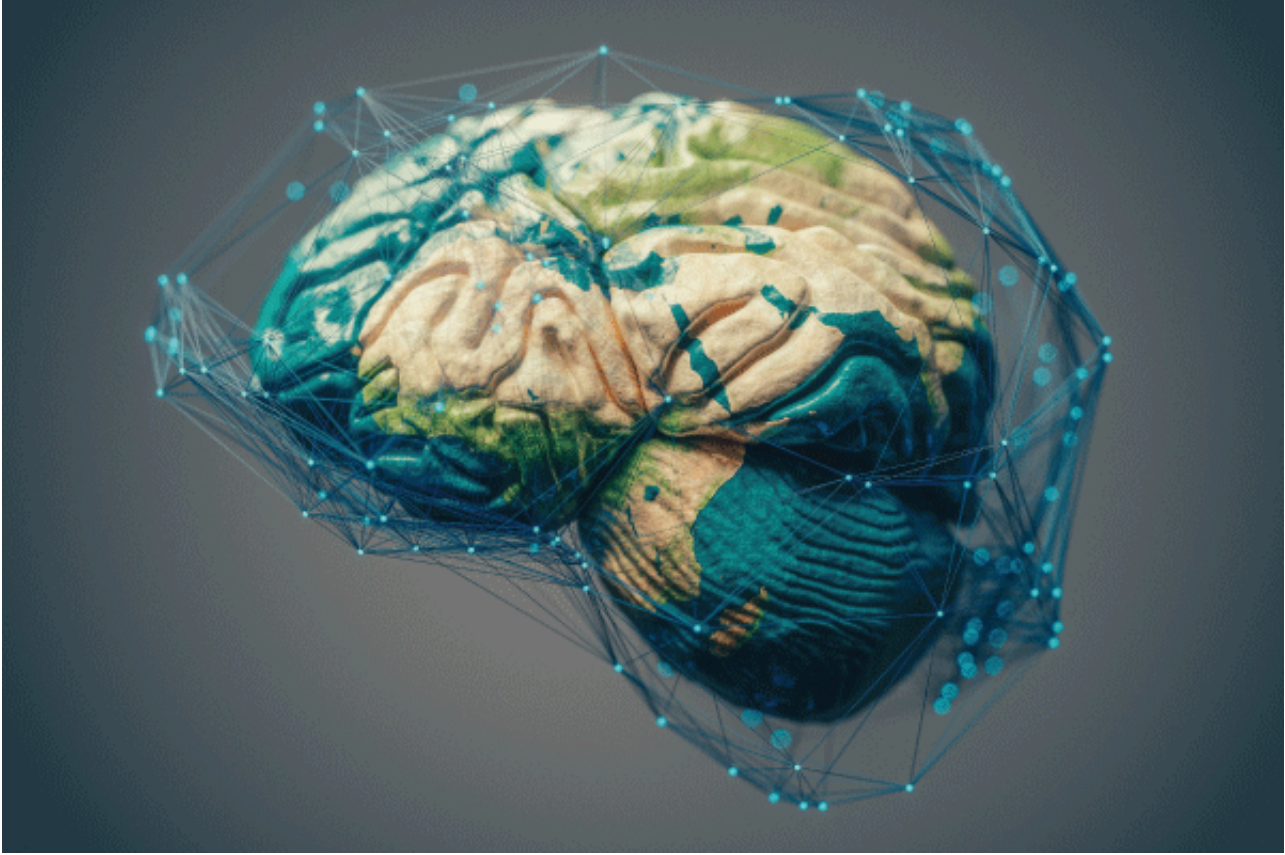


Perspectives and the Truth: Another Case for Diversity and Inclusion

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Is the human mind like a computer? Since the cognitive revolution in the middle of the 20th century, psychology has often assumed that it is. This assumption proved highly generative, defining the foundation for many subareas, including cognitive psychology, social cognition, and cognitive development, among others. From the flowcharts we use to illustrate our ideas to the reaction times that so many of us hold dear as a measure of whatever we wish to quantify, the metaphor is everywhere. And I don't doubt that it contributed greatly to the advancement of our discipline. However, given the metaphor's massive success, it is easy to forget the pitfalls of analyzing the mind as a computer.

The human mind is inherently interdependent with its ecological, social, political, and cultural environment. Therefore, any understanding of the mind is necessarily incomplete if it fails to consider this interdependence. By hiding the mind's interdependence with its environment, the computer metaphor may obscure why psychological science requires diversity in both study participants and the scholars who test them. Inclusion and diversity are required for reasons of social justice and fairness, as I discussed in my last column. I believe, however, that yet another strong case for them can be made.

