

# **The Coming Conflict between Science & Spirit <sup>1</sup>**

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Rushing advances in neuroscience, computer power, and artificial intelligence are approaching the ability to model human behavior with remarkable precision. Extend these gains a bit and it's easy to envision a scientific revolution that automates human intelligence. Even now, scientists claim they will soon explain away consciousness and free will.

Meanwhile, the Information Age is driving an explosion of heightened awareness, global crises demanding broader perspectives, and growth in authentic forms of spirituality. All this suggests a rise of "human spirit" that may swell into a "spiritual revolution" paralleling the scientific revolution above.

It is tempting to think these two great trends could converge in time. But for the foreseeable future, they seem to be propelling us into the maws of a great conflict now shaping up between Science and Spirit. Are we humans simply a biological system for processing information? Or is there something about life and humanity that transcends sheer knowledge?

## **The Scientific Revolution in Consciousness**

The traditional model of human behavior formulated long ago by Rene Descartes has served as a foil against which scientists have argued for centuries. Descartes proposed a theory commonly called "dualism," which states that behavior consists of two different types. "Simple" behaviors are deterministic in that an environmental stimulus automatically produces a response (touching a hot stove), while "complex" behaviors are unpredictable because they involve

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higher-order issues that Descartes attributed to “the soul.” Well, you can imagine how the second category rankles scientists, and many neuroscientists are hard at work demonstrating that complex behavior can be effectively explained.

A prominent perspective draws on probability theory, Bayesian statistics, economics, game theory, behavioral ecology, and the Nash Equilibrium that won John Nash a Nobel Prize. This view claims that any organism can be accurately modeled as a decision-maker driven by Darwinian logic to find optimal solutions to complex problems involving uncertainty.

A wonderful example is offered by studies of how ducks respond to uncertainty in their feeding. D. G. C. Harper at Cambridge University observed the results of two people positioned 20 meters apart at the edge of the lake throwing breadballs to feed ducks. One throws breadballs weighing 2 grams every 5 seconds while the other throws the same breadballs every 10 seconds. Using game theory and the Nash Equilibrium, the optimal location is calculated to define how each duck can maximize its catch. It turns out that this optimal solution occurs when two-thirds of the ducks place themselves near the researcher throwing breadballs every 5 seconds and one-third near the one throwing every 10 seconds.

Results showed an uncanny approximation to this optimal solution. Within 60 seconds, two-thirds of the ducks moved to the spot where food was dropped every 5 seconds and one-third went to where they were fed every 10 seconds. This outcome was obtained automatically as each duck maintained a one third/two thirds ratio of its time in each area, illustrating that the overall solution derives from an aggregation of individual ducks pursuing the logic of this payoff matrix. Furthermore, when the relative size of the breadballs and their frequency was changed, the ducks immediately repositioned themselves in accordance with the theory.

Other experiments involving monkeys, birds, and mice bear out the same conclusions. In the words of neuroscientist Paul Glimcher: “Animals come remarkably closer to achieving

optimal solutions.”<sup>1</sup> This is a great advance in our understanding of behavior and it has an intuitive appeal. Animals may not process mathematical calculations, but they instinctively judge the likelihood of obtaining various sources of food and they adjust their behavior to maximize the chance of success. The same could possibly be shown for sex and other common behaviors. Glincher concludes, “Mind ... simply does not figure in the equation.”

