Interview With David Amodio

Research

How has the field of social neuroscience evolved over the past few years? In what directions do you see the field headed in the years to come?

Social neuroscience has really grown over the past decade. Interestingly, the social neuroscience approach grew out of the field of psychophysiology by SPR members such as John Cacioppo and Gary Berntson, though the more recent surge was galvanized by the emergence of cognitive neuroscience and new neuroimaging methods. Ten years ago, the emphasis was on mapping social cognition constructs on the brain, to see where they "lit up." More recently, the field has shifted to more sophisticated work on the relationship between neural and sociocognitive mechanisms. In this way, researchers are beginning to use neuroscience ideas to inspire new models of social cognition and emotion.

Social neuroscience has also become more interdisciplinary in recent years, integrating social psychology, cognitive neuroscience, psychoneuroimmunology and endocrinology, and genetics, etc., and examining social processes across species. To me, social neuroscience characterizes a broadly integrative approach to questions about the brain, mind, and social behavior. There are a lot of integrative hybrid fields, but social neuroscience really tries to connect levels of analysis from molecules all the way up to societies.

Your work focuses on an important social and political topic - racial prejudice and stereotypes. Do you see your research affecting social change (e.g., policy, training or other applications)?

I sincerely hope so! Issues of social justice have always been important to me, and I use the context of prejudice and discrimination to frame my research on basic mechanisms of social cognition and self-regulation. My goal has been to illuminate basic mechanisms of the mind and social behavior in a way that can contribute to social justice and policy. Also, from a scientific perspective, the area of intergroup relations provides an extremely rich context for studying the interplay of cognitive, emotional, and motivational factors as they relate to psychophysiology and social behavior.

You recently published a study on the neural correlates of liberalism and conservatism that got a lot of press (and blog) coverage. Some of this coverage was sensationalized and misconstrued the results of the study; you even went online (e.g., on science blog, neurocritic) to respond to some critics and clarify misunderstandings. Did these experiences shape the way you think about studies that make it into the press? To what extent do you think it is important for scientists to make their work accessible to the non-scientific community? How can this best be done while maintaining the integrity of the work?

That was an interesting experience. At first I was just excited for the attention, since it's rare that our work is noticed by the press. My paper simply showed that political liberalism was correlated with larger ERN and no-go N2 amplitudes on the go/no-go task, which we interpreted as a link between political ideology and individual differences in conflict monitoring. And so I was shocked when I saw newspaper headlines like "Research shows politics are hardwired," and "Study finds genetic basis for political leanings"! I got threatening emails and letters from conservatives accusing me of pushing a left-wing academic agenda while scientifically illiterate journalists claimed I was practicing junk science. It got annoying fast.

I learned two main things from this experience. First, the general public needs better science education. People are extremely interested in science, but they often lack a basic understanding of concepts like the scientific method, experimental control, and the difference between correlation and causation. So, I began to use my media interviews as an opportunity to promote science and science education and to explain these basic concepts.

Second, I got first-hand experience with journalists and pundits who seek to slander scientists and academics and who try to twist facts to support their political positions. This behavior always came from right-wing pundits. Left-wing pundits had political motivations too, but they tended to be more interested in the actual facts of my research. So, after trying my best to be apolitical, I decided I should never let fears about politics or anything else influence how I do or present my work. After dealing with right-wing pundits who twisted my facts over and over again, I started to just call them on it. I also got over my concerns about being political. That said, I haven't done any research on political ideology since!

I should add that the media attention also drew attention from other scientists who might not otherwise be interested in my work. This led to a lot of interesting and productive discussions, and I think it inspired some

new ideas about psychophysiology and high-level social attitudes. So, within the scientific community, this experience was actually very rewarding.

Your research is interdisciplinary by nature, integrating perspectives and methods from cognitive neuroscience with social psychology and psychophysiology. What new research areas or tools would you like to explore in the future?

I tend to use whatever tools are best suited to my psychological question. Being a psychophysiologist, I use a lot of standard psychophysiology methods. But physio measures don't always provide the best tests my questions. Methodologically, the most important "tool" is the basic behavioral experiment. This is true even for psychophysiologists, since a good psychophysiology experiment is often built on a strong behavioral foundation. But having a big toolkit allows you to ask a broader range of questions. This is a major advantage of the psychophysiology approach.