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In the eyes of the beholder

Let me start with the photograph below. It shows a Japanese macaque on a little island in Japan called Koshima Island. She is washing her sweet potato and eating it. The potato washing, first documented in 1954 by a Japanese research team led by Kinji Imanishi (see Hirata et al., 2008, for this history), is now credited as one of the first indications that nonhuman animals have cultural and social (as opposed to genetic) modes of transmitting behaviors ([de Waal, 1999](#)).



In

1954, a Japanese research team led by Kinji Imanishi first documented macaques washing and eating sweet potatoes on the Japanese island of Koshima. This discovery is credited as one of the first indications that nonhuman animals have cultural and social modes of transmitting behaviors (de Waal, 1999).

When this phenomenon was first observed on Koshima Island, a cultural rift arose among scientists. Upon their original discovery, Japanese primatologists saw a macaque community connected by kinship ties ([Hirata et al., 2008](#)). Once one of the members washed a potato, the behavior spread through those social ties. Looking at the same scene, however, Western researchers saw something entirely different. They saw each animal receive a series of reinforcements from its environment—reinforcements that enabled the monkey to acquire the behavior. The behavior, in other words, was a matter of individual learning. Recounting this history, Frans de Waal (2003) provided a lucid account of how many Western scholars fiercely opposed and even ridiculed the Japanese primatologists for their anthropomorphism.

It took several decades for the field to recognize that “animal culture” exists ([Whiten et al., 1999](#)). It was also not until relatively recently that the field began to acknowledge the significance of kinship ties in animal communities ([de Waal, 2003](#)). Were the Western scholars entrenched in their individualistic cultural tradition? This tradition may obscure the role of the social and, as a result, may have primed the researchers to interpret the monkeys’ behavior in a certain way (i.e., as a response to doses of reinforcement). For their part, the Japanese primatologists also got stuck in their cultural lens. They knew kinship ties are significant, a priori, from their culture. But that focus on the social may have diverted their attention from individual mechanisms.

Listen to *Under the Cortex* for more from Frans de Waal on how primatology and psychology intersect on issues of culture and behavior.

It is beside the point to ask which side won the debate. In all likelihood, the ultimate truth encompasses multiple small truths from both sides. Only by integrating insights from both camps can one hope to achieve the most comprehensive view of the behavior. This is precisely what de Waal concluded:

To gain a full picture requires scientists with all kinds of backgrounds, who together take on a task equivalent to comparing the images in a range of fun-house mirrors. Somewhere in that heavily distorted information resides the truth. (de Waal, 2003, p. 298)

If this point applies to monkeys, it may well be even more applicable in analyzing human behaviors. Looking at the same behavior, people can see different things because they cannot free themselves from their cultural lens. Ethnocentrism results from this. Even if no ethnocentric biases are involved, such disagreement is problematic because the goal of science is to arrive at a single scientific description of the truth. The best possible solution to this dilemma is to bring in as many of de Waal's "fun-house mirrors" as possible and seek the big truth by extrapolating from the observations these mirrors would give you. Better science would require ethnic or racial, cultural, gender, socioeconomic, and political diversity among the scientists. My December column on systemic racism discussed this point on the issue of race in particular.

Psychological diversity

De Waal's point above is important. However, we can push it a step further. The perspectives researchers bring to their research are shaped by their cultural and ethnic traditions. In human psychology, researchers typically share cultural and ethnic traditions with their research participants. Because of this, it is very difficult for them to recognize culture as a factor guiding and shaping the participants' behaviors. Over the last few decades, however, a growing body of evidence has shown that culture, broadly conceived, is an active component of how people think, feel, and act.

The time now would seem ripe for us, as a field, to look for a new framework or paradigm. The documented diversity lends itself to intellectual innovations.

Consider cognitive dissonance as an example. Dissonance involves a cognitive conflict and negative feelings associated with it. Imagine you experience dissonance after telling a lie to somebody. What do you feel? There are two possibilities. First, you might be angry at yourself or feel guilty for the unethical act you committed. This way of feeling is in line with the original formulation of dissonance theory ([Festinger, 1957](#)). The best evidence for it is that dissonance is most robust when the choice to act unethically (by telling a lie, in this example) is made *in private* ([Cooper & Fazio, 1984](#)). Hidden behind this feeling of dissonance is a cultural belief that behavior is driven and guided by the internal attributes of the self. Dissonance occurs when those internal attributes (say, honesty or integrity) are called into question.

