



What I Wish My Pastor Knew About ... **Biopsychology and the Soul**



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William Struthers is a Professor of Psychology at Wheaton College in Wheaton, Illinois. He is currently investigating the effects of hormones on animal learning, cognition, and neuroanatomy. He is also interested in the Anglican tradition and in science/faith dialogue issues.

Herman Ebbinghaus wrote that, "*Psychology has a long past, yet its real history is short.*" As a scientific discipline, Psychology has only been around for around 130 years, but the desire to understand and explain why people do what they do has been a part of the human experience from the beginning. Consider the answers that Adam and Eve gave to God in the Garden of Eden. "Why did I eat the apple? Because she gave it to me." "Why did I eat the apple? Because the serpent tempted me." Denial, rationalization, justification, redirecting blame - it is all found throughout Scripture. The Biblical authors pull no punches when it comes to detailing our less than flattering dispositions. So what is psychology, then? Is it a flawed human system that leads people away from Biblical truth? Is it really the 'psycho-babble' that helps people explain away their sin and give them permission to be narcissists? I am sympathetic to many pastors who might believe that psychology is a nothing more than a guild of 'think happy thoughts' therapists, but I would challenge them that it is something more than counselor training. Psychology is a scientific discipline that has as its object – an explanation of the human experience.

Psychology is sometimes understood as an attempt to explain human behavior, emotions, or problems ("psychologizing"). Sometimes psychology is understood as a way to emphasize the human individual in an area of study ("a psychological perspective"). Psychology, as most academics understand it, is an academic and applied science that is an important part of our culture and intellectual world. What makes psychology different from common sense or a particular perspective is that it employs the scientific method. Psychology acts as a bridge between the 'hard' sciences such as biology and medicine and the 'soft' sciences of human life such as Sociology, Anthropology, and Political Science. Because of this shared scientific approach and the object of study (human experience), the applications of psychological theories can have an impact in nearly every area of human life. There are many sub-specialties within psychology, just as there are in the ministry of the Church.

Biopsychologists, like myself, study human beings (and other species) from a perspective that is distinctively biological. We use as a starting point the reality that human beings have genes, cells, tissues, and organ systems which together give us a fully integrated human being - an organism. We study the nervous system, particularly the brain; the organ that is integral in our thoughts, emotions, personality and awareness. All of our conscious and unconscious experiences that are anchored in the brain provide a source of wonder for the Christian biopsychologist. My study of it is part of my worship of the Creator. In all of Creation, there are few things that I have seen that are more complex, more elegant, more beautiful, or more awe-inspiring than the human brain.

Bio-Psychology?

So how does someone end up becoming a biopsychologist? Do five year old children wake up and say, 'When I get old I want to study gene expression and the Cingulate cortex of rats injected with experimental drugs'? Perhaps some do, but I most certainly did not. In the fall of 1988, I set off to college convinced that I was going to be a psychiatrist. My friends in high school would always bring their problems to me and I seemed to be able to do a pretty good job helping them sort things out. But being a psychiatrist meant that I would need to study the dreaded pre-med courses including Biology . In high school I did rather poorly in my biology classes so it came as no surprise that I also did rather poorly in college. It took approximately three weeks of freshmen biology for me to be 'weeded out' and to realize that biology was not a strength. Studying plant and insects was simply not interesting to me and my exam scores reflected my indifference. I quickly changed my notion of being a psychiatrist to becoming a professional psychotherapist. While I would have to give up a future of prescribing medication to help those who had mental illness or psychological problems, but I would still be able to look forward to therapy sessions with troubled individuals.