In my lab, we've used a range of physiological methods, including ERPs, EEG asymmetry, EMG, SCR, fMRI, MEG, hormone and immune system assays, and molecular genetics, though the methods always follow from the question. Recently, my lab has begun to focus on how mechanisms of cognitive control influence the visual perception of faces (e.g., of ingroup vs. outgroup members), and so we've been incorporating a lot of visual psychophysics into our work. My students have especially led me in this direction. Another new direction for my lab is computational and mathematical modeling. Trying new methods keeps the research interesting, and it often inspires new ways of thinking about a problem.

Professional experience

You currently sit on the editorial board of seven journals, and serve as a reviewer for numerous others. How has this professional service influenced your career and your research interests?

Being involved in the editorial process gives you insights on the publishing process. When an editor makes a decision on a paper you reviewed, he or she will often send the reviewers a copy of the action letter, along with the other reviews, and so you can see what other reviewers thought and how the editor took this info into account. I just began a term as an Association Editor at the *Journal of Personality and Social Psychology*, and so I am now experiencing things from the action editor's point of view. One thing I learned is that action editors are rooting for authors to have a successful

paper, and that for most journals, the editor is less of a gatekeeper and more of a facilitator. This has influenced the way I now approach the writing and submission process.

You've had a very successful career at NYU over the past six years, including recently being honored with the Presidential Early Career Award for Scientists and Engineers. Considering your many accomplishments to date, of which are you the most proud?

Well, thanks, though I see it as a work in progress. Awards are a great source of encouragement, and it's nice to know that someone in your field thinks you're doing a good job. One of my proudest moments was winning the Tursky Award at SPR as a graduate student. Coming from a social psychology program, it meant a lot to know that my research was valued in the world of psychophysiology. Another proud moment was first seeing my name in a new edition of the psychology textbook I used as an undergrad—it's surreal. Nowadays, my students' accomplishments are a big source of pride. But I have to say that meeting President Obama when I received the PECASE was probably the most exciting moment. That's hard to beat.

What kind of recommendations could you give to current students to help them launch a successful academic career? Is there anything you wish someone had told you as a graduate student that you had to learn the hard way?

Put a lot of effort into forming your research questions, and let your questions guide your approach. When looking for a job, departments want to see that you have strong questions and a clear program of research, even if you don't yet have a lot of publications. Also, be very persistent and plan to deal with a lot of rejection along the way. These rejections can provide important learning experiences. And, don't be afraid to seek help and advice from colleagues and mentors. SPR is especially supportive of students and young faculty, and it really helps to be involved in the Society and learn from its more senior members.

Personal

What are the pros and cons of working at a private university located in a major metropolitan area?

Working and living in a major city has pros and cons, as with anything. People love to visit New York, which helps with recruiting speakers and

visitors, and it often helps when recruiting students and postdocs. There is also a lot of intellectual talent in New York City, with several universities and research hospitals, which creates a rich academic environment. Although there aren't too many downsides, we have to worry about things like vibrations from the NYC subway affecting the MRI scanner, and space is always tight. But I can't complain about the culture, food, and diversity.

As an undergraduate, you double-majored in psychology and music. To what extent does music still play a role in your life? What kind of balance do you strike between work and other interests?

I'm probably not the best person to discuss "balance." Things like playing music and reading novels were important to me as an undergraduate, but once I began graduate school, I pretty much dropped those things. Research and teaching take a lot of time, plus the process of science is addictive. It often gets worse once you start an assistant professorship. However, once I started to get the hang of running a lab, teaching, and taking care of general service duties, I started to spend more time on other aspects of life. I try to see music more often, and I try to catch a play or reading or some other cultural event every month or so. It can be harder to make good friends as a professor, too, because you do not have a built-in cohort (as in graduate school) and simply because you don't have much free time. So, these days, I try to make more time for friends, too, and I am increasingly turning my attention to family matters. Everyone does this differently, though, and female professors don't always have the luxury of waiting until they have tenure before starting a family. The most important thing is to love what you do. If you do, than balance isn't so much of an issue. Working in the lab, analyzing data, writing papers, and talking about science all the time is your hobby.