Second, however, you might feel afraid that the unethical act could become public, which would produce intense shame. I suspect that this way of feeling is less common in Western contexts. However,

my colleagues and I concluded that it probably is the best description of how Japanese and other East Asians feel under such circumstances. The best evidence for it is that dissonance is stronger for these individuals when the choice to act unethically is made *in public* ([Kitayama et al., 2004](#)). Hidden behind this second feeling of dissonance is a cultural belief that behavior is a matter of managing social honor or “face.” Dissonance occurs when this social honor is called into question.

Are the two cultural beliefs merely alternative interpretive frames that are applied to a psychological behavior (the feeling of dissonance in this case) only after the behavior is observed? This example shows that they are much more than that. They are part and parcel of the psychology that produces the feeling of dissonance. This psychology is shaped by the environment—in this case, the cultural environment. If this example were an isolated case, it could be dismissed. But similar examples abound. Consider the following:

- Some perceptual illusions, including that famous Müller-Lyer illusion, depend, in part, on the ecological environment ([Segall et al., 1966](#)).
- Linguistic conventions of categorizing color spectrum and defining color names influence how the colors are perceived ([Davidoff et al., 1999](#)).
- Emotions involve internal feelings of arousal and pleasantness, and this aspect is very salient to many of us in Western cultures. But some non-Western cultures appear to regard emotions primarily as a way to conceive and negotiate social relations ([Lutz & White, 1986](#)).
- Some cultures have no word to describe basic emotions, such as joy or sadness. It is legitimate to ask what would have happened to basic emotion theory if the theory’s proponents had been from cultures that had no word for the basic emotions ([Wierzbicka, 1986](#)).
- The sense of spatial orientation also is dependent on language and language use ([Levinson & Max Planck Institut für Psycholinguistik Staff, 2003](#)). The egocentric mode (e.g., “Turn left at the next corner”), so familiar to many of us in Western contexts, biases how we perceive the space. Many others find a more field-centric mode (e.g., “Go east at the next corner”) to be dearer to their heart.
- The developmental pathway leading up to individuation and independence, common in European American, middle-class contexts, is not widely shared in many non-Western contexts, where the pathway is formulated by symbiotic interdependence (Greenfield et al., 2003).
- Views of the self as independent (dominant in the West) or interdependent (dominant outside of it) lend themselves to different modes of thinking, feeling, and acting ([Markus & Kitayama, 1991](#)). The dissonance research discussed above is part of this body of work. The cultural variations in cognition, emotion, and motivation documented in this work have been extended to brain function and structure ([Kitayama et al., 2017](#); [Yu et al., 2019](#)).

This literature calls for a concerted effort to increase diversity, inclusion, and representation in psychological research for a simple reason. We need to sample the broadest possible range of people around the globe (Henrich et al., 2010). However, the implications of this work go beyond the need for diversity in research participants. Just as importantly, they may call for a new way of thinking about what the mind is and how it functions in the world. The computer metaphor—the dominant metaphor of the discipline over the last half century—masks the documented diversity. It has an inherent difficulty addressing this diversity: How can a computer chip be influenced by the environment? So, the time now would seem ripe for us, as a field, to look for a new framework or paradigm. The documented diversity lends itself to intellectual innovations. But what would such a new paradigm be?

The mind: Biologically prepared and socioculturally completed

Fortunately, a seed for a new framework was already sown during the cognitive revolution. As early as the 1980s, when most in our field remained excited by the success of the cognitive revolution, Jerry Bruner—one of the founders of cognitive science—lamented that the revolution was a failure. Here is what he had to say in his 1990 classic, *Acts of Meaning*:

Very early on... emphasis began shifting from “meaning” to “information,” from the construction of meaning to the processing of information. These are profoundly different matters. (Bruner, 1990, p. 4)

This passage makes it clear that Bruner intended the cognitive revolution as the beginning of studying meaning-making. He was frustrated that this prospect was averted when the emphasis shifted quickly to information processing instead. To understand his frustration, however, we must be clear about what meaning-making is and how it is different from information processing.

