

Toward a New Assumption in Law and Ethics

by Michael J. Hanson



IN 1848 NEW ENGLAND, Phineas Gage was a foreman on a railroad construction project. While he was working with explosives, a 3 1/2 foot long by 1 1/4 inch diameter iron bar shot through his cheek, upward through the front of his brain, and out the top of his head. To the amazement of his treating physician, Dr. John Harlow, Gage completely recovered except for a loss of vision in his left eye. Gage retained his memory of the past, his skills, and his intellectual abilities.

Before the accident, Gage was intelligent, hard working, pleasant, and was liked by both his superiors and the men he supervised. He was shrewd and capable in his business dealings. People who knew him would describe him as a nice guy. After the accident, however, despite being intellectually unchanged, Gage was no longer the same person. He became foul mouthed and prone to violent outbursts. He was undependable and irresponsible on the job and was reluctantly fired. After that he was unable to hold any job for long and seemed totally unable to make decisions that would be in his own best interest. He became what most people would describe as a bad person.

This is one of five medical case studies that lay the groundwork for our current understanding of the relationship between the human prefrontal cortex and a person's character. It is offered by neurobiologist Antonio R. Damasio in his 1994 book *Descartes' Error*. Four case studies from the twentieth century are documented by Damasio in *The Feeling of What Happens* (1999), three of which demonstrate the same type of character change as was found in Gage. All involved damage to the frontal lobe of the brain. One involved damage caused by a tumor and its removal, another involved damage caused by rupture of a blood vessel,

the third resulted from a fall that caused fractured bone to penetrate the frontal lobe, and the fourth involved a patient who sustained frontal lobe injury at birth. In all of these cases, the patients exhibited poor social skills, inappropriate behavior, violent outbursts and vulgarity, lack of drive, lack of ability to complete any task requiring organization, and poor judgment about life decisions. Except for the case involving injury at birth, all of the patients changed character from being basically good to becoming disreputable.

In his latter book Damasio experimentally demonstrates that a person with substantially depressed emotional response can't perform as advantageously in human society as a person with a normal emotional affect. This finding corroborates the above case studies that document generally flat emotional response in most situations, with occasionally triggered violent outbursts. Damasio also reports complex human behaviors done without consciousness. He calls these *epileptic absence seizures*. During such incidents people who are awake suddenly lapse into a state where they can walk, talk, and respond appropriately to things in their environment, yet they have no awareness of their actions and no memory of them when they return to a conscious state.

Sleepwalking is a phenomenon of more common knowledge that involves complex motor activity without conscious awareness. Less well known is a related condition called *parasomnia*. In this condition, extreme and even violent activity occurs during sleep. While dreaming, the normal muscle paralysis disappears and the dreaming person acts out events from the dream world. Bed partners have suffered various bruises and lacerations from punches, kicks, and strangling holds. One patient drove a car over five

miles to his parents' house while in such a state. In another extreme case, documented in 1994 by clinical neurologist Roger Broughton and others in *Homocidal Somnambulism*, a twenty-three-year-old man drove almost fifteen miles to his in-laws' house, where he fatally stabbed his mother-in-law. With the man's extensive history of somnambulism, he was acquitted of murder charges by a Canadian jury.

When we make a conscious decision, we feel that we know *why* we are making it. But evidence shows we *don't* really know and that there are unconscious processes at work in our decision making. Quite a number of experiments demonstrate how perception can occur outside of conscious knowledge.

Benjamin Libet has conducted a series of experiments showing that a spike in brain activity, called the readiness potential, occurs 350 milliseconds before the subject says that he or she made a conscious decision to do some action. This suggests that a decision was actually made at some unconscious level and that the conscious decision was more effect than cause.

Split-brain experiments involve patients who have had their corpus callosum (a thick, broad band of the brain comprised of millions of nerve fibers) severed. Such drastic surgery cuts off communication between the left and right hemispheres of the human brain. Neuroscientists Michael Gazzaniga and Roger Sperry have shown how the two brain hemispheres can operate independently, choosing to do different actions for different reasons. In their classic experiment, an image of a snowfall is shown to a patient's right hemisphere and an image of a chicken to the left hemisphere. Then the patient has to use a different hand to select a related picture to match the image seen, choosing either a claw or a shovel. The right hemisphere hand chooses the shovel and the left hemisphere hand chooses the claw. When the patient is asked why he chose the two different pictures, he says, "Oh, that's simple. The chicken claw goes with the chicken, and you need a shovel to clean out the chicken shed." These experiments and many others show how people's conscious rationalization engine will confabulate explanations for actions whose actual motivation and cause are unknown. Cognitive psychologist Steven Pinker has nicely summed up the problem presented by this experimental data in his 2002 book *The Blank State*:

The spooky part is that we have no reason to think that the boloney-generator in the patient's left hemisphere is behaving any differently from ours as we make sense of the inclinations emanating from the rest of our brains. The conscious mind—the self or soul—is a spin doctor, not the commander in chief.