Shortly into my Psychology college courses, however, I realized that I had selected yet another path that would not play to my unique gifts, talents, abilities, or passions. The coursework was easier, but I soon realized that I was not emotionally cut out to be a therapist. As I continued to study the many and various ways that human beings could be broken psychologically (and the many ways that they break each other) I found that I was over-whelmed by it all. There was simply too much grief and pain in the world. There was no way that I would be able to speak any words of comfort to someone who had lost a child, was suffering from depression, or was so cognitively scattered that they truly believed they were Napoleon. In the existential crisis that followed, I would spend my evenings in my dorm room entertaining thoughts of becoming a pastor, a rock star, a standup comedian, a hobo, or an actor. Each one of these potential professions (with the exception of hobo) seemed to have a certain appeal to them, but they all were missing something that I could not put my finger on. Each lacked a spark - something that I could get truly excited about and envision myself spending the rest of my life doing.

During January of my sophomore year, two things happened to me. I started dating the woman who would become my wife and I took a course titled Behavioral Neuroscience. I had fallen in love with my soul mate, and (if there is an intellectual equivalent of falling in love with an area of study) I had found my academic passion: the brain. Long forgotten were the supersquamous epithelial cells and exoskeletons of locusts in my Biology class; they were not interesting to me. The brain, however, was captivating. Its simplicity and complexity, its fragility and plasticity were utterly fascinating. I decided that I would spend my academic career studying the brain and investigating the way the mind worked. It was as if scales had dropped from my eyes and I was able to see for the first time. I loved everything about this area from the way that genes turned on and directed neural development to the movement of ions across the cell membranes. I would spend hours marveling at how hormones and brain

chemicals (also known as neurotransmitters) were involved in depression and the effects of brain trauma which could change a person's personality. My understanding of what makes people tick, why they do what they do, the myriad of ways that neural functioning can be impaired, and what it means to be a human being was transformed from a hodgepodge of theories and intuitions to a systematic, real world, reach-out-and-touch-it framework. Damage to the brain changes the way people think. Low levels of your transmitters can alter mood. These explanations did not have to rely on the use of a soul or immaterial mind; they were straightforward, intuitive, consistent and easy to measure. The brain made sense to me as the organ of thought and all of my curiosity seemed to be directed on this organ. The more I studied it, the more fascinating it became.

After finishing my bachelor's degree, I began my graduate training at the University of Illinois at Chicago where I studied under my doctoral adviser, Dr. David Wirtshafter. Dr. Wirtshafter was a well known researcher who investigated the neurotransmitter serotonin (the primary neurotransmitter affected by the popular antidepressant Prozac), and I learned what it meant to think as a researcher. He taught me how to systematically ask scientific questions and how to design strategic studies. The bulk of my time over the next several years was spent studying neuroanatomy, pharmacology, research methodology, and teaching courses at the university. My days were filled with injecting rats, performing brain surgery on rats, slicing brain tissue to put on slides to be looked at under a microscope, performing complex histological stains on these slides, analyzing images of the cells to collect data, lecturing in classes and reading journal articles. It was an exhilarating and exhausting season of life that could begin as early as 6am in the morning and end well after midnight. Sitting at the microscope I would take pictures of fluorescing cells that verified neural circuits and analyze slides of neural tissue for protein markers of neural hyperactivity. Even as I write, it is easy to flashback to the thrill that would generate in my spine and rise within me when I collected data.

The rush of running a statistical test and finding out that there were significant differences between my samples can be just as exciting as watching my favorite football team (the Pittsburgh Steelers) come from behind and win the Super Bowl. All of the hours spent in dark rooms monitoring rat behavior, delicately slicing tissue, staining, and analyzing micro-scope images brought a feeling of fulfillment.

The busy life of the graduate student, however, was made even more interesting by my marriage and involvement in church ministry. Somewhere between being a husband, junior high youth leader, and doctoral researcher there were a series of cognitive boundaries that I drew. Each of my roles was cordoned off from one another. The research was left at the lab, home was left at home, and church was left at church. This could only last for so long, and towards the end of my doctoral training I reached a miniature crisis. How could I make what I was learning in the lab fit with my faith? How could I be intellectually honest and study human beings as if they were nothing but the product of genes and tissue functioning? I threw myself at theology texts, the writings of Augustine and Aquinas, and dove back into the passages of Scripture. I was trying to make sense of the broken mosaic that I had allowed my mind to become. It was during this period of searching how to integrate my faith and my studies when I was connected with a faculty member at Wheaton College. Through God's divine hand, I began teaching there part-time and eventually came on the faculty. My understanding of human beings was expanded by colleagues who shepherded me along the way and with collaborators at other faith based schools (such as Calvin College and Fuller Theological Seminary). It was during this time that my life began to become integrated. Instead of being just another aspect of my life, my faith became the anchor which guided my life in a way that I had never experienced before. So what effect did this have on my studies of the brain? It caused me to look more closely at the Scriptures.