Bruner believed, and I agree, that the process of meaning-making is fundamentally social, interpersonal, and above all, cultural. To illustrate, here is an exercise: List all behaviors and events that you think represent “freedom.” The list you generate is part of what you mean by “freedom” (see Uchida & Kitayama, 2009, for a similar method). Note that behaviors and events are real stuff “out there” in your culture—things people actually do. And to know the meaning of freedom is to have access to these instances of freedom. These instances may, of course, be abstracted to form a prototype of freedom. Remember a classic study by [Posner and Keele \(1968\)](#), who elegantly showed the abstraction of prototypes from dot patterns. But the important point is that the meaning of freedom is based on behaviors and events that exist in your culture as instances of this concept. In other words, the meaning of freedom is defined by a loosely bound range of public behaviors and events your culture labels as instances of freedom. Once you’ve got the meaning, you may then act freely or feel oppressed or constrained by your government’s tyranny. You may even want to “escape from freedom” (Fromm, 1941). All the behaviors motivated by the meaning of freedom are then brought back into the behavioral pool associated with freedom in your community, updating this meaning as a collectively shared asset and resource.

Bruner was disappointed because, for him, the collective dynamic of meaning-making was the inspiration for the revolution. It was the revolution’s spirit. However, most subsequent researchers ignored this spirit. Instead, they studied how people process information. For example, they studied how people process words, including the word “freedom,” by rapidly showing those words to experimental participants. The researchers barely paid any attention to how the meaning of freedom was produced and maintained in society at large. Surely even fewer recognized that meaning production and information processing were “profoundly different matters” (Bruner, 1990, p.4).

Where do the public patterns of behaviors and events that anchor our meanings come from? Well, they come from history and cultural traditions. Different cultural traditions are organized by divergent sets of scripts, conventions, rituals, and the like. In all likelihood, many of them reflect long-term ecologies and the social institutions these ecologies have supported ([Talhelm et al., 2014](#)). And as the recent Black Lives Matter movement made apparent, this process also depends greatly on power and status differences across groups. (Again, I refer readers to my December column.) Once people are born into a cultural tradition, they are socialized and “trained” to act in the cultural milieu defined by these scripts,

conventions, and rituals. In the process, their brains are rewired and reorganized to act properly and effectively in the cultural milieu (Kitayama & Salvador, 2017). There then emerges a set of spontaneous psychological tendencies suitable for acting in the milieu. When they operate, they reproduce many of the same scripts, conventions, or rituals. In other words, human agency emerges through engagement in historically constructed cultural milieus while reproducing these milieus over time. This agency both incorporates and reproduces the meaning Bruner intended to study when he joined forces with his colleagues to initiate the cognitive revolution. The effort stalled, but I believe that the time is ripe to return to the revolution's original spirit and bring it back to the future.

In short, many millions of years of evolution have equipped humans with biological component systems preparing them to participate in cultural practices. That cultural participation then modifies these systems as each person produces and reproduces the community's practices and the meanings anchored in such practices. Thus, the human mind and social and cultural processes are mutually constitutive (Markus & Kitayama, 2010). And this explains why different perspectives evident in varying cultural, ethnic, racial, and other numerous traditions (e.g., de Waal's "fun-house mirrors") are not just a matter of seeing and interpreting any given behavior after the fact. More fundamentally, these perspectives are an integral part of the process involved in the production of psychological diversity.

In conclusion

Let me reiterate: The psychological diversity that has been documented cries out for a new paradigm to replace the dominant metaphor for the mind. To further uncover this diversity, however, we need both diverse samples and a diverse group of scientists. Therefore, inclusion and diversity are critical to keeping the field intellectually vibrant. We also need them to improve our science's validity, quality, and ultimately translatability. These considerations, to me, amount to another strong case for inclusion and diversity in psychological science.

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References

[Bruner, J. \(1990\). *Acts of meaning*. Harvard University Press.](#)

[Cooper, J., & Fazio, R. \(1984\). A new look at dissonance theory. *Advances in Experimental Social Psychology*, 17, 229–266. \[https://doi.org/10.1016/S0065-2601\\(08\\)60121-5\]\(https://doi.org/10.1016/S0065-2601\(08\)60121-5\)](#)

[Davidoff, J., Davies, I., & Roberson, D. \(1999\). Colour categories in a stone-age tribe. *Nature*, 398 \(6724\), 203–204. <https://doi.org/10.1038/18335>](#)

[de Waal, F. B. M. \(1999\). Cultural primatology comes of age. *Nature*, 399\(6737\), 635–636. <https://doi.org/10.1038/21310>](#)

[de Waal, F. B. M. \(2003\). Silent invasion: Imanishi's primatology and cultural bias in science. *Animal Cognition*, 6\(4\), 293–299. <https://doi.org/10.1007/s10071-003-0197-4>](#)

[Festinger, L. \(1957\). *A theory of cognitive dissonance*. Stanford University Press.](#)

Fromm, E. (1941). *Escape from freedom*. New York: Farrar & Rinehart, Inc.

