

Answering Materialism: Does the Brain's Structure Allow for Free Will?

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As we promote the defense of human life, we must understand that life is not merely material, that an intellectual soul distinguishes humans from the rest of the universe. If we misunderstand our nature, we risk forgetting the basis of our human dignity, and tarnishing respect for human life.

Aquinas teaches that we consist of bodies endowed by souls with the powers of intellect and free will. As neuroscientists identify areas of the brain which process emotion, logic, music appreciation, language, and more, some wonder if the human will “seems free to you, but it’s the result of things you’re not aware of.”¹

We must vigorously resist such a notion, for if we accept it, we encourage a degradation of humanity from an image of God to a soulless “pack of neurons”.² Science cannot prove or disprove the existence of an immaterial soul, or of the free will which is a power of that soul, since the subject of science is the material world. Yet remarkably, what is known in science today is consistent with the human potential for free will; what we know about the physical world allows a potential opening for the soul’s free will to direct the brain.

Consider the following: viewing the number and position of bowling pins, an expert bowler can assess the magnitude and direction of force to apply in order to knock them down. Given perfect measurement of the physical variables involved, and perfect control over limbs, eyes, and emotions, the bowler would be guaranteed success. Some argue that this is how the human brain works. With complete information about initial physical conditions, we would be able to predict its next physical step, the way our all knowing bowler with perfect physical control could predict the falling of the pins.

In classical physics, the physical world follows precise mathematical rules which are deterministic, i.e., the current state of a physical system strictly determines its future state. French mathematician Pierre Simon Laplace explained determinism this way: “[For] an intelligence which could know all the forces by which nature is animated, and the states at some instant of all of the objects that compose it, nothing would be uncertain; and the future, as well as the past, would be present to its eyes.”³

If this were true, as applied to the human brain, it would lend credibility to philosopher Friedrich Nietzsche’s claim that: “[T]he largest part of conscious thinking has to be considered an instinctual activity... Behind all logic, too, and its apparent tyranny of movement, there are physiological demands for the preservation of a particular kind of life... Admitting untruth as a

¹ Stephen Barr, *Modern Physics and Ancient Faith*, University of Notre Dame, 2003, p.185

² Barr, p.195

³ Barr, p.171

condition of life: that means to resist familiar values in a dangerous way; and a philosophy that dares this has already placed itself beyond good and evil.”⁴

If our choices were illusions--outcomes of physical processes we do not control--then we would lack free will, and thus the ability to make moral decisions, placing us “beyond good and evil”, as Nietzsche claims.

Yet living in the 1800’s, Laplace and Nietzsche could not have anticipated the revolutionary discovery of quantum mechanics in the twentieth century, which tells us that at subatomic levels, even if all aspects of a physical system are known, its later behavior cannot be predicted with certainty, as the behavior of pins in our bowling scenario could. Only the relative probabilities of future outcomes can be predicted at the subatomic level.

This is easily understood when applied to radioactive particles. A uranium 235 nucleus, for example, will eventually decay into a lighter nucleus, giving off radiation. We cannot predict exactly when a particular nucleus will decay; we can only predict its half life. Physicist Stephen Barr explains that “If a nucleus has a half life of one hour, say, that means there is a 50 percent chance of its decaying some time within one hour. Thus, if one started with a large number of such nuclei, after an hour, only about half of them would remain, the rest having decayed. (About half, not necessarily exactly half, since it is a question of probabilities.)”⁵

We do not typically notice quantum effects on a classical (larger than atomic) scale, because the probability that a subatomic particle might do one of two things averages out given a large number of particles, as in the case of radioactive nuclei. Imagine a national poll where respondents are asked whether they prefer Coke or Pepsi, and the responses are evenly split. Perhaps you and your three closest friends all prefer Pepsi; that 50/50 split will not necessarily apply to a small group. The respondents in the national poll represent the classical scale of matter; your small circle of friends are like four nuclei in the subatomic quantum scale.

If the brain is governed by the sort of probabilistic chance we ascribe to inanimate objects, we retain the problem of free will: subatomic activity is still random, yet the large aggregation of such particles acting in the system of the brain ought to behave in a predictable way, as in the case of decaying radioactive nuclei. However, the uncertainty woven into the subatomic world actually allows for something other than the physical system to influence the brain’s physical outcomes--an influence such as the soul.

Barr describes it this way: “If I flip a ‘fair’ coin, there is an equal chance that heads and tails will come up. That statement of probabilities is based on the fact that there is nothing about the coin itself, such as its shape or weighting, that would bias it toward one of the outcomes. But if instead of flipping the coin, I deliberately place it on the table with heads up, that estimate of probabilities no longer applies, because something--my will--has influenced the situation.”⁶

⁴ Friedrich Nietzsche, *Beyond Good and Evil*, Oxford University Press, 2008, p.7

⁵ Barr, p.177

⁶ Barr, p.180

A radioactive uranium nucleus is purely physical; its decay pattern is unchosen and thus "beyond good and evil," as Nietzsche describes. Yet the human mind is not so, and what is known in science today indicates a way, built into its very physical structure, in which a nonphysical entity, e.g., the intellectual soul, can cause its physical outcome, by metaphorically reaching in and placing many coins heads up on the table. With the guidance of the intellectual soul, the human mind can choose to go beyond the decay that is evil, and orient itself toward the good.

We must resist the current school of thought which reduces human free will to physical processes analogous to the decay of uranium atoms. In this climate, the debilitated elderly, the sick, the mentally challenged, and the unborn risk being afforded no greater dignity than, and considered just as disposable as, a bit of uranium--viewed as a commodity to be used, spent, and discarded. We must insist upon a correct understanding of our nature: a body whose form is the intellectual soul, which separates us from the merely material.