Foreword: Science's Newest Brain Child, Social Neuroscience

One can do little about the timing of one's birth. So it is a matter of unearned good fortune to be present when the evolution of one's science happens to be in a moment of some note in its development. I found myself contemplating this matter at a conference organized by John Cacioppo, the papers from which form the basis of this volume. A few years too early and I may have dispassionately watched, not just from the sidelines but a long way away, the rumblings and grumblings of the shaping of social neuroscience. A few years too late, and I may have become deeply involved, but without the thrill of being with the first generation while also acutely aware of its distinct intellectual traditions, soon to meld invisibly into the new science. It is with examined delight that I introduce a volume that above all indicates the many paths and travelers that make up social neuroscience, the excellence across generations of elder and younger, and the uncharted territory ahead.

If many paths lead to social neuroscience, it is in no small measure because somebody was there breaking ground, clearing brush, pointing ahead to the next spot suitable for a rest. John T. Cacioppo is such a person, and he predates the first generation of social neuroscientists by a few decades. His own intellectual development was remarkable in that he was self-taught and drew from every strand that linked behavior, brain, and social world. John is able to stack level-of-analysis upon level-of-analysis, shunning none in favor of another. He is both a superb reductionist and a committed integrationist. To him nothing is more satisfactory than to see it all line up. John's passion for social neuroscience, his prescience regarding its inevitability, and his pulling it all toward the center so that nothing topples off the path of discovery are among the reasons that many of us are able to be cotravelers.

Solo path breakers remain exactly that until other travelers take note and decide to crowd the path. A crowd has indeed gathered over the past decade, conversations about social neuroscience are frequent, and the decibel level is high enough

sometimes to draw in others and sometimes to be complained about by passersby. We now have a critical mass, an intellectual core to speak of; many of the chapter in this volume could not have been imagined, let alone produced, even as recently as the start of this century. Younger entrants to the field are Stakanovites who are also outspoken in their vision of the new science. They come from different places (their advisors did not attend the same meetings or even recognized each others' names) but they are bound by a desire to understand social animals and to do so by observing the activity of a three-pound organ tucked between the ears. As far as I can tell, there is no stopping.

One of the most frequently occurring human acts involves a person thinking and feeling, consciously or not, about himself or herself, others, or larger social groups. Each of us performs countless numbers of such mental acts every day, and social neuroscience is one place to examine them, to fashion individual jigsaw pieces, one at a time, readying them for a future when integration will be possible at a higher level. In the past decade, social neuroscience shed light on aspects of social life as diverse as social regulation, social rejection, impression formation, the specialty of self-knowledge and social cognition broadly, self-awareness, emotion regulation, and attitudes, beliefs, and memory involving social groups. In this volume, Cacioppo, Penny S. Visser, and Cynthia L. Pickett have paid special attention to gathering diverse methods and subject populations while keeping the focus on social thinking and feeling systems.

In the early days (e.g., 2000!), I recall a cognitive neuroscientist being legitimately surprised at being included in a social neuroscience workshop because the stimuli in her research happened to be human faces. Now, already, stronger credentials would be necessary. The fundamental questions that draw social neuroscientists together have little or nothing to do with the type of stimulus chosen; one could study face perception and have no interest whatsoever in social cognition. Instead, social neuroscience concerns all the ways in which human beings influence and are influenced by the presence, actual or imagined, of other humans. It is the act of making sense of oneself and others, and events surrounding that act, that draw people to study social neuroscience. Just as Thurstone and Likert made instruments to allow early behavioral measures of attitudes and beliefs, technologies of today allow the same topics to be studied by measuring mental and brain function. If a brain imaging study, for instance, looks somewhat infantile compared with traditional behavioral ones, there's a reason. New technologies have to be honed and it is interesting that the steps cannot easily be skipped—one must go through the same slow building layer by layer and hope for breakthroughs that will allow faster advances than are currently visible. Everybody

agrees that nothing truly novel is here yet; a large group, myself included, believe they will come.

Amidst the hullabaloo, a few matters deserve to be mentioned, even if they are no-brainers to social neuroscientists themselves. First, in doing social neuroscience, areas of work that become relevant have no boundary; many fields become of interest because many ideas and combinations of them have the potential to contribute and transform. Just look at discussions about naming—anything involving neuroscience now encounters the same ridiculous problem confronted by feminist parents deciding on the surname of their child. Social neuroscience? Social cognitive neuroscience? Social-personality neuroscience (as more individual difference work becomes possible)? And what about social cognitive developmental neuroscience? This problem will sort itself out as it has in other fields, but to me it points out just how important it is going to be to be a "lumper." This field will be kind to those who are naturals, or ready to jump into the lump.

Second, the importance of going deeply into a particular area is going to be no different than anywhere else in science, and early "splitters" will gain a great deal of leverage and even create new domains of study. However, unlike the past, going deep cannot be a solitary journey. Collaborations may look more like baseball teams, and may even bring a sense of unease, because every single piece of knowledge is not going to be equally accessible to every expert on the team. Psychologists, neuroscientists, and physicists will have to develop appropriate levels of faith in the other's expertise as well as posing challenges to another's familiar assumptions.

Third, developing respect for disciplines not one's own should not be underestimated. For example, take the group of social psychologists who for a hundred years have tried to understand mental constructs such as belief, attitude, self, and all matters that concern the understanding of oneself, individual others, and social groups. They did this when it was not fashionable to study mental constructs and they do it now when it apparently is. It is a matter of some sadness when the hammer of new technology crudely fixes a problem when a far more delicate and superior job could be done with what is already available. But such excesses are likely in any new field, and to minimize it, those who have the benefit of experience should speak up. This is not yet a field in which only those who "do it" should have opinions. Onlookers who are sympathetic to the broad enterprise of social neuroscience, but with deep knowledge of the phenomenon, must be commentators.

The brain, as an object of study, belongs to anybody who has one. It would be silly to assume that it is only for those who study what is innate, what is biological, what is genetic. The past few decades have given us as much evidence about the plasticity

of the brain and much else that was considered to be rigid and unchangeable, as it has the reverse: showing the determining power of seemingly ephemeral entities such as social situations. Among the more important potential contributions of social neuroscience is the likelihood that misguided debates about nature versus nurture that still fill popular books (and journal articles to a lesser extent) will die away.

Many years ago, I commented that those who were least likely to fall prey to a closet dualism (a more common syndrome than expressed attitudes toward dualism might suggest) were psychobiologists, because they did their work at the close intersection of biology and experience. Social neuroscience, practiced not by a few individuals from a single orientation, but by larger units of collaborators, has the great potential of wiping off the cobwebs of twentieth-century simplicities about human nature and human nurture.

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