

Potential Unjustifiable Opposition to Neuronology

We have encountered—and continue to encounter—extraordinary hostility, humiliation, and opposition to our sufficiently completed basic research on Componentology (<http://Componentology.org>)—as though it were heresy to pursue a scientific understanding of the objective reality of physical components and parts, including their nature, essential properties, and intrinsic characteristics. Our research encompasses the anatomy, structure, design, and construction of physical Component-Based Products (CBPs), as well as the methods and mechanisms that form the foundation of true Component-Based Engineering (CBE).

Even assuming that such insights were to not immediately benefit every practitioner, there is no evidence that acquiring scientific knowledge, and understanding of physical entities—whether physical components or biological neurons—and the objective mechanisms governing them has ever been detrimental to the advancement of science or engineering.

What has provoked discomfort and hostility among software researchers and practitioners is not the pursuit of knowledge itself, but rather the scientific facts and valid evidence we have accumulated through Componentology, which directly challenge their entrenched misconceptions and dogmatic beliefs about so-called components and the purported methods and mechanisms of CBE.

Similarly, we can expect resistance to Neuronology, because the scientific facts, objective insights, and verifiable evidence accumulated through Neuronology will inevitably challenge entrenched misconceptions and dogmatic beliefs about so-

called neurons and the supposed methods or mechanisms of neural networks for AI and AGI.

Indeed, a defining hallmark of nearly every great scientific discovery in history is that it exposed and overturned deeply entrenched false beliefs. Componentology has already made such profound contributions, which have been instrumental in enabling our breakthrough patented inventions—and we strongly believe that Neuronology will achieve the same transformative impact.

What do we have to lose by scientifically studying and understanding biological neurons and the mechanisms governing neural networks from a computational perspective—especially if it helps us uncover how nature solved cognitive functions and intelligence? Based on my two decades of experience in Componentology, I have found that such a process not only exposes false beliefs but also reveals critical gaps in our existing knowledge. Moreover, it enables the creation of powerful tools, technologies, methods, and frameworks for systematically testing, validating, and falsifying each concept within the Body of Knowledge (BoK)—including theories, descriptions, and explanations.

Our experience in developing Componentology has shown that a valid hard scientific paradigm depends on the development of robust tools, technologies, methods, and frameworks for the rigorous testing and validation of each concept within our body of knowledge and understanding. The capacity to test, validate, and falsify each concept is indispensable—not only for deepening insight, but also for refining and perfecting the concepts themselves, thereby progressively aligning our understanding and perception with objective reality. This process embodies the symbiotic relationship between basic research and applied research, enabling mutual

advancement through iterative refinement—where better tools and technologies enhance knowledge, and improved knowledge, in turn, drives innovation.

Throughout history, nearly every transformative scientific knowledge has faced unjustifiable opposition. It is imperative to recognize that scientific understanding has never impeded progress; instead, it is the persistence of undetected misconceptions or false beliefs that has consistently posed the greatest risk of causing irreparable harm.

What kinds of scientists are likely to feel offended—or resort to ad hominem attacks or false insinuations—because of my efforts to raise awareness of the scientific knowledge and understanding of objective reality represented by Componentology (or Neuronology), through my presentation of the scientific facts and evidence uncovered through objective investigation?

Based on our ongoing experience with Componentology, we expect Neuronology to encounter similarly fierce resistance—not due to any deficiency in scientific rigor, but because its scientific facts and valid, verifiable, and reproducible evidence directly challenge deeply entrenched dogmatic misconceptions: http://componentology.org/raju/VitalIV_Kuhn3Mistakes.pdf

The resistance and hostility were not because the new verifiable and reproducible evidence is untrue, but because the valid evidence contradicted or challenged prevailing entrenched misconceptions, as exemplified by the historical opposition to various early discoveries in Germ theory and Quantum theory:

Let me illustrate the profound challenge that the Body of Knowledge for Componentology has faced over the past decade: Imagine that, in the 1950s—

before the advent of digital computers—a team of five scientists spent three years conducting foundational research and authored a comprehensive book on Componentology. If such a book were discovered today, nearly every concept within it—its theories, descriptions, methods, and explanations of the objective reality of physical components and parts—would be deemed heretical and met with fierce resistance.

