Looking Beyond the ‘Neuro’ Revolution in Psychological Science

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 There are generations of scientists in every discipline that share similar sensibilities. Much like there are Baby Boomers, Gen X’ers, and Millennials who are shaped by the cultural trends and societal opportunities that helped define their likes, dislikes, and lifestyles, there are also eras within a scientific discipline that shape its scientists.

For me, I am a “tweener” on both fronts. That is, based on the year I was born, I am somewhere between a Baby Boomer and a Gen X’er, depending on who is setting the cut-off date. As an early hip-hop fan, I identify more with the Gen X’ers culturally, but I have my Boomer tendencies too. In terms of science, I was trained in cognitive psychology at a time that might be considered the end of the cognitive revolution and the beginning of the neuroscience revolution. As an early member of the “neuroscience” generation of psychological scientists, I am proud to say I attended the first Summer Institute in Cognitive Neuroscience, and got one of the first fellowships from the James S. McDonnell Foundation to train cognitive psychologists in neuroscience techniques. I am lucky to count among my mentors some of the most creative experimental psychologists I know (Harry Bahrick, Bill Hirst, Marcia Johnson), as well as fantastic neuroscientists (Joe LeDoux), and the godfather of cognitive neuroscience himself, Michael Gazzaniga. This scientific transition, like a generational transition, did not happen overnight, and those of us somewhere in the middle picked up on the sensibilities of both scientific eras to varying degrees.

Although I don’t consider myself “old” in my scientific career, when I am talking with young scientists about human brain-behavior studies before the days of functional magnetic resonance imaging, I sure do feel old (I might as well be talking about how I used to trudge to school every day for miles through the snow — obviously before the days of global warming). This feeling of being *scientifically* old every time I start to describe the remarkable transition I have witnessed in psychological science throughout my career can’t help but make me wonder what comes next. That is, what will follow the neuroscience revolution in psychological science — and are we there yet?

There are really two parts to this question. First, is the neuroscience revolution in psychological science over? In my opinion, this depends on what you mean by "over." For a while there, it seemed as if many of us walked around with rose-colored glasses shaped like brains. Just showing a little evidence that an interesting behavior was linked to brain activity seemed like news (honestly, what did we expect?). And then there was the birth of the "neuro" disciplines: cognitive neuroscience, social neuroscience, neuroeconomics, affective neuroscience, cultural neuroscience — need I go on? As a group, we no longer seem to be as "wowed" by brain science as we once were and also, for some of us, not as worried about its place in psychological science. Neuroscience has integrated with other techniques used to investigate psychological functions, and a greater appreciation for the value of different and often multiple approaches to the study of human behavior has emerged. In other words, neuroscience in psychological science has matured. This maturation does not lessen the value of the tools of neuroscience, but rather puts them into perspective. Neuroscience has become an important part of everyday psychological science. In this way, the influence of neuroscience in psychological science is not over, but it is no longer revolutionary.

However, to say we have moved from the neuroscience revolution in psychological science to a new stage suggests we can define what we are moving toward. I think we are still figuring this out. Examining other transition points in psychological science shows two important factors help drive these shifts. The first is the availability of new tools, and the second is important questions that current approaches cannot address. In terms of tools, there is no question that as a society we are in a technological/communication revolution that is changing our work lives, our social lives, and the type and availability of data that can be used to document human behavior. Putting current issues of government surveillance aside, we are just beginning to uncover ways that this treasure trove of tools and data can be used to answer psychological questions. Many of the current generation of trainees in psychological science, who fall somewhere between the Gen X'ers and Millennials, grew up with these new ways of socializing and communicating and are likely to have unique insights into how these tools can inform psychological questions. I am excited to see how they will lead us into the future.

As for the questions that current approaches cannot yet address, there is an emerging push to get more practical, to be more translational, to help solve problems now. To me, this is another sign that our field has matured. We seemed to have done a decent job of convincing society that psychological science is important, but this has only increased the demand for us to show how what we have discovered can be used outside the laboratory to help improve lives. Although most of us have this goal in the abstract, at times we also need to be more concrete. For example, economists routinely inform public policy in ways psychological scientists have not, even though our insights may be equally, or even more, valuable.

Through these APS columns, I hope to introduce ideas that help inspire discussions of what is next in psychological science, and how we might get there. I have invited guest columnists who have unique perspectives on these topics, and I will add my own insights as well. As a generational "tweener" in science and in life, I feel like I am witnessing a new "tweener" generation emerge. Like those before me, I hope to do my part to help this next generation discover the scientific sensibilities that will define their contribution to the future of psychological science.