Chemical Imbalances and Pleasure Spots

While I have this chance to speak directly to pastors, I feel compelled to share a few things that make me absolutely cringe when I hear anyone (not just pastors) say them. I know they mean well, but when they say these things I just want to bury my head in my hands and crawl away. Just as I am sure that pastors must feel when they hear someone say, "*Whatever it was that happened was God's will.*" One thing I wish my pastor wouldn't say is, "There's a pleasure spot in the brain." This is a gross oversimplification of how the brain works and can further indoctrinate people into what I will call *Biological Fatalism*. Biological fatalism is fast becoming a fad in our culture, and has, at its root the assumption that people are at the mercy of their biology. If a scientist claims to have found a gene for a behavioral problem (such as infidelity, an eating disorder, hyper-competitiveness ... you name it), what people hear is, "It's not your fault. Your genes, your brain, your biology made you do it. It's not your fault you like doing X or Y so much. Your brain's pleasure center turns on when you do it, so you can't be held accountable for it." This notion that we are at the mercy of our biology denies established psychological research: when you change your way of thinking, you change the way your brain wires itself. True, there are limitations, but the readiness to which people will grasp biological explanations as defenses for inappropriate or sinful behavior is alarming.

Another thing that drives me absolutely insane is when my pastor (or anyone else for that matter) says, "(So-and-so) has a *chemical imbalance*." First off, chemicals do a pretty good job of balancing themselves according to the laws that govern them (within certain constraints). It's not as if a molecule of a neuro-transmitter (like serotonin, one of the more popular ones used in television and referred to by the media) says, "I don't think I will go over there. I'll just stay here and throw this whole system off balance." Chemicals are not imbalanced. A better way to say what (I think) they mean is that there may be a *deficiency* of a chemical in the brain that is the problem. While this may be true, it is also quite possible that it isn't a deficiency of the

neurochemical at all. Perhaps there is enough of the neurotransmitters, but their receptors aren't working properly. Simply adding more gas to a car that doesn't have spark plugs will not solve the problem. Adding more gas to the tank doesn't make a car drivable if it doesn't have tires on the wheels.

Another issue with this 'imbalanced' statement is the underlying assumption that the body is just a pot of chemicals that can be fixed by just adding more chemicals (such as drugs). "Steve has been feeling down, so lets get him some Prozac and that will fix everything." Taking antidepressants is not like adding salt or pepper to a soup to make it tastier. Human beings are not just chemical equations to be balanced. Diet, exercise, psychological stress, trauma, hormones, social interaction patterns, personality, the death of a loved one - all of these factors can impact a person's emotional state. They all must be acknowledged and dealt with when trying to help someone who is struggling with a mental health problem. Adding some chemicals to the mix is an over-simplified view of the complexity of human life.

Biopsychology and the Bible

As a man of faith, my understanding of who I am is rooted in my understanding of Scripture. This understanding is complemented by my understanding of my biology – particularly my understanding of the human brain. The question, 'What does it mean to be human?' is answered more completely when I listen to the witness of Scripture and the science of psychology. Scripture and psychology intersect in several key areas.

