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SOCIAL NEUROSCIENCE AND ITS CONTRIBUTION TO SOCIAL PSYCHOLOGICAL THEORY: INTRODUCTION TO THE SPECIAL ISSUE

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I came to be editor of this special issue through a series of unintended and unforeseen circumstances. I am a curious consumer of social neuroscience—I have chosen this term for ease of use, not for any particular historical or philosophical point of view—but certainly not an active participant in the research endeavor. I have collaborated on one fMRI study (Beer et al., 2008), but I can claim no more than an amateur's understanding of the brain and its relationship to social psychology and behavior. I don't have the background or expertise to critically evaluate claims about the meanings of specific patterns of neuro-data. Having a keen appreciation of these limitations, I structured this special issue around questions that I do feel qualified to consider. Specifically, the mission statement given to the contributors was to address "whether, when, and how neuroscience can and has contributed to social psychological theories, with the goal of presenting a variety of useful viewpoints for consumers and potential adopters of social neuroscience, as they try to understand the implications of social neuroscience for their own research and decide whether, how, and to what extent they may wish to adopt neuroscience approaches."

Of course, the primary reason for asking these questions was because these are the kinds of questions I most often hear behavioral researchers asking about social neuroscience approaches. Social psychologists want to know how these tools can help them better understand the psychological questions that drive their research, and this special issue is intended to provide some answers.

Over the past seven years, there have been a number of special issues on social neuroscience but, to my knowledge, most of them have been directed primarily at introducing the enterprise to the neuroscience community (e.g., Beer, Mitchell, & Ochsner, 2006; Heatherton, 2004; Lieberman, 2005). The notable exception, of course, is the influential special issue edited by Harmon-Jones and Devine (2003) in the *Journal of Personality and Social Psychology*. Though it has been only seven years since the publication of that issue, the field's attention to, interest in, and familiarity with social neuroscience has grown tremendously. As social neurosci-

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ence has realized a higher profile, an increasing number of researchers are asking the questions addressed in this special issue. And, over these seven years, the ability to examine those questions in depth has grown immensely, as the fruits of the labors of social neuroscientists have begun to be integrated into mainstream social psychology. I believe now is an opportune moment to consider the relationship between social neuroscience and social psychological theory and research.

Each of the contributors to this special issue offers a valuable perspective on these questions. Banaji provides a rousing introduction to the issue in a letter to young researchers considering a social neuroscience approach, arguing that the advent of social neuroscience methods presents a historical opportunity for scientific advances in the field. Cacioppo offers a big picture view of the breadth of the social neuroscience approach and of how different levels of analysis inform one another. This integrative perspective is also emphasized by Ito and illustrated with important examples. Amodio presents a detailed discussion of the advantages and challenges of social neuroscience approaches, drawing the important distinction between mapping and hypothesis testing, and offering a set of recommendations about how to make social neuroscience relevant to social psychology. Cunningham also discusses the important role of brain mapping in social neuroscience research. Bartholow focuses on the use of event-related brain potentials (ERPs) to advance social psychological theory, and provides some very detailed examples of how such advances may be realized. Klein emphasizes the breadth of social neuroscience approaches and the importance of taking advantage of that breadth, focusing specifically on the use of neuropsychology. Finally, Kihlstrom offers a skeptical view of the ability of social neuroscience to constrain social psychological theory and of the ability of domain-specific functional modules to account for many important aspects of human psychology and behavior.

Though their perspectives differ, all of the authors agree that social neuroscience is a vital new approach that has much to offer. Among the benefits commonly noted are the increased access to a variety of methodological tools, increased integration with other areas of research, both within and outside of psychology, the ability to more directly measure what is going on in the black box, including phenomena that cannot be assessed with behavioral measures alone, and the ability to inform or even constrain social psychological theory (but see Kihlstrom). At the same time, a number of contributors offered sober assessments of some of the difficulties of applying social neuroscience to social psychological theory. Among the difficulties frequently cited are the many-to-many problem—that social psychological processes are realized in many different brain regions and that each of these regions, in turn, is involved in many different psychological processes. This many-to-many problem challenges attempts to establish the construct validity of neural signatures. Other challenges include an overemphasis on fMRI and the sometimes artificial environment of the testing procedures (particularly with fMRI).

Some important distinctions are also raised among the contributions. One such distinction in the use of fMRI (and in ERP research, as well) is between brain mapping and hypothesis testing. Whereas the goal of brain mapping is to link specific patterns of neural activity to the performance of experimental tasks (and, presumably, the relevant psychological processes required to complete the tasks), hypothesis testing relies on prior brain mapping studies to derive specific hypoth-

eses about the neural activity (e.g., brain regions in fMRI) associated with social psychological phenomena. As noted by Amodio, the important work of mapping ought to precede hypothesis testing, and it is problematic to pursue both goals simultaneously. If the basic mapping is poor, then the construct validity of the psychological processes ascribed to a functional region of interest (in fMRI) also will be poor, diminishing the potential contribution of the work. In such cases, researchers should interpret their findings conservatively.

Another important distinction is between the goals of identifying neural signatures of specific processes (e.g., attention, conflict detection, inhibition) versus broader psychological constructs (e.g., the self, morality, romantic love). Many of the contributors noted this distinction and argued that social neuroscience methods are better equipped to measure processes rather than things (or outcomes). Of course, the processes may be critical components of the broader constructs (e.g., inhibition is involved in activity related to self, morality, and romantic love), and it is important to understand the roles of the processes within those contexts. Naturally, this approach is quite congenial to one of the central goals of social cognition: namely, to understand the cognitive processes that underlie social psychological phenomena.

A third important distinction is among different levels of analysis within social psychology. Cacioppo and Kihlstrom each argue forcefully that the psychological level of analysis should not and cannot be reduced to the neural level. For example, though the neural correlates of implicit bias may be identified, implicit bias cannot be re-defined as the activation of particular brain regions. Fundamentally, it is a psychological construct. As in many other sciences, different levels of analysis exist that may inform one another in important ways without replacing one another. For this reason, both Cacioppo and Kihlstrom suggest that there is great value in social neuroscience even if it does not inform or constrain social psychological theory. Identifying the neural correlates of social psychological phenomena represents its own level of analysis that is important in its own right.

As a final point, I would like to suggest that the influence of social neuroscience on social psychological theory is enhanced when it is published in social psychological journals. For a variety of reasons, much of the best social neuroscience research is published in cognitive neuroscience journals or in journals that specialize in social neuroscience. One consequence is that social psychologists may not be aware of the research. Another consequence is that the papers are less likely to explicitly address theoretical concerns of mainstream social psychology. In choosing to publish social neuroscience research in these venues, researchers are choosing their audience and the issues to which their data will be addressed. There is absolutely nothing wrong with this choice. Indeed, one of the most significant accomplishments of the social neuroscience movement has been to bring social psychological questions and models to the attention of those outside the field, greatly expanding the reach of social psychology. However, if one wishes to influence social psychological theory, then that goal will be best accomplished by reaching out to social psychologists through their journals.

With that, I invite you to dive into this special issue. I hope reading it will be as thought-provoking and enlightening for you as editing it was for me.

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