The book (e.g., see <http://componentology.org/Fly/Booklet2.pdf>) would illuminate the true nature, essential properties, and intrinsic characteristics of physical components; it would reveal the anatomy, structure, design, and construction of physical Component-Based Products (CBPs); and it would articulate the methods and mechanisms that form the foundation of authentic Component-Based Engineering (CBE). This is precisely the predicament: truths that contradict entrenched misconceptions are not met with curiosity, but with rejection—as if heresy were a crime against the orthodoxy of misunderstanding.

Modern-day books grounded in the paradigms of Heliocentrism, Germ Theory, or Quantum Theory would have faced the same resistance and hostility if they had been transported back to the eras in which these theories were first proposed. This hostility would not arise because the ideas were false, but because they were inconsistent with, irreducible to, and disruptive of the widely accepted and deeply entrenched dogmas and misconceptions of their time.

Was there any opposition to Germ Theory?

Give few examples from documented history.

ChatGPT said: Great question! While **germ theory of disease** is widely accepted today, it faced significant opposition historically—especially in the 19th century when it was first proposed. There are indeed **documented histories of opposition**

from both scientists and practitioners of the time, rooted in competing medical theories, professional inertia, and philosophical objections.

Here's a **summary of the main types of opposition** to germ theory, with historical examples:

1. Miasma theory as the dominant paradigm

Before germ theory, the prevailing explanation for disease was the **miasma theory**, which held that diseases were caused by "bad air" or noxious vapors from decomposing organic matter.

- Many physicians and public health officials were deeply invested in miasma theory because it aligned with sanitation reforms and urban planning efforts.
- For example, **Florence Nightingale** promoted sanitary reforms but rejected germ theory during her lifetime, attributing disease to foul air rather than microbes.

👉 **Opposition type:** Paradigm entrenchment; belief in environmental causation rather than microbial.

2. Resistance from the medical establishment

Some physicians viewed germ theory as a threat to their authority or as too simplistic.

- **Max von Pettenkofer**, a prominent German hygienist, famously **drank a glass of cholera bacteria** (sent by Robert Koch) to "prove" that germs alone did not cause disease; he didn't develop cholera (possibly due to natural immunity or insufficient dose), which he claimed as proof against germ theory.
- Pettenkofer argued that environmental factors (soil, groundwater) were required for germs to become pathogenic.

👉 **Opposition type:** Scientific skepticism; belief in multifactorial causation over microbial moncausation.

3. Skepticism of laboratory methods

Some critics doubted whether lab-based findings about microbes could be generalized to real-world conditions.

- Surgeons and physicians questioned whether laboratory bacteria were the same as those causing disease in humans.
- There was distrust about the **microscope as a "black box" technology**, requiring interpretation by specialists.

👉 **Opposition type:** Epistemological skepticism; distrust in novel scientific instruments and experimental methods.

4. Philosophical and vitalist objections

Some thinkers objected to germ theory because it conflicted with **vitalist** or **holistic views of disease**, which saw illness as an imbalance in bodily forces rather than an invasion by external agents.

- Practitioners of homeopathy, naturopathy, and similar schools resisted germ theory because it undermined their models of health.

👉 **Opposition type:** Philosophical incompatibility with reductionist or mechanistic explanations.

5. Religious objections

In some communities, disease was still interpreted as divine punishment or a moral failing.

- While not widespread among scientists, religious framings of illness delayed acceptance of germ theory in certain cultural settings.

👉 **Opposition type:** Theological resistance; belief in moral/spiritual causes over physical pathogens.

Documented historical sources

Here are key references if you're interested in scholarly accounts:

- ✓ "The Germ Theory and Its Critics" by Michael Worboys (History of Science journal) – an excellent overview of scientific opposition.
- ✓ "The Fall of the House of Miasma" by Christopher Hamlin – explores the transition from miasma to germ theory.
- ✓ "The History of Germ Theory" by Louis Pasteur, Robert Koch, and others in their original writings.
- ✓ Max von Pettenkofer's famous cholera challenge is discussed in "The Gospel of Germs" by Nancy Tomes.