### **Life Beyond Rationality**

My reservation about this line of thought is that it cannot be extended to include *all* behavior. To most people, the above claim amounts to a *reductio ad absurdum*. It is one thing to observe animals responding to offers of food, and quite another when aware human beings struggle with issues involving love, family, community, fear, patriotism, religion, joy, sadness, art, humor, hatred, meaning, purpose, and all the other woes that flesh is heir to. Indeed, the theory itself points to this same dichotomy. Scientists view animals as decision-makers but they focus on outward behavior while ignoring the myriad phenomena taking place inside the decision-maker’s mind – the likelihood that some sort of “post-rational,” “transcendent,” “integrated,” or “spiritual” domain may exert an even greater influence.<sup>2</sup>

The life of John Nash himself, who contributed the central concept of Game Theory Equilibrium, attests to the central role of consciousness and free will. As his story is told in the movie “A Beautiful Mind,” Nash was incapacitated for years by paranoid delusions. Through sheer will and against psychiatric advice, he finally mustered up the conviction to learn that he could ignore these delusional impulses, and thereby regained control of his behavior.

Most thinking adults are preoccupied with such subjective matters that defy logic because they transcend sheer information and knowledge. The crucial actions of life – succeeding in a career, keeping a marriage alive, raising children, etc. – require drawing on the inner strength,

wisdom, and willpower of a person, self, or soul. After all, somebody is acting as a decision-maker. Try telling executives, lovers, parents, the devout, and other normal people that their behavior is purely an automatic response to environmental stimuli and you are likely to get a blank stare. To most people there is no need for proof – the domain of consciousness, will, and human spirit is self-evident.

### **A Great Social Experiment is Underway**

This question about the nature of consciousness defines one of the central debates of our time. Scientists increasingly have been studying consciousness because the exploding power of computers and artificial intelligence point directly to this mysterious phenomenon we take for granted.<sup>3</sup> The consensus today is that computer power should match that of the human brain about 2020, setting the stage for a grand test of a paramount scientific question:” Is there is a substantial difference between human intelligence and machine intelligence? IBM’s Deep Blue computer is now tied with chess master Gary Kasparov, and Kasparov admits that it’s only a question of time until he is surpassed.

The issue is more than brute computer power, however. The real issue revolves around the possibility that humans – and other life forms – possess some form of awareness, willpower, or other such abilities that transcend information. It could be thought of as a “spiritual Turing test” – can we demonstrate the existence of human spirit?

Not surprisingly, scientists are largely united in thinking there is no such “Ghost in the Machine.” The guiding hypothesis is that consciousness is an “emergent” phenomenon, arising automatically out of the functioning of the brain and body, and thus behavior is determined by physical causes. Consider the work of a few well-know authorities: <sup>4</sup>

- **Benjamin Libet, a University of California physiologist**, has provoked great attention by finding that there is a **one-third second delay** between the time an act is initiated in the brain and the time the subject reports a decision to initiate the act, suggesting that **decisions are a mere afterthought**.
- Other **studies show that stimulating sections of the brain** with magnets strongly influences actions, confirming the strong role of brain circuitry and impulses.
- Neuroscientists have identified **regions of the brain that are active during intense meditation**, suggesting that religious experience is a neural phenomenon.
- The above types of work have been **replicated and are widely interpreted to dispel the role of free will**. For instance, the New York Academy of Sciences recently held a conference titled “From Soul to Brain.”
- **Nobel Laureate Francis Crick, Co-discoverer of the DNA Helix** , claims, “You, your joys, and your sorrows, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules.”
- **Microsoft Chairman Bill Gates goes even further:** “There’s nothing unique in human intelligence that can’t be replicated by machines.”
- **Pulitzer Prize-Winning Scientist Edward Wilson** contends, “Scientific knowledge holds that religious experience is entirely neurobiological.”

The other possibility is also disruptive. As human thought becomes increasingly automated, we could just as easily bump against the limits of technology. After all, previous forms of automation have shown similar patterns. When factories were automated it was feared that the loss of jobs would produce rampant unemployment, but the reverse occurred and better jobs became plentiful. What we have learned is that, as automation eliminates routine tasks that

can be relegated to machines, this frees people to focus on more complex, creative tasks that can only be handled by humans. I suspect the same will prove true for the automation of human thought.

