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Right-Hand Bias Is Everywhere

How a preference for one side of the body can influence what people buy, who they vote for, even what they name their children

Rodrigo Garrido / Reuters

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As any left-handed person who's ever struggled with a pair of scissors can attest, the physical world is largely built for righties, who comprise up to 90 percent of the population. But that imbalance also affects lefties in more subtle and profound ways than just unwieldy office supplies.

Daniel Casasanto, a psychologist at the University of Chicago, studies the

ways in which the world is mentally biased toward the right. His research has shown that politicians, for example, tend to use their non-dominant hand for negative gestures, and parents in recent decades have shown a preference for baby names typed on the right side of the keyboard. Now, Casasanto is studying how handedness affects "approach motivation"—how we approach or avoid physical and social situations in the world around us.

Casasanto recently discussed his work at the February 2016 meeting of the American Association for the Advancement of Science in Washington, D.C. Afterwards, I spoke to him about society's rightie bias, and what that means for lefties. Below is an edited and condensed version of our conversation.

Natalie Jacewicz: So what determines right- or left-handedness?

Daniel Casasanto: What determines handedness is still a mystery. There's a large genetic component. But in identical twins, if one twin is left-handed, the other twin is left-handed only about 70 percent of the time. So there's likely to be a fairly significant experiential component.

Jacewicz: How did you begin studying left-handed and right-handed biases?

Casasanto: I was trying to figure out questions about language and cognition. In language, there's a link between space and these abstract concepts that are not themselves spatial. For example, we talk about positive and negative things as up and down. Your spirits are "soaring" or they're "sinking." We also talk about stuff in a horizontal continuum. In our culture—and many others—you've got expressions for positive attributes like "the right answer," or "right-hand man" and expressions for things that are clumsy or bad, like "two left feet." This left-right dichotomy is even more stringent in some cultures. For example, in Ghana, you're not allowed to point with your left hand, because the left hand is reserved for dirty things. In some Islamic cultures, you're told to use your right foot to step into the mosque and your

left foot to step into the toilet.

The majority of us are right-handed. Social psychologists have shown us that there's a link between fluency [dexterity] and perceived goodness. We go through life interacting more fluently on the right with our dominant hand … If people conceptualize good and bad stuff on a left-right continuum in the way their language and culture tell them, everybody should think that right is good. Alternatively, if we have a mental metaphor based on asymmetries in the way we use our hands, then righties should think right is good, but lefties should think left is good—in spite of everything that language and culture are telling them.

Jacewicz: You've done a bunch of studies on handedness and bias. Could you walk through a few of them?

Casasanto: We started very simply with a set of questionnaires, where people saw pairs of alien creatures—one on the left side and one on the right side of the page—and we asked which alien in each pair looked more honest, or less intelligent, or more attractive. On average, righties attributed more positive qualities to the alien creatures they happened to see on the right, while lefties preferred the creatures they saw on the left.

We wanted to know whether you could observe this kind of pattern "in the wild." One of the ways we went about this was analyzing spontaneous speech and gestures. We found a wonderful, already transcribed, large corpus of speech and gesture on the web in presidential debates. It just so happens, that in 2004 and 2008, the [candidates] in the presidential debates consisted of two lefties and two righties, crossed with political party. It was perfect. Obama's a leftie, and McCain is a leftie. But Kerry is a rightie, and Bush is a rightie.

We parsed all of their speech into clauses and then sorted out whether each

clause expressed a positive or negative idea, if we could tell. Then we looked at all of their hand gestures, and we wrote down if a gesture was performed with the right hand or the left hand. Overall, everybody gestures more with their dominant hand, but righties tend to gesture more during positive stuff with their right hand, lefties with their left hand.

Jacewicz: You've also looked at how the QWERTY keyboard influences our preferences for words. Tell me about that.

Casasanto: We wondered whether the act of typing words could subtly change their meanings. This is just what the data suggest: Across several languages, we've found that words with more right-side letters are rated as more positive on average, and words with more left-side letters more negative. It even appears that the keyboard is exerting a subtle influence on what we name our babies. Since 1990—the beginning of the era in which QWERTY-driven computers became ubiquitous in our homes—the popularity of names with more right-side letters has skyrocketed.