Important note

Opposition to germ theory wasn't always *anti-science*; much of it came from legitimate **scientific debate** and competing interpretations of evidence. It took decades of research, experiments, and public health successes (e.g., antiseptic surgery, vaccination) to **build consensus** around germ theory.

Was there any opposition to Quantum Theory?

Give few examples from documented history.

ChatGPT: Excellent follow-up question! Yes—just like germ theory, **quantum theory** (or quantum mechanics) has faced opposition, both historically and even today, though in different forms and for different reasons.

- ✓ Documented opposition to quantum theory falls into several categories:

1. Early opposition: Philosophical discomfort (Einstein & others)

Probably the most famous critic of quantum theory was **Albert Einstein**. While he helped *found* quantum theory (with his work on the photoelectric effect), he never accepted its **probabilistic interpretation** (as formalized by Niels Bohr and the Copenhagen interpretation).

- Einstein's famous quote:

👉 “*God does not play dice with the universe.*”

- He believed quantum mechanics was incomplete and that there must be underlying "hidden variables" restoring determinism.
- Einstein, Podolsky, and Rosen (EPR) published the **EPR paradox (1935)** to argue that quantum mechanics could not provide a complete description of physical reality.

👉 **Opposition type:** Philosophical → objection to indeterminacy, lack of realism.

2. Alternative interpretations & theoretical disagreements

Other physicists also objected to the dominant **Copenhagen interpretation**, which posited that physical systems don't have definite properties until measured. Alternative interpretations were proposed, including:

- **Pilot-wave theory (Bohmian mechanics)** → David Bohm (1952) revived Louis de Broglie's earlier deterministic theory.
- **Many-worlds interpretation** → Hugh Everett III (1957) rejected collapse of the wavefunction in favor of branching universes.
- **Objective collapse theories** → such as GRW theory (Ghirardi–Rimini–Weber).

While these are now recognized interpretations within physics, they initially faced **resistance from the mainstream**.

👉 **Opposition type:** Competing theoretical frameworks; no consensus on philosophical implications.

3. Experimental challenges & skepticism (early 20th century)

In the early decades, some physicists resisted quantum theory because:

- It violated **classical intuition** (wave-particle duality, uncertainty).
- Predictions seemed mathematically strange and hard to visualize.
- Its probabilistic nature appeared anti-realist or epistemologically problematic.

For example, **Erwin Schrödinger** (despite creating wave mechanics) disliked the Copenhagen view:

- Schrödinger's "**cat paradox**" (1935) was intended as a critique, illustrating absurdity of superposition at macroscopic scales.

👉 **Opposition type:** Conceptual and interpretive discomfort.

4. Later critiques: Ontological & metaphysical objections

Even after experimental validation (e.g., Bell test experiments), critics from philosophy and outside physics have objected to:

- **The loss of determinism.**
- **Measurement problem (observer's role in reality).**
- **Nonlocality ("spooky action at a distance").**

Some critics view quantum theory as incomplete or in need of deeper explanatory foundations.

👉 **Opposition type:** Philosophical realism vs. instrumentalism.

5. Fringe opposition & pseudoscience

Outside mainstream science, some **non-physicists** and **philosophical skeptics** claim quantum theory is incoherent, mystical, or flawed.

Examples include:

- Anti-quantum conspiracy theories.
- Overuse/misuse of quantum jargon in pseudoscience ("quantum healing", "quantum consciousness").
- Critics who reject both relativity and quantum mechanics as ideological.

👉 **Opposition type:** Non-scientific or conspiratorial; no academic legitimacy.



Key historical moments of opposition:

- **1927 Solvay Conference** → heated debates between Einstein, Bohr, Heisenberg.
- **EPR paper (1935)** → key philosophical challenge.
- **Bell's theorem (1964)** → experimentally tested hidden variables, constraining alternatives to quantum mechanics.
- **Decades of dismissal of Bohm's pilot-wave theory** until its recent revival.



Important insight:

Unlike germ theory or heliocentrism, quantum theory was never widely rejected as a whole once its predictions were experimentally validated—it was more the interpretations (how to *understand* it) that remained contested.

Today, the mathematical formalism is universally accepted in physics because it works spectacularly well in practice, but debates about what it *means* still continue.

<http://neuronology.org/JustificationForNeuronology.pdf>

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