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Behavioral Science Comes of Age

PEOPLE ARE FASCINATED BY THE BRAIN, IN LARGE PART BECAUSE OF A GREAT INTEREST IN understanding their own minds and mental health. Over a century of neuroscience and psychological research has convinced most people that “Descartes died,” leaving the old mind/brain dualism behind. The reality that we don’t have a mind separate from the rest of our body has been brought home in many experimental ways, perhaps especially by modern neuroimaging techniques that allow investigators to look into the brains of living, awake, and behaving human beings—watching minds in action.

That the brain is the seat of the mind does not necessarily mean that a purely reductionist approach will, in the long run, fully explain the workings of the mind. In fact, there is no evidence that we will be able to understand all aspects of the mind simply in molecular neurobiological terms. At the same time, a purely “up-uctionist” approach won’t meet the need either. We can’t understand the mind through working only at the behavioral level. Instead, we will need both biological and behavioral research, separately and in combination.

Great progress has been made in the past decade in neuroscience, behavioral science, and behavioral neuroscience, and we now have the scientific sophistication to make even more rapid advances in understanding the brain and mind. Neuroscience is among the fastest-growing disciplines of biology and has shown extraordinary recent productivity. Indeed, we have probably learned more about the brain in the past 20 years than in all of recorded history.

Over the same period, behavioral science has also come of age, having moved way beyond simple studies of rats running in mazes and simple theories of human behavior that caused many scientists to doubt the power of analysis at that level. As a psychologist trained in the 1960s, I frequently had to fend off allegations that psychological science served primarily to confirm common sense; but behavioral science now more often revises conventional wisdom. For example, as recently as 35 years ago, newborn infants were believed to be incapable of learning about their worlds. But subsequent decades of research on infants have falsified that belief by showing how newborns acquire information about and interact with their environments.

Three Reviews in this week’s *Science* illustrate how behavioral science is making progress in explaining such complex concepts as how people process emotionally significant information (Niedenthal, p. 1002), how morality can be both universal and culturally variable (Haidt, p. 998), and how children develop resistance to scientific explanations if those explanations contradict their common-sense views of the world (Bloom and Weisberg, p. 996).

When *Science* posted its list of the 125 most challenging and important questions facing the scientific enterprise in July 2005, many were behavioral in nature or had components requiring a collaborative approach that included behavioral scientists: “What is the biological basis of consciousness?” “How are memories stored and retrieved?” “How did cooperative behavior evolve?” “Why do we dream?” “How much of personality is genetic?” Behavioral scientists, often working in multidisciplinary teams, are making progress on each of these.

Sophisticated behavioral analyses are also being applied to many of the most pressing societal issues of our era. Understanding terrorism is among the most timely and challenging; equally important is exploring the mechanisms through which poverty exerts its pervasive effects and how we might mitigate or prevent them. Advances in behavioral science are also expanding the effectiveness of our strategies for promoting public health. And research on cognitive styles and other aspects of how people learn holds great promise for promoting the success of educational systems throughout the world.

Unfortunately, the evolution of behavioral science and its contributions in many domains have not received the public recognition they deserve. One consequence is that policymakers still give short shrift in budget allocations to behavioral science research. Now that it has proven its quality and its contributions to the major issues of the day, behavioral science deserves the same respect and support given to any scientific field that has come of age.

– Alan I. Leshner

