

Preface

The dominant metaphor for the scientific study of the human mind during the latter half of the twentieth century was the computer, a solitary device with massive information-processing capacities. At the dawn of the twenty-first century, this metaphor seems dated. Computers today are massively interconnected devices with capacities that extend far beyond the resident hardware and software of a solitary computer. It is suddenly apparent that the telereceptors of the human brain have provided wireless broadband interconnectivity to humans for millennia. Just as computers have capacities and processes that are transduced through but extend far beyond the hardware of a single computer, the human brain has come to be recognized as having evolved to promote social and cultural capacities and processes that are transduced through, but that extend far beyond, a solitary brain.

The notion that humans are inherently social creatures is no longer contestable, either. Human infants will not survive to contribute to the gene pool unless they receive care and nurturance over an extended period of time. As adults, humans are still not isolative by nature, nor are they particularly strong, fast, or stealthy relative to other species. Humans are an adaptable and formidable species because of their ability to think, to develop and use tools, and to work together. It may be that the genetic constitution of species characterized by a negligible period of dependency is reducible to the reproductive success of individual members of the species. The genetic constitution of *Homo sapiens*, however, derives not simply from an individual's reproductive success but more critically from the success of one's children to reproduce. Hunter-gatherers who, in times of famine or danger, chose not to return to share their food or protection may have survived to hunt and reproduce again, but their genes were also less likely to be propagated by their offspring. In contrast, those who yearned to return or assist others despite personal deprivation, threats, or hardship, and individuals who protected and nurtured those close to them, were more likely to have offspring who survived to contribute to the human gene pool. In short, humans have

evolved a brain and biology whose functions include formation and maintenance of social recognition, attachments, alliances, and collectives; and development of communication, deception, and reasoning about the mental states of others.

The field of social neuroscience has been stimulated by these recognitions and by the development of new methods that permit more thorough plumbing of the brain and mind. Special issues of journals on the topic of social neuroscience have appeared or are in the works, in *Neuropsychologia* (2003), *Journal of Personality and Social Psychology* (2003), *Political Psychology* (2003), *Biological Psychiatry* (2002), *Journal of Cognitive Neuroscience* (2004), and *Neuroimage* (in press), and numerous reviews of the field have appeared since the early 1990s in outlets ranging from the *American Psychologist* and the *Annual Review of Neuroscience* to *Current Opinion in Neurobiology* and *Trends in Cognitive Sciences*.

The current volume builds on this burgeoning literature in three ways. First, rather than addressing the vast array of questions that fall under the rubric of social neuroscience, it focuses specifically on the neurobiological underpinnings of social information processing; more specifically, on mechanisms underlying people thinking about thinking people. Recent work in evolutionary biology and in social neuroscience suggests there may be something special about social cognition. Three distinctions can be drawn: (1) cognitive operations that represent general information processes acting on social stimuli, (2) cognitive operations that evolved from the adaptive value they conferred to social information processing but that have been exapted for general information processes, and (3) cognitive operations that are specific to social stimuli. Contributions to this book bear on these distinctions, as well.

Second, too often the treatments of social neuroscience have been limited to work within a given disciplinary perspective, when among the strengths of social neuroscience is its multidisciplinary approach. This book therefore draws heavily on the work of psychologists, neurobiologists, psychiatrists, radiologists, *and* neurologists, revealing how the future of the field lies in the confluence of these perspectives.

Third, a hallmark of social neuroscience is the use of multiple methods that bridge disciplines and levels of analysis. Accordingly, the volume draws on research using many methods, including functional brain imaging techniques, patients with brain lesions, comparative analyses, and developmental data. As in any book this size, gaps in coverage exist. Although animal and patient data are represented, we barely scratch this literature. The goal, however, was to provide an illustrative rather than exhaustive treatment of the topic of people thinking about thinking people. We hope this volume contributes to further integrations across what have historically been viewed as disparate literatures.

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