The Soul and embodiment

It has been my experience that most people (in the Western world) will answer the question 'What does it mean to be human?' with some version of the following: *People are immaterial/ spiritual souls that are trapped in bodies.* Does a belief in science mean that we must lose a belief in the 'soul'? The fear in many Christian circles is we lose the soul, the 'ghost in the machine' that we have reduced ourselves to nothing more than a

physical substance. If there is no distinct substance which exists after death, then there is nothing else – no heaven, no hell; no free will, no sin. If we are reduced to a material machine (even though it is a very complex, and highly evolved thing), we lose any special place within Creation.

Given the fact that Christians around the world confess the resurrection of a body and not the immortality of the soul, I find it interesting that there is so much anguish over the gnostic view of body and soul, flesh and spirit. It was my understanding of the nervous system and my exploration of Scripture that directed me to discover that I didn't *have* a soul – I *am* a soul; an embodied creation who bears the image of God. If there is one thing that biopsychologists bring to the table that forces Christians to reevaluate how we are made and what we are for, it is the concept of *embodiment*. The principle of embodiment holds that we exist in a certain place and time, and our physical body is necessary for our existence. Neurobiologists will draw attention to studies which show that all of the theological, philosophical and psychological perspectives about human nature and uniqueness can be explained as a function of our brain activity.

Human uniqueness

While Scripture tells us that humans are unique and distinct by definition (as are all species, by the way), we are driven to look for biological confirmation of our uniqueness compared to animals: humans are the smartest, humans use tools, humans use language, etc. Unfortunately, whenever a cognitive or behavioral goal post is erected to be the definitive standard, our non-human animal friends find a way to kick the field goal – and we feel the need to move the goal posts back another 10 yards to soothe our wounded species-ego. For example, we found that chimps use tools and that gorillas can learn sign language. The most recent addition to the game is the standard of culture. This set of information, or memes, which passed from generation to generation, from societal member to societal member, provides a sort of information-processing survival of the fittest. The pieces of information, these memes, procreate by being communicated

via language and birthed in the ‘mind’ of recipient. We set up the capacity for abstract thought, highly complex language, and the coherent internal representation of the external world that is created as the standard that makes humanity unique. It is from here that we are tempted to construct meaning and purpose.

The theological area known as theological anthropology is concerned with the study of humankind in relation to the divine and humanity's unique place in the universe. Within theology, it is clear that mankind is set apart and the question is whether or not it is a matter of degree or a matter of kind. Are we just a bit farther along with respect to a cognitive capacity – are we just a little ahead of the curve, so to speak, when compared to the rest of creation? Or are we something that is just fundamentally different down to our core – not just quantitatively different, but qualitatively different?

Interestingly, it is humanity alone in all of Creation that appears to have a sense of incomplete fulfillment. It is as if we are aware of an environment that exists beyond what are senses are capable of tapping into. We have intellectual, cognitive, religious, spiritual capacities that generate a host of needs, desires, passions, and ambitions that cannot be pacified this side of the Jordan. We have the potential to suffer beyond that of other species (including our nearest primate cousins). We have the potential for happiness which outstrips the rest of Creation. These longings are easily evidenced by a retrospective of philosophers and theologians from all cultures across the millennia. Our quest for ‘self-actualization,’ ‘self-discovery’ and ‘spiritual-awareness’ have occupied a substantial portion of cultural resources. As a result of this, we need to consider (as Arthur Peacocke has suggested) that we have not really identified what our true environment is. Where is true human flourishing found? It is in humanity that Creation has become aware of itself, its past, its future and its Maker.

While our cognitive tools (self-awareness, language, complex abstract thought, and the

ability to create a coherent understanding of the world) are seen in non-human animals, it is the human brain and humanity that seems to be uniquely equipped for relating to the Creator. Our environment is internally represented as a set of information which interacts with our sense of self. Our brains define what is us, and what is not us, what is really out there, and how things work. The brain works to take this knowledge and find patterns; that is to say it looks for order and meaning. It is here we begin building a model of human experience which traffics in information processing and enables consciousness.