Jacewicz: Tell me a little bit about your recent experiment on handedness and motivation.

Casasanto: Motivation is another dimension of emotion—how motivated you are to approach or withdraw from similar social situations. In doing this work on handedness, we found this pattern: It seemed that people use their hands differentially for differently motivated actions.

Suppose I put a tennis ball on the table and ask you to pick it up. Which hand are you likely to use?

Jacewicz: I'd use my right hand.

Casasanto: Right. Your dominant hand. Suppose I ask you to throw me that tennis ball.

Jacewicz: Also right hand.

Casasanto: But if I unexpectedly throw the tennis ball at your face, you're very likely to defend yourself using your left hand.

Jacewicz: Hmm. I couldn't have told you that, but I guess I believe you.

Casasanto: It's been tested in the lab by a psychologist named Stanley Coren [at the University of British Columbia in Vancouver]. You can summarize with the example of people using swords and shields in days of yore. Soldiers would wield swords with their dominant hand and make approach actions with it—like stabbing the enemy— and wield the shield in their non-dominant hand to fend off attack. You want to have your dominant hand for the actions that take more dexterity. You also want to risk your less usable hand in the service of defense.

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The reason this pattern of hand use was interesting was that a large literature on motivation in the brain had suggested that the left hemisphere specializes in approach motivation, and the right hemisphere in avoidance motivation. Of course, these studies are almost entirely done in right-handers. Neuroscientists routinely exclude left-handers, thinking that they just add noise to the data. But maybe lefties, who use their left hands as their sword hands, have motivation based in their right hemisphere.

Jacewicz: And you've tested that. How did you do it?

Casasanto: We had people come into the lab and put on an electric cap. Their eyes were closed: They weren't moving, reading, or responding. We

correlated the amount of neural activity in one hemisphere versus the other with a measure of how approach-motivated these individuals are as a personality trait.

Looking at 10 different pairs of electrodes, we have found the relationship between neural activity and approach motivation goes one direction for righties and the other direction for lefties. In right-handers, the more approach-motivated you are, the more left hemisphere activity you have during rest. In lefties, the more approach-motivated you are as an individual, the more activated your right hemisphere is.

Jacewicz: You've said this has implications for how we treat mental conditions. How so?

Casasanto: On the basis of this left hemisphere model, clinically driven interventions have been developed where people use magnets or electricity to shift the balance of neural activity into the appropriate hemisphere. Clinical treatments for the most common mental-health disorders—like major depressive disorder and anxiety disorders—need to be tailored to the specifics of people's bodies. If right-handed patients receive one of these therapies, increasing neural activity in the left hemisphere is likely to benefit them. If left-handers receive the same treatment, that's likely to be injurious. That's the opposite of what they need. But, you can just flip the therapy and treat lefties appropriately for their neural organization.

Jacewicz: What are some other things we can do to counter these handedness biases?

Casasanto: We know that left-right position on a ballot can influence how many votes a candidate gets. So we'd better make sure that candidates' names are rotated through the left-right positions on any ballot that has columns or any voting booth that has columns of candidates. This is not

standard practice.

More broadly, if we become aware of these biases, they might not go away—but we might be less susceptible to them.

Jacewicz: Have you noticed any change in your own bias since you started this research?

Casasanto: I have become aware of a tendency to favor things on the right side. I lived for a while in the Netherlands, and there was an open-air market with a sausage booth. The samples would be arranged on the table from left to right. Week after week, my favorite sausages were the ones on the far right of the table.

These influences of space on judgment ... may provide a post-hoc explanation for some puzzling data. For instance, there's a classic paper from 1978 looking for an effect of aroma on shoppers' buying behavior. Two social psychologists had some stockings arranged in a row from right to left, and they sprayed them with different perfumes. It turned out that odor had no significant effect on people's judgment. What mattered was the left-to-right position of the stockings in space. The researchers were stumped. Now we have a potential explanation.

ABOUT THE AUTHOR

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