# Unified Eastern and Western Natural Science

by Steve Spiegel

In The Structure of Scientific Revolutions, eminent philosopher of science Thomas Kuhn describes the difficulty of understanding social influences that skew science theory. Western natural science theory is a classical paradigm: it is a complete world view supported by terms with interrelated connotations and contexts that reinforce the status quo.[1] Scientific paradigms are homogeneous; it is difficult to recognize a false assumption of a paradigm from within. In the arduous challenge (and valiant effort) to understand neuroscience, it is far easier to theorize about pathological symptoms than to theorize about theoretical problems underlying the established paradigm. Eminent philosopher of science Karl Popper understood the difficulty of identifying false assumptions when he advocated the accepted *philosophy of science* principle of "falsifiability."[2] The philosophy of science advocates that real science theories can be differentiated from ad hoc theories by *falsifying* them — explaining how to disprove them. The process of describing how to disprove a theory identifies assumptions that are potential sources of error. Although current neuroscience research is an admirable endeavor, foundational natural science theory has not been falsified to identify underlying assumptions for critical consideration.

This thesis contends that falsifying the popular western neuroscience paradigm identifies two fundamental theoretical problems: the first concerns its foundational natural science theory and the second concerns its focus on molecular neurophysiology. It is unscientific to assume complex brain principles and ignore simple binary neuroscience (eastern natural science) and it is unscientific to focus on molecular neurophysiology and ignore whole tissue neurophysiology that explains all other organs. The philosophy of informing sciences implores consideration of "binary whole-tissue neuroscience" to understand brain science and numerous neurodegenerative diseases. The following sections respectively advocate that current neuroscience research: 1) *contradicts basic science logic* when it assumes complex neuroscience principles and ignores simple binary science, 2) *contradicts the philosophy of science* when it assumes complex neuroscience principles and ignores simple binary science, 3) *contradicts a philosophy of natural science* when it assumes complex neuroscience principles and ignores simple binary science, and 4) *contradicts the philosophy of physiology* when it focuses on molecular neurophysiology and ignores whole-tissue neurophysiology. The philosophy of a science is the science's most fundamental principle; it defines and frames a science with an unprovable underlying assumption. An anomaly of the philosophy of a science corrupts all of the science that is built upon it; as information technologists advocate, "garbage in, garbage out."[3,4,5,6,7] Accepted science tenets

implore consideration of beautifully simple *binary whole-tissue neurophysiology* to understand neuroscience and numerous degenerative diseases.

While the eloquent beauty of binary science may be difficult to understand for western scientists who embrace complexity, there is tremendous research value in true natural science theory that seeks simplicity. Based on accepted natural science theory, this thesis unifies the binary science of eastern natural science with the physiology theory of western natural science for better foundational science.

First, *popular neuroscience research contradicts basic science logic while continuing a long tradition of assuming complex brain principles while brain principles are unknown; full stop*. Moreover, *popular neuroscience research continues to contradict basic science logic while assuming complex brain principles while modeling the brain with computers that operate through simple binary science; again, full stop*. It may appear that simple brain principles would be obvious to scholars but appearances are often deceiving. It is extremely difficult to reverse-engineer a system that produces a complex product based on a simple principle, especially when the simple principle is not sought. One hundred trillion neural connections produce complex thinking and complex behavior but do not prove a complex brain principle. In contrast to the common *assumption* of complex brain principles,[8,9] scientific logic demands consideration of gloriously simple binary neuroscience to understand neuroscience theory.

Second, besides contradicting scientific logic, current neuroscience research also continues to *contradict the philosophy of science* (the most basic principle of science) while *assuming* complex brain principles and ignoring simple binary neuroscience. All science theory is based on the principle of *parsimony* — Occam's razor: "All other things being equal, simpler theories make better science", or more accurately, "Fewer assumptions make better science." Unfortunately, accepted neuroscience investigations ignore parsimony as well as falsifiability; they are comfortable with increasing complexity and a related increase in unidentified assumptions. Foundational neuroscience theory that embraces cultural pride in human complexity is "socially constructed science" that contradicts the most basic principle of science. Regardless of a long, painful history of oversimplification in science research, the philosophy of science implores consideration of simple binary neuroscience (eastern natural science) to understand neuroscience theory.