Aggression in animals and humans can be manipulated through serotonin and nitrous oxide levels. Neurobiologists—such as Larry Siever and William Frucht in *The New View of Self* (1997), Debra Niehoff in *The Biology of Violence* (1999), and Dean Hamer and Peter Copeland in *Living with Our Genes* (1998)—document how environment can cause certain genes to be turned on and off, and how this can result in physical changes to brain structure. Adults who were physically and sexually abused for extensive periods of time as children and adolescents show abnormal brain structure and emotional affect. Violent felons show reduced frontal cortex activity compared to control groups of nonfelons. Twin studies show a surprisingly strong degree of heritability of behavioral traits. Recent brain studies, as reported by Jay Giedd in the PBS *Frontline* interview "Inside the Teenage Brain," link poor judgment performance of adolescents to incomplete frontal cortex and cerebellum development.

Yet, contrary to all this evidence, the idea that people have free will underpins virtually every human society's cultural and legal social structure. The basic presumption is that humans choose to do good or evil. Personal responsibility arises because of this ability for self-determination. Legal liability, particularly under criminal law, is considered to be just because it flows from the responsibility that everyone has for the consequences of chosen actions. As long as a person intends to do a particular act, he or she is liable for any reasonably foreseeable damage or injury to others. We implicitly assume that people are capable of knowing the difference between right and wrong and can control their own behavior. The rare exceptions that allow one to escape culpability usually involve that person's inability to distinguish right from wrong. For example, we assume that young children have had insufficient time to acquire the social training and physical development to make this judgment. Similarly, individuals are considered legally insane under criminal law if they suffer from a mental disease or defect that prevents them from understanding that their actions are wrong. I will refer to this view of free will as the "old assumption."

The question of free will has long been grist for philosophers—even in the pages of the *Humanist*. While an underlying premise of both religion and law has been that there is a substantial equality among people in terms of their ability to choose good versus bad behavior, the scientific evidence strongly suggests that this premise is wrong. And today the debate is revitalized by a plethora of new scientific research that, in sum, makes it appropriate to question the "old assumption" and perhaps even discard it. There is sufficient scientific evidence to justify a change in social policy and law.

From the legal point of view, however, we don't want law to change so quickly that we embrace a wrong concept that briefly achieves scientific acceptance. We count on science to reasonably correct itself over time when it goes astray. On the other hand, we don't want law to change so slowly that we do injustice for years because of systemic inertia. Unfortunately, the rapid pace of scientific advance far outstrips the ability of the slow wheels of justice to change gears as quickly as needed.

As the evidence accumulates, we are getting a clearer picture of how human behaviors are affected, and perhaps determined, by the confluence of genetic inheritance, environmental influences, and the luck of the draw. The weight of the scientific literature crushes the ideal that all people are born substantially equal, that the good exercise their will to be virtuous and the bad exercise their will to do evil. But neither law nor religion allows for any handicapping before the bar of justice.

What conclusion is justified by this science? At best we have a limited range of behavioral choice. The basically good are constrained to be so and the basically bad are

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likewise. We may be able to consciously reflect on decisions arising from our unconscious processes. We may be able to modify or inhibit those decisions to a degree. We are, however, always limited by the constraints of our genes, our chemical makeup, and the tran-

sient status of our neurology in perpetual interaction with an ever-changing environment. We subjectively sense greater control over our own thoughts and motivations than the objective evidence supports. We have to deal with the fact that people aren't created equal in their propensity for good and evil, and the real question should be how do we ethically deal with this inequality. Until we have more evidence that justifies modifying this description of constrained free choice, this should become the "new assumption."

By changing our view about the nature of personal responsibility, we head down a different ethical path. We come to recognize that an individual may or may not be personally responsible for evil actions because he or she may not have had free choice. Nonetheless, that individual is legally liable for his or her wrong actions because he or she did wrong.

Science makes the issue of personal responsibility an unresolved question but that doesn't necessitate chang-

ing society's assessment of legal liability. Even if we adopt the provisional belief in constrained human free will, we still have a practical and ethical obligation to protect society from wrongdoers. In the criminal law application, we can satisfy this obligation by maintaining the definition and proof of crime substantially the same as it exists today. What changes is what we do with criminal offenders after conviction. Ethics justifies a different treatment of criminal offenders depending on whether our legal and social policy is based on the old or new assumption.

Punishment of violent criminal offenders under our present law has a strong underlying philosophy of retribution and vengeance. This is based on the idea that people who willingly choose to do evil forfeit any right to human dignity and deserve any hellish conditions that are present in our penal system. The death penalty, solitary confinement in supermax prisons, and exposure to AIDS and tuberculosis are all tolerated by most in our society because of the belief that the convicted violent offender had a choice and chose badly.

