

## A vast right arm conspiracy? Study suggests handedness may effect body perception

November 4 2009

---

There are areas in the brain devoted to our arms, legs, and various parts of our bodies. The way these areas are distributed throughout the brain are known as "body maps" and there are some significant differences in these maps between left- and right-handed people. For example, in left-handed people, there is an equal amount of brain area devoted to the left and right arms in both hemispheres. However, for right-handed people, there is more cortical area associated with right arm than the left.

Psychologists Sally A. Linkenauger, Jonathan Z. Bakdash, and Dennis R. Proffitt of the University of Virginia, along with Jessica K. Witt from Purdue University, and Jeanine K. Stefanucci from The College of William and Mary wanted to see if this difference in body maps leads to differences in how we perceive the length of our arms. For this study, volunteers were brought to the lab and estimated their perceived arm length and how far they could reach with their arms.

To estimate arm length, the volunteers would hold out each arm while a researcher standing in front of them would adjust a tape measure—the volunteers had to indicate when they thought the tape was the same length as their arm. To see how far volunteers could reach with each arm, they sat at a table with a plastic chip on it. The volunteers would instruct the experimenter to move the position of the chip to estimate how far they could reach.

The results, reported in [Psychological Science](#), a journal of the Association for Psychological Science, reveal some differences in the

way left- and right-handed people perceive their arms. Left-handed volunteers judged both of their arms to be the same length, but right-handed participants underestimated the length of their left arm—they consistently perceived their right arms as being longer. In addition, right-handed volunteers thought their right hands were larger than their left, when in fact, they were both the same size. When guessing how far they could reach with their arms, left-handed volunteers estimated they could reach equally far with both arms while right-handed volunteers predicted they could reach farther with their right arm.

These findings suggest that body maps in our brain may influence how we perceive our physical bodies—for example, if there is a lot of [brain](#) area associated with our right arm, we will view it being as longer compared to our left [arm](#).

Source: Association for Psychological Science ([news](#) : [web](#))

Citation: A vast right arm conspiracy? Study suggests handedness may effect body perception (2009, November 4) retrieved 26 April 2024 from <https://medicalxpress.com/news/2009-11-vast-arm-conspiracy-handedness-effect.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--