Third, besides contradicting scientific logic and the philosophy of science, current

neuroscience research also *contradicts a philosophy of natural science* while *assuming* complex brain principles (and ignoring simple binary neuroscience). The philosophy of natural science advocates that our environment is best understood with a singular focus on the natural (physical, material) world but there is a secondary philosophy of natural science. The secondary philosophy of natural science divides natural science theory between the *assumption* of simple principles consistent with eastern natural science and the *assumption* of complex principles consistent with western natural science. Eastern natural science *assumes* eloquently simple principles of nature including human nature; in contrast, western natural science predominately *assumes* admirably complex principles of nature including neuroscience. Eastern natural science advocates the beautifully simple binary science of "yin and yang" while western neuroscience assumes that the brain is "the most complex machine in the universe." [8,9] Surprisingly, western natural science theory is actually divided between the predominance of natural scientists (and neuroscientists) and our most eminent natural scientists. Although the majority of neuroscientists assume complex neuroscience principles consistent with cultural expectations, our leading western natural scientists advocate simple principles of nature consistent with eastern natural science. *Our eminent natural scientists (Einstein, Brian Greene, Steven Weinberg, Walter Lewin) advocate that nature (human nature) is based on eloquently simple principles hidden beneath an appearance of complexity.*[10,11,12] Eminent western natural scientists deviate from the predominance of western neuroscientists by contending that simple principles produce the complex manifestations of human nature. Leading western natural scientists advocate human nature as a function simple principles — binary neuroscience well beyond binary neurons. But the predominance of western scientists ignore binary science or disparage the natural science of "yin and yang" as simply elevating gender stereotypes. Accepted natural science theory, accepted eastern natural science, and eminent western natural scientists implore consideration of simple principles of binary science to understand neuroscience theory.

Fourth, besides contradicting basic science logic, the philosophy of science, and the philosophy of natural science while ignoring binary science; current neuroscience research also contradicts *the philosophy of physiology while addressing organizational levels of the body*. The philosophy of physiology implores consideration of simple principles of "whole-tissue neurophysiology" to understand brain science while current neuroscience investigations focus on complex principles of molecular neurophysiology. Molecular physiology cannot explain the function of any organ regardless of molecular neurophysiology producing significant advances in understanding human pathologies. *Neurophysiologists should consider whole-tissue*

*neurophysiology consistent with how physiologists explain every other organ of the body with four kinds of whole body tissues (muscle tissue, connective tissues [bones, finger nails], epithelial tissues [skin, veins] and nervous tissue)*. Molecular neurophysiological investigations are *inconsistent* with how physiology explains every other organ of the body at the organizational level of (whole) tissue physiology and cannot explain any body organ at the molecular level.

*The philosophy of physiology explains organisms at different organizational levels of the body with each organizational level explaining the entire organism.* The body is completely comprised of body systems, and also completely comprised of body tissues, and similarly completely comprised of cells, as well as completely comprised of molecules; physiology investigates the body in "layers" or "generations" of information.[13,14,15] Anatomy and physiology texts investigate humans at different organizational levels of descending sizes and ascending complexity: body systems, body tissues, cells, and molecules. Physiology texts explain organisms, organs and organ systems with "body systems", explain body systems including organs with (whole) body tissue physiology, explain tissue physiology with cellular physiology, and explain cellular physiology (theoretically) with molecular physiology. The philosophy of physiology completely explains organisms at different organizational levels and explains organs with the organizational levels of body systems (organ systems) and body tissues. Considering the interaction of entire (nervous) tissues to understand brain science may seem abstract from within the prevailing paradigm but the philosophy of physiology implores the focus.

