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SundayReview

Did Your Brain Make You Do It?

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Gray Matter

By **JOHN MONTEROSSO** and **BARRY SCHWARTZ**

ARE you responsible for your behavior if your brain “made you do it”?

Often we think not. For example, research now suggests that the brain’s frontal lobes, which are crucial for self-control, are not yet mature in adolescents. This finding has helped shape attitudes about whether young people are fully responsible for their actions. In 2005, when the Supreme Court ruled that the death penalty for juveniles was unconstitutional, its decision explicitly took into consideration that “parts of the brain involved in behavior control continue to mature through late adolescence.”

Similar reasoning is often applied to behavior arising from chemical imbalances in the brain. It is possible, when the facts emerge, that the case of James E. Holmes, the suspect in the Colorado shootings, will spark debate about neurotransmitters and culpability.

Whatever the merit of such cases, it’s worth stressing an important point: as a general matter, it is *always* true that our brains “made us do it.” Each of our behaviors is always associated with a brain state. If we view every new scientific finding about brain involvement in human behavior as a sign that the behavior was not under the individual’s control, the very notion of responsibility will be threatened. So it is imperative that we think

clearly about when brain science frees someone from blame — and when it doesn't.

Unfortunately, our research shows that clear thinking on this issue doesn't come naturally to people. Several years ago, with the psychologist Edward B. Royzman, we published a study in the journal *Ethics & Behavior* that demonstrated the power of neuroscientific explanations to free people from blame.

In our experiment, we asked participants to consider various situations involving an individual who behaved in ways that caused harm, including committing acts of violence. We included information about the protagonist that might help make sense of the action in question: in some cases, that information was about a history of psychologically horrific events that the individual had experienced (e.g., suffering abuse as a child), and in some cases it was about biological characteristics or anomalies in the individual's brain (e.g., an imbalance in neurotransmitters). In the different situations, we also varied how strong the connection was between those factors and the behavior (e.g., whether most people who are abused as a child act violently, or only a few).

The pattern of results was striking. A brain characteristic that was even weakly associated with violence led people to exonerate the protagonist more than a psychological factor that was strongly associated with violent acts. Moreover, the participants in our study were much more likely, given a protagonist with a brain characteristic, to view the behavior as "automatic" rather than "motivated," and to view the behavior as unrelated to the protagonist's character. The participants described the protagonists with brain characteristics in ways that suggested that the "true" person was not at the helm of himself. The behavior was *caused*, not intended.

In contrast, while psychologically damaging experiences like childhood abuse often elicited sympathy for the protagonist and sometimes even prompted considerable mitigation of blame, the participants still saw the protagonist's behavior as intentional. The protagonist *himself* was twisted

by his history of trauma; it wasn't just his brain. Most participants felt that in such cases, personal character remained relevant in determining how the protagonist went on to act.

We labeled this pattern of responses “naïve dualism.” This is the belief that acts are brought about either by intentions or by the physical laws that govern our brains and that those two types of causes — psychological and biological — are categorically distinct. People are responsible for actions resulting from one but not the other. (In citing neuroscience, the Supreme Court may have been guilty of naïve dualism: did it really need brain evidence to conclude that adolescents are immature?)

Naïve dualism is misguided. “Was the cause psychological or biological?” is the wrong question when assigning responsibility for an action. All psychological states are also biological ones.

A better question is “how strong was the relation between the cause (whatever it happened to be) and the effect?” If, hypothetically, only 1 percent of people with a brain malfunction (or a history of being abused) commit violence, ordinary considerations about blame would still seem relevant. But if 99 percent of them do, you might start to wonder how responsible they really are.

It is crucial that as a society, we learn how to think more clearly about causes and personal responsibility — not only for extraordinary actions like crime but also for ordinary ones, like maintaining exercise regimens, eating sensibly and saving for retirement. As science advances, there will be more and more “causal” alternatives to intentional explanations, and we will be faced with more decisions about when to hold people responsible for their behavior. It's important that we don't succumb to the allure of neuroscientific explanations and let everyone off the hook.

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