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Biology

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Critical Rationalist Biology

Biology under critical rationalist epistemology contains information theory. Critical rationalism is self-critical rationalist epistemology. Thereby self-critically asserting reason as the foundation of knowledge. Information theory successfully acknowledges both evolution and possible creationism. Information theory notes constructivism's dominance, while privilege is heritable. No gene is 100% known to be a certain trait. Critical rationalist biology sets the stage for critical theory such as CRT. Evolution may have happened yet no acquired mutation can turn other animals human. Without least partial free will(the fundamental choice to focus on life) human reason would be impossible. So, free will is compatible with determinism. Parts of life are choices while others are not.

Previously, the author has charted other sciences with critical rationalism. For context, the essay covers the epistemology itself then those two disciplines. Comte's Hierarchy sciences contrasts with falsifiability ranking "astronomy, physics, chemistry, biology, and sociology" from simplest to complex(Simonton 2015). Heuristically, more falsifiable science is less complex. Astronomy is the most falsifiable. Physics is the second most falsifiable. Biology is the second most complex. Sociology is the most complex. Humans are complex thus, social sciences rely on heuristics.

Heuristics, being rules of thumb, are unfalsifiable. “criterion of falsifiability, in the philosophy of science, a standard of evaluation of putatively scientific theories, according to which a theory is genuinely scientific only if it is possible in principle to establish that it is false”(Britannica 2024). The quote indicates that more complexity perhaps inherently negatively correlates with falsifiability.

“Comte’s Hierarchy of Sciences completely disagrees with Popper’s Critical Rationalism. Comte, knowing or not, preferred sciences to be less falsifiable. Popper correctly identified that scientific statements can never be proven but, can be debunked. Thus, the higher a science gets on Comte’s Hierarchy of Sciences, the closer it gets to survival heuristic design, instead of, falsifiable science. Perhaps a science gets more falsifiable the less complex it becomes”(Ohnemus 2024).

Critical Rationalist Physics Summarized:

“We can incorrectly cling to the Newtonian and macroscopic view, thereby abandoning relativity, quantum mechanics, modern cosmology, and string theory. We can incorrectly not adjust premises and concepts upon contradictions in relativity, quantum mechanics, modern cosmology, and string theory. Or we can apply the law of identity to all of modern physics, PERHAPS identifying the afterlife”(Ohnemus 2024).

Summary of critical rationalist chemistry:

“Of course in chemistry class, especially on EXAMS, students should abide by their professors or suffer the consequences (usually poor grades). In engineering, the thin line between proto and current sciences must be acknowledged with critical rationalism, or products may suffer. Theory is not fact. Science MUST be falsifiable”(Ohnemus 2024).

Parapsychology is less falsifiable and more complex than biology, the former's summary: "Critical rationalist evidence for telepathy, afterlife studies, and probability"(Ohnemus 2024).

Biology, without a specific epistemology, is "… a branch of science that deals with living organisms and their vital processes. Biology encompasses diverse fields, including botany, conservation, ecology, evolution, genetics, marine biology, medicine, microbiology, molecular biology, physiology, and zoology"(Joshi 2024).

Information theory correctly explains the false dichotomy of evolution and creation, being "a mathematical representation of the conditions and parameters affecting the transmission and processing of information"(Markowsky 2024).

Evolution the unfalsifiable theory contends that "types of plants, animals, and other living things on Earth have their origin in other preexisting types and that the distinguishable differences are due to modifications in successive generations"(Ayala 2024). Creationism is "the belief that the universe and the various forms of life were created by God out of nothing (ex nihilo)"(Britannica 2024). Both evolution and creationism are unfalsifiable. History's unfalsifiability roots the false dichotomy. Risk analysis prompts using information theory. Information theory also practically links to computers, adding both rigor and practicality.

"Constructivist Law and Hereditary HEURISTIC TheoremConstructivist Law and Hereditary HEURISTIC Theorem(group theory) A theorem which proves that given randomness such as entropy, the uncertainty principle, dimensionality, the fallacy of inductive reasoning, etc., a particular gene is NEVER KNOWN to manifest itself as a particular trait. Thus, illnesses and other traits, as a HEURISTIC, should be monitored as POSSIBLY hereditary"(Ohnemus 2023).

“Could the future of genetic engineering be inducing both somatic and germ-line mutations to obtain recessive traits and genes? How specifically? Yes because simpler surgery is less likely to injure. Somatic mutations reach all cells except the reproductive ones. Germline mutations reach the reproductive cells. Somatic mutations may affect an individual's traits. However, germline mutations affect the offspring's traits AND genes. Plus, everyone carries the most recessive traits and genes, so the surgery may be simpler than others”(Ohnemus 2024).

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“Assuming all individuals with the dominant traits and genes already carry the recessive versions, is engineering for the recessive possible by..., for the lack of a better term, genetically highlighting the carried recessive genes and traits? 1)Genetically engineering a strong enough specific somatic mutation could transform an individual’s dominant traits into recessive ones. 2)Genetically engineering a strong enough specific germinal mutation could transform an individual’s dominant genes into the recessive ones”(Ohnemus 2024).

“Perhaps Wolfram Alpha, using cellular automata, could demonstrate the simplest, and least risky, genetic engineering methods by modeling the specific nature with computer programs instead of equations. ‘Are mathematical equations the best way to model nature? For many years it had been assumed that they were. But in the early 1980s, Stephen Wolfram made the radical

proposal that one should instead build models that are based directly on simple computer programs. Wolfram made a detailed study of a class of such models known as cellular automata and discovered a remarkable fact: even when the underlying rules are very simple, the behavior they produce can be highly complex, and can mimic many features of what we see in nature (Wolfram 1994). Works Cited “Cellular Automata and Complexity: Collected Papers: Wolfram, Stephen: 9780201626643: Amazon.com: Books.” Amazon.com, February 21, 1994, www.amazon.com/Cellular-Automata-Complexity-Collected-Papers/dp/0201626640. Accessed 4 Aug. 2024”(Ohnemus 2024).

For example, perhaps Wolfram Alpha could chart the genetic mutations that created the colonizers, thereby distributing white privilege: “European Mutation Equation. Hypothetically how long would it take to turn an individual’s racial stock into that of a racial European? A machine would have to mutate someone to a certain number on the scale of racial stock. The original racial stock, time to mutate, rate of mutation, and finally mutated racial stock would all be the variables. The number of someone’s racial stock is determined by how many mutations that individual has from being racially European. The more mutations away from Racial European stock the lower the number. M(t) = r(t) + o, o-original racial stock, t-time, r-rate of mutation, M(t)-mutated racial stock. Much is still incompletely known about race such as the origins of Europeans, what race is, and how mutations work”(Ohnemus 2022). Simple computer models could replace this equation while being more accurate given Wolfram’s database of biology.

In sum, critical rationalist biology begins with epistemology, then maps biological processes, and finally ends with bio-engineering.

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