Accepted western physiology theory (western natural science) investigates organisms at different organizational levels of the body and can explain the function of all organs at the largest level — the level of body systems. Physiology theory describes neuroscience at the organizational level of body systems as the "nervous system" and can explain the brain and nervous system with basic, accepted natural science theory. *Natural science theory can explain brain science at the organizational level of the nervous system: the brain receives information about the environment through the peripheral nervous system, processes the information, and sends related information back through the peripheral nervous system to affect behavior generally towards species survival*. Spiritually, this process naturally promotes a general humanistic motivation for community justice and better stewardship of Mother Earth. This overview of brain physiology is a natural science explanation at the organizational level of body systems consistent with how physiologists explain every other organ and organ system. Physiology theory investigates the human organism at different organizational levels and can explain the function of all organs including the brain at the largest organizational level of body systems.

Besides explaining all organs at the organizational level of body systems, physiologists can explain all organs besides the brain at the level of body tissues. Physiologists explain all other organs with an overview of the function of our four kinds of whole body tissues (muscle tissue, connective tissue, epithelial tissue, and nervous tissue). For example, after explaining the heart at the organizational level of body systems (as a pump that shoots nourishment throughout the body and draws waste), physiologists explain the function of the heart with the increased specifics of entire-tissue physiology. Physiologists explain the heart with the interaction of entire tissues as follows: 1) *whole muscle tissues* create the general structure of a pump while flexed muscle tissues push nourishment throughout the body and pull waste, 2) *whole nervous tissues* create a periodic electric spark to flex heart muscle tissues to action, 3) *whole connective tissues* create valves in the pump structure to produce directional flow, and 4) *whole epithelial tissues* encase muscle tissues and create pipes to carry nourishment and retrieve waste. Physiologists explain all organs besides the brain with a "big picture" perspective of (whole) body tissues and their interactions.

But instead of addressing body systems and whole-tissue physiology consistent with the philosophy of physiology, current neuroscience research combines the two largest organizational organizational levels of the body. Neuroscience research integrates the organizational levels of body systems and (whole) body tissues into what it describes as "systems neuroscience." Popular *systems neuroscience* research investigates a complex micro focus on nervous tissue neurophysiology that obscures a macro focus on entire nervous tissues (and their interactions) that explains all other organs. Systems neuroscience contradicts the philosophy of physiology while combining the organizational levels of body system physiology and tissue physiology into a single organizational level.

While physiologists explain all organs besides the brain with whole body tissues, they are unable to explain the function of any organ at the cellular or molecular organizational levels. Cellular physiology cannot skip a generation of information about tissue physiology to directly explain the function any organ. Consistently, molecular physiology cannot skip two generations of information about cell physiology and tissue physiology to directly inform about organ functions. Investigating molecular neuroscience to understand brain functions is analogous to investigating the molecular structure of steel in an effort to understand the function of an automobile engine. Molecular physiology theoretically explains cellular physiology, but with a basic understanding of cellular neurophysiology, molecular neurophysiology is superfluous for understanding tissue neurophysiology and thereby brain science.

Current neuroscience research does not understand the brain at the organizational level

of body tissues because it is instead seeking a complex theory of systems neuroscience. Seeking a macro focus of entire nervous tissues may seem abstract from the perspective of the current neuroscience paradigm that embraces complexity but the philosophy of physiology implores the focus.

Scientific logic dictates that the tenets of a science are the most important guidelines to follow for any science; all science emanates from foundational principles. Unfortunately, the distinguished western science endeavor to understand neuroscience is hindered by critical, long-established misdirection at the foundation of popular natural science and neurophysiology theory. Popular western neuroscience research contradicts basic scientific logic, the philosophy of science, a philosophy of natural science (eastern natural science) and the philosophy of physiology. It is illogical (unscientific) for popular neuroscience theory to ignore magnificently simple binary science when: 1) brain principles are unknown while science theory seeks simple principles, 2) eminent western natural scientists advocate simple brain principles, 3) eastern natural science advocates binary science, and 4) neuroscientists model the brain with computers that operate through a principle of binary science. Besides ignoring binary neuroscience, it is also unscientific for conventional neuroscience research to ignore the physiology of whole nervous tissues consistent with how physiology theory explains all other organs. Science logic and accepted science principles implore consideration of eloquently simple binary neuroscience (eastern natural science) unified with western physiology theory (western natural science) to understand a new paradigm of brain science. Popular neuroscience research should unify the natural sciences with a focus on binary whole-tissue neurophysiology.