If we instead believe that criminal offenders had more limited ability to choose their behavior, perhaps that they were doomed by their physical inheritance, we can allow ourselves to feel more compassion toward them. As the above case histories have shown, we could ourselves become such criminals if we were to suffer certain injuries to our prefrontal cortex. By accepting the possibility that evil isn't freely chosen, we can focus our justification for punishing a wrongdoer on the threat that person poses to the public. Society can be protected by incarcerating dangerous individuals and through the deterrent effect of threatened punishment. Accepting the "new assumption" provides a philosophical basis for respecting the human dignity of even violent criminals and provides a sound rationale for working to rehabilitate convicted offenders where such rehabilitation is physically and medically possible. A side benefit of a more humane punishment system is that the innocent who are wrongfully imprisoned need not suffer quite as much.

It may seem that we have merely used brain science to arrive at a traditional, bleeding-heart liberal position of being soft on crime and punishment. The reality, however, is that our "new assumption" can lead to stricter and longer prison sentences depending on the circumstances. Under the old view of individuals' unfettered choice to do good or evil, we implicitly allow for bad people to change their behavior and choose to do good. What the scientific evidence shows, however, is that there are probably many violent criminals who can never choose to do good because they are limited by their biology and life experiences. While

the medical evaluation of such individuals is problematic, our social policy of protecting society from these dangerous people demands that they remain separated from mainstream society.

The issue of insanity under the U.S. criminal justice system provides an excellent example of how acknowledging constrained human choice can lead to a new direction for practical public policy. Typically, state law provides that a person isn't guilty by reason of insanity if, because of mental disease or defect, she or he didn't understand the criminality of her or his conduct and that the act was wrong. A great deal of time and energy is spent litigating this issue, although the insanity claim succeeds infrequently. If we accept that the control people may exercise over their own actions is questionable, we will see fewer differences between an insane person and someone who is capable of heinous crimes but who otherwise qualifies as sane. While a person traditionally thought of as insane may be quantitatively different than a person with more subtle impairment, we can't at this juncture say the less impaired individual is capable of free choice and the insane person isn't.

I propose that consciousness provides a bright line standard that would be fairer and less consumptive of resources in our criminal justice system. The issue can be reduced to whether or not the act was done. While there should continue to be a requirement of intent to commit the act to distinguish situations of accident and negligence, issues of motivation, irresistible impulse, and mental disease or defect become post-conviction issues. We can hold even an insane person legally liable for their actions. Until we can medically distinguish between a person who has substantially unfettered free will from one who doesn't, there is no reasonable basis for treating these people differently at the pre-conviction stage. From the viewpoint of protecting society, the perpetrator of a violent crime is dangerous whether insane or not. From the viewpoint of current medical knowledge, we can't really know how much control any individual has over behavior. The danger posed by a violent criminal, insane or not, and that person's relevant medical condition, determines the incarceration and treatment that should be required by a court upon conviction.

A different situation presents itself when a person commits a wrongful act without being conscious. As illustrated above in the Canadian parasomnia case, very complex behaviors can occur without consciousness. If we continue to require an intent to commit a physical act for criminal liability, consciousness is required to give any meaning at all to the idea of *intent*. From this perspective, the Canadian jury's acquittal of the defendant is proper. Sleep researcher Carlos Schenck correctly points out in his 1995 *Sleep* ar-

ticle, coauthored with M. W. Mahowald, the residual social policy issue that remains. We still need to determine whether there is a continuing danger to society of violent somnambulistic behaviors. Only after this risk is determined by medical-legal standards to be sufficiently low should a person acquitted of a violent, sleep-related action be released into general society.

The idea that we don't have free will, or that our will is extremely limited, is a most unpleasant concept. It seems to trivialize human beings as if we were reduced to simple automatons. But animal studies demonstrate how excitation of certain brain areas can lead to quite complex patterns of behavior. It isn't like one stimulates an area and gets a single physiological reaction but, rather, when one stimulates an area one gets an entire subroutine of related behaviors extending over a substantial period of time. Human examples documented in cases of epileptic absence seizures and parasomnia violence episodes don't contradict this paradigm of triggered patterned behavior.

The position that humans are pure automatons is too extreme and not justified by our present knowledge. However, the scientific facts do push us to the conclusion that the traditional concept of human beings' unfettered exercise of free will isn't reality. The view best justified by current evidence is that human behavioral choice is constrained by each individual's genes, life experiences, and environment. Note that I say *constrained*, not determined. There still seems, at least subjectively, to be a window within which to exercise one's will. If we deny the influence of our biology on our behavior, however, we will spend too much time doing the wrong things for the wrong reasons.

The multi-disciplinary approach to the study of consciousness is yielding substantial data bearing on the issue of free will. It is time to turn the results of that study to benefit in dealing with practical issues of ethics, including the treatment of people under our criminal justice system. Ethics is about doing the right thing for the right reasons. Justice is never served by ignoring facts that science reveals about human nature just because we find them ideologically unpleasant. Let the chips fall where they may—and deal with them. ☒

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