Image of God

We need go no further into the Bible than the first chapter of Genesis to begin the journey about what makes humanity unique in Creation. It is the image of God. The image of God is not a soulish substance, cognitive property, behavioral function, or capacity. To treat it as something to be identified, found or located is to miss the point. Theologian Philip Hefner writes,

For Christians the image of God is instantiated normatively in Jesus. Although this assertion has had a long and rich tradition of interpretation, there is no consensus on exactly what it means; there is no single official or even standard interpretation of the concept of the image of God.¹

Being made in the image of God is one of the foundational theological starting points that those in the Christian faith begins with when examining humanity's place in the universe. It is because of our ‘image-of-God-ness’ that we believe that each human life is sacred. We act as God's agents and representatives in this world. Because of this image we are interconnected to each other, relating with each other and the Creator.

But Scripture and the witness of the church tells us that the image of God is also a person: Jesus Christ. Colossians 1:15 states: “He {Jesus} is the image of the invisible God, the firstborn of all

¹ *The Human Person in Science and Theology*, Eds. Niels Henrik Gregersen, Ulf Grman, and Willem Drees (2000), T&T Clark Publishers, p88.

creation.” And again in II Corinthians 4:4: “In their case the god of this world has blinded the minds of the unbelievers, to keep them from seeing the light of the gospel of the glory of Christ, who is the image of God.” So how are we made? To be made in the image of God is to be embodied and embedded in the story of Creation. Scripture again speaks to this in Romans 8:29: “For those whom he foreknew he also predestined to be conformed to the image of his Son, in order that he might be the firstborn among many brothers.” We are to be conformed to the image of Christ.

Sanctification

Scripture is echoed by the data of biopsychology which addresses not only that we are human *beings*, we are also human *becomings*. The development of the nervous system from the embryo to childhood to old age offers a glimpse at this process. Our experiences and our responses sculpt our brains and make some behaviors and thoughts more or less likely to happen. As we make decisions that are in line with Scripture, we lay down neural circuits that make sin less of an option. It is this freedom we have in Christ that could be easily understood as a function of our brain circuitry. It is not freedom to do as we want, but freedom from sin. In the same way, a life of sin and depravity has long lasting neurological consequences which make a virtuous life less of an option. Addiction to a vice and passion for holiness are two sides of the same neurological coin. This is an understanding of who we are which I find both powerful and exciting. Imagine that the process of our sanctification is part of the neurological blueprint that is laid down in each of us. Imagine that having the a brain wired to think in such a way that some temptations are no longer temptations, that some thoughts are no longer appealing, that some ways of seeing the world as Christ did are a part of our nervous system. This process would not be a loss of personal freedom, but freedom from the power of sin.

Science can offer a vision of what we can become, but it offers no clear goal. Given that we are unified thing, we can then be transformed - sometimes passively, sometimes actively, but

always into something different than what we are now. Human life is not a static adventure. It is an ongoing, dynamic process where we begin as a fertilized egg, are implanted, develop *in utero*, are delivered, are nourished, cared for, and challenged. We develop linguistic abilities and abstract symbolic systems to varying extents. We adopt cognitive sets and meet the challenges of our environment resulting from our social embedded-ness in our culture. We ask similar, yet unique questions necessary for survival, making sense of the world as we are constantly changing and adapting; becoming something that we have not been.

Purpose

Our purpose is to be conformed to the image of Christ in the manner in which we live, breath, think, act, worship and glorify God, and this involves our bodies. My studies of the nervous system may enable me to understand the architecture of human nature, but I need my theology to direct my understanding of our embodied nature. What I find so interesting about Scripture is that it does not necessarily focus on the ‘stuff’ of which we are made (the philosophers would call this our ontological nature), but it also is concerned with what we are purposed for (philosophers might call this our teleological nature).

But what is it that we are becoming? My neuroscientific training doesn't look into the future and direct towards any specific goal; it can only look backwards and into the present. Any claims that it has about purpose are limited to descriptions of function. Scripture, however, clearly teaches that what we become is just as important as being. It also teaches us that we are to live our lives out so that we may be sanctified - uniquely conformed to the image of Christ.

Further Reading

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