Computers may master routine thought, but they are not likely to master higher-level thought, forcing us to recognize that there truly is a transcendent dimension underlying life. The most powerful, the most intelligent information system may never simulate this uncharted domain of values, choice, intuition, creativity, emotion, willpower, and other subjective qualities associated distinctively with human spirit. I can vividly imagine us complaining as we correct dumb mistakes of robots. We are likely to treat them as backward children.

If this limit exists, science may mature to recognize the unique power of human spirit and its implications. David Chalmers, a philosopher at the University of Arizona, thinks “We are likely to discover that consciousness is a fundamental property of the universe, like space, time, and gravity.”<sup>5</sup> Consider the evidence on the spiritual side of this cosmic debate:<sup>6</sup>

- **Hundreds of medical studies demonstrate the powerful influence of beliefs on health.**

The well-known placebo effect is so strong that medical trials all control for it. In fact, a mere sugar pill can be more effective than the best medications in relieving depression.

- **People who practice religion** have been shown to be healthier. Studies show that those with religious beliefs, who attend church regularly, and have friends are far less likely to suffer heart disease and depression and they live longer.

- **Rupert Sheldrake**, a physical scientist, has conducted experiments that suggest “morphogenetic” energy fields influence learning, they allow people to sense being stared at, and alert dogs when their masters are coming home.

- **Maharishi University faculty have published dozens of studies in scientific journals** demonstrating a link between meditation and social order. The number of people involved seems to be inversely correlated with crime, violence, and other social statistics.
- **Untold numbers of people who have been clinically dead** and returned to life all relate the same spiritual experiences of being welcomed by their deceased loved ones and religious figures like Christ. Afterward, they have no fear of death.
- **A medical study found that having people pray** for patients had a positive impact statistically – even though the patients were unaware they were being prayed for.
- **All societies throughout history have been organized around some type of belief system.** Even in high-tech America, surveys consistently show that around 90% of Americans believe in a God with whom they talk and pray.

### **Stay Tuned for the Answer**

Whether the scientific or spiritual explanations are correct is impossible to say at this point. The scientific view is likely in time to demonstrate that huge hunks of human behavior can be modeled as rational, deterministic systems, possibly leading to another historic revolution. Much as Galileo shattered conviction in an Earth-centered universe and Darwin dispelled the distinction between humans and animals, the neuroscience revolution is even now challenging deeply held beliefs about will, awareness, and other qualities attributed to spirit and soul. Without the foundation of free will that underlies society, how could we punish crime? Reward the successful? Aspire to betterment?

But press scientists to explain how consciousness arises from the brain and you will be disappointed. I've made a point of following the literature in this field, and I am impressed with how vacuous the explanations are. The most plausible theories hold that consciousness is the

brain's electromagnetic field interacting with its own circuitry, or it's an aggregation of the sea of memes populating civilization.<sup>7</sup>

In the end, it may be easier to accept the possibility that some form of spiritual energy permeates the universe than to accept the convoluted explanations scientists propose. How, exactly, can the brain produce consciousness? Where is the evidence that subjective experiences can be replicated by machines? In short, science is doing a wonderful job of explaining the mechanics of behavior, but it shows no understanding of that inner spirit that drives behavior. Daniel Batson, a University of Kansas psychologist, put it best: "To say that the brain produces religion is like saying a piano produces music."<sup>8</sup>

This academic dilemma is rather similar to current theories that attempt to explain why our universe is so perfectly hospitable to life. Rather than accept the mere possibility of some divine power or intelligence, science now posits a "multiverse" in which our universe happens to be suited to life, while billions of others remain sterile. Physicist Charles Townes highlights how bizarre this theory is: "The speculation that there exist billions of invisible, parallel universes would be laughed out of town if it came from a religious text."<sup>9</sup>

Either way, we are in for a fascinating learning experience during the next 20 years or so as computer power and our ability to model human intelligence matures. Will life be dominated by artificial intelligence systems or the divine spark of life? Perhaps we will witness a synthesis of these two poles. Stay tuned.

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