Science logic and the philosophies of informing sciences implore consideration of binary whole-tissue neuroscience to understand numerous neurological diseases. *Since neuroscientists have a general understanding of cellular neurophysiology and tissue neuroanatomy, they have all the information necessary to understand tissue neurophysiology and thereby brain science. Neuroscientists should consider the binary science of "motivated-thinking" to understand brain science wherein the thinking process is separate from the motivation that gives it direction. Consistently, neuroscientists should consider whether a set of nervous tissues structured for motivation (the limbic system) interacts with a set of nervous tissues structured for learning, thinking, and memory (the cerebral cortex).*

Unified Eastern and Western Natural Science implores the reader to suspend belief in a massive quantity of complex, ambiguous and disjointed support for western cultural expectations and instead follow real natural science theory that seeks reductionism. This treatise advocates a

paradigm shift from cultural science to foundational science based on unified natural science theory — unifying eastern binary science with western physiology theory. The unification of the natural sciences is based on the elements of eastern and western natural science most consistent with pure natural science theory. It is falsified by disproving its logical deductions or its explanation of the philosophy of science, the philosophy of natural science, the philosophy of physiology, or accepted nervous system anatomy and physiology. Unified natural sciences may be difficult to understand from the context of the established western science paradigm but it is elegant, parsimonious science. Unified Eastern and Western Natural Science implores a reverence for scientific truth to revolutionize health care and greatly improve the human social condition.

References


1) Kuhn, T. (1962). *The Structure of Scientific Revolutions*, University of Chicago Press.
2) Popper, K. (1959). *The Logic of Scientific Discovery,* reprinted 2002 by Routledge.
3) Noorden, Richard (July 18, 2023). Medicine Is Plagued by Untrustworthy Clinical Trials. How Many Studies Are Faked or Flawed? *Nature, https://www.nature.com/articles/d41586-023-02299-w*.
4) Ioannidis, J. A. (2016). The Mass Production of Redundant, Misleading, and Conflicted Systematic Review and Meta-analyses. *The Milbank Quarterly*, *94*(3), 485-514. doi:10.1111/1468-0009.12210.
5) McKie, R. (February, 2024) The Situation Has Become Appalling, *The Guardian*, https://www.theguardian.com/science/2024/feb/03/the-situation-has-become-appalling-fake-scientific-papers-push-research-credibility-to-crisis-point
6) Baraldi, J. (January, 2022) A Cross-Sectional Examination of Conflict-of-Interest Disclosures of Physician-Authors Publishing in High-Impact US Medical Journals, *MedRxiv*, https://www.medrxiv.org/content/10.1101/2021.09.12.21263468v2
7) Eysenck, H.J. (1978). An Exercise in Mega-Silliness, *American Psychologist*, vol. 33(5), May 1978, 517.7
8) Eagleman, David (2015). *The Brain with David Eagleman: All Is Not as It Seems,* PBS, (First sentence of series).
9) Sterling, P. & S. Laughlin (2017). *Principles of Neural Design*, The MIT Press.
10) Lewin, W., N. Buckner & R. Whittlesey (1998). Mysteries of the Universe, A Science Odyssey, (part 1), A PBS film.
11) Greene, B. (1999). *The Elegant Universe,* Norton, New York.
12) Weinberg, S. (2003). *The Elegant Universe*, Nova, a PBS film by Brian Greene.
13) Tortora, G. & B. Derrickson (2012). *Principles of Anatomy and Physiology.* New York: Harper and Row (13th Edition).
14) Martini, F. et al. (2011). *Fundamentals of Anatomy and Physiology.* Benjamin Cummings Publishers, (9th Edition).
15) Marieb, E. & K. Hoehn (2012), *Human Anatomy and Physiology,* Benjamin-Cummings Pub. Co, (9th Edition).