[Greenfield, P. M., Keller, H., Fuligni, A., & Maynard, A. \(2003\). Cultural pathways through universal development. *Annual Review of Psychology*, 54\(1\), 461–490. <https://doi.org/10.1146/annurev.psych.54.101601.145221>](#)

[Henrich, J., Heine, S. J., & Norenzayan, A. \(2010\). The weirdest people in the world? *Behavioral and Brain Sciences*, 33\(2–3\), 61–83. <https://doi.org/10.1017/S0140525X0999152X>](#)

[Hirata, S., Watanabe, K., & Masao, K. \(2008\). “Sweet-potato washing” revisited. In T. Matsuzawa \(Ed.\), *Primate Origins of Human Cognition and Behavior* \(pp. 487–508\). Springer Japan. \[https://doi.org/10.1007/978-4-431-09423-4_24\]\(https://doi.org/10.1007/978-4-431-09423-4_24\)](#)

[Kitayama, S., & Salvador, C. \(2017\). Culture embrained: Going beyond the nature-nurture dichotomy. *Perspectives on Psychological Science*, 12\(5\), 841–854. <https://doi.org/10.1177/1745691617707317>](#)

[Kitayama, S., Snibbe, A. C., Markus, H. R., & Suzuki, T. \(2004\). Is there any “free” choice? Self and dissonance in two cultures. *Psychological Science*, 15\(8\), 527–533. <https://doi.org/10.1111/j.0956-7976.2004.00714.x>](#)

[Kitayama, S., Yanagisawa, K., Ito, A., Ueda, R., Uchida, Y., & Abe, N. \(2017\). Reduced orbitofrontal cortical volume is associated with interdependent self-construal. *Proceedings of the National Academy of Sciences, USA*, 114\(30\), 7969–7974. <https://doi.org/10.1073/pnas.1704831114>](#)

[Levinson, S. C., & Max Planck Institut für Psycholinguistik Staff. \(2003\). Frames of reference. In *Space in language and cognition: Explorations in cognitive diversity*. Cambridge University Press.](#)

[Lutz, C., & White, G. M. \(1986\). The anthropology of emotions. *Annual Review of Anthropology*, 15, 405–436. <https://doi.org/10.1146/annurev.an.15.100186.002201>](#)

[Markus, H. R., & Kitayama, S. \(1991\). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98\(2\), 224–253. <https://doi.org/10.1037/0033-295X.98.2.224>](#)

[Markus, H. R., & Kitayama, S. \(2010\). Cultures and selves: A cycle of mutual constitution. *Perspectives on Psychological Science*, 5\(4\), 420–430. <https://doi.org/10.1177/1745691610375557>](#)

[Posner, M. I., & Keele, S. W. \(1968\). On the genesis of abstract ideas. *Journal of Experimental Psychology*, 77\(3, Pt.1\), 353–363. <https://doi.org/10.1037/h0025953>](#)

[Segall, M. H., Campbell, D. T., & Herskovit, M. J. \(1966\). *The influence of culture on visual perception*. Bobbs-Merril.](#)

[Talhelm, T., Zhang, X., Oishi, S., Shimin, C., Duan, D., Lan, X., & Kitayama, S. \(2014\). Large-scale psychological differences within China explained by rice versus wheat agriculture. *Science*, 344\(6184\), 603–608. <https://doi.org/10.1126/science.1246850>](#)

[Uchida, Y., & Kitayama, S. \(2009\). Happiness and unhappiness in East and West: Themes and variations. *Emotion*, 9\(4\), 441–456. https://doi.org/10.1037/a0015634](https://doi.org/10.1037/a0015634)

[Whiten, A., Goodall, J., McGrew, W. C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C. E. G., Wrangham, R. W., & Boesch, C. \(1999\). Cultures in chimpanzees. *Nature*, 399\(6737\), 682–685. https://doi.org/10.1038/21415](https://doi.org/10.1038/21415)

[Wierzbicka, A. \(1986\). Human emotions: Universal or culture-specific? *American Anthropologist*, 88\(3\), 584–594. https://doi.org/10.1525/aa.1986.88.3.02a00030](https://doi.org/10.1525/aa.1986.88.3.02a00030)

[Yu, Q., Abe, N., King, A., Yoon, C., Liberzon, I., & Kitayama, S. \(2019\). Cultural variation in the gray matter volume of the prefrontal cortex is moderated by the dopamine D4 receptor gene \(DRD4\). *Cerebral Cortex*, 29\(9\), 3922–3931. https://doi.org/10.1093/cercor/bhy271](https://doi.org/10.1093/cercor/bhy271)