Mikael Manninen and Jussi Eronen, describe how they analyzed body-based measurement systems across cultures using data from the Human Relations Area Files database and what they found by doing so.

Stephen Chrisomalis, with Wayne State University, has published a Perspective piece in the same journal issue outlining the work done by the team in Finland.

For most of human history, units of measurement have been very closely associated with physical parts of the human body. People used the distance from the elbow to the end of the fingertips, for example, to create the idea of a cubit. Or they used the distance between outstretched hands to measure lengths of rope or cloth materials, and named it a fathom.

Similarly, a span described the distance between the tip of the thumb and tip of the little finger. In this new effort, the research trio noticed that despite the introduction of modern measurement tools, such as the meter, yardstick and ruler, many people still rely on use of body-based measurements. And this led them to wonder if cultural differences might account for differences in the degree to which such measurements are used.

To learn more about measurement systems from both a historical and cultural perspective, the team began conducting searches on the Human Relations Area Files database—a database first established back in the 1950s. Researchers have been entering ethnographic and anthropologic data into the database as a means to provide a central location for such information for use in ongoing research efforts. In all, the team looked at data from 186 cultures, both from the past and the present.

In looking at their data, the researchers found that body-based measurements are used by all cultures, though it is used more often in some areas of interest than others. Many cultures use them to describe dimensions of clothes for example. Others use them for custom projects, such as determining ski length or when building a kayak.

The research team then focused on a subset of 99 cultures that have been shown to have developed independently of each other. In so doing, they found that the most well-known body measures—cubits, spans and fathoms—were also the most common.

The team concludes by suggesting that body-based measurements are most commonly still used today in projects that involve ergonomic design, which makes them more personalized.

More information: Roope O. Kaaronen et al, Body-based units of measure in cultural evolution, *Science* (2023). DOI: 10.1126/science.adf1936

Stephen Chrisomalis, Embodying measurement, *Science* (2023). DOI: 10.1126/science.adi2352