# The Paradox of Scientific Criteria: A Farce of Self-Deceptive Double Standards

# 《科学标准的悖论：一场自欺欺人的双重标准闹剧》

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## English Abstract

Science is widely regarded as the paradigm of truth-seeking, and its proclaimed criteria of "testability, falsifiability, and reproducibility" are used to judge all forms of knowledge. However, when applied to itself, these criteria lead to a fatal paradox: mathematical axioms (e.g., "1+1=2") cannot be empirically tested and are therefore excluded from "science" by the scientific community; yet all physical formulas, chemical equations, laws of conservation of mass and energy, and other scientific theories logically depend on these axioms. Through simple analogies such as "making gold jewelry from non-gold metal" and "prescription vs. medicine," as well as a reductio ad absurdum (if 1+1≠2, the entire scientific edifice collapses), this paper systematically exposes the inherent contradictions and double standards of the scientific criteria. On one hand, the scientific community refuses to acknowledge the scientific status of its own meta-hypotheses; on the other hand, it accepts as scientific the theories derived from those very hypotheses. This is a quintessential case of self-deception and epistemic hegemony. The paper critiques the pseudo-scientific nature, double standards, hypocrisy, and thuggishness of scientism, calling for science to return to humility and to recognize its own boundaries and meta-assumptions.

**Keywords:** scientific criteria, paradox, double standard, mathematical axioms, 1+1=2, scientism, pseudo-scientific nature

In today's society, science is regarded as the ultimate authority. Whoever holds the word "science" holds the power to judge everything. However, when we truly examine the set of criteria that science boasts— "testable, falsifiable, repeatable"— an embarrassing paradox emerges: these criteria cannot be consistently applied to science itself. Not only are they unscientific, but they are also full of double standards, hypocrisy, and even a thuggish arrogance.

## I. A Simpler Analogy: Gold Jewelry Made from Non-Gold Metal

Let's start with a piece of common sense that even a child can understand:

If someone refuses to admit that a certain piece of metal is gold, but then melts that metal and fashions it into rings and bracelets, and then happily acknowledges those ornaments as "gold rings" and "gold bracelets"— wouldn't you think that person is crazy?

Where does the gold identity of the rings come from? It can only come from that piece of metal. If that metal is not gold, then on what basis can the rings be called gold rings? This is the most basic logic: if the cause is not true, the effect cannot be true.

Yet the scientific community does the same thing every day:

· It refuses to admit that mathematical axioms (e.g., 1+1=2) are "scientific" (because they cannot be empirically tested).

· But then it uses these axioms to derive physical formulas, chemical equations, and the laws of conservation of mass and energy.

· And then it confidently acknowledges those formulas as "scientific."

Where does the scientificity of physical formulas come from? It can only come

from mathematical axioms. If 1+1=2 is not scientific, then on what basis is F=ma scientific? This is not rigor— it is self-deception.

This analogy is more devastating than any complex philosophical argument, because it uses the simplest common sense to tear apart the double-standard fig leaf that the scientific community has maintained for over a hundred years.

## II. Prescription Unscientific, Yet the Medicine Is Scientific? – An Absurd Starting Point

Consider another equally simple analogy:

If a medical prescription is unscientific, then the medicine made according to that prescription cannot be scientific, no matter how standardized the manufacturing process is. Because the scientificity of a medicine stems from the scientific basis of its formula, not from the production process. Likewise, if the formula for a material is unscientific, then the material made from that formula cannot be scientific.

The scientific community's attitude toward mathematics and physics violates this common sense. It is like acknowledging that a prescription is unscientific, yet admitting that the medicine made from it is scientific. This is not rigor— it is schizophrenia.

## III. 1+1=2: The Cornerstone That Supports the Entire Edifice, Yet Is Kicked Out

Let's place "1+1=2" under science's magnifying glass.

· Quantum mechanics assumes wave functions cannot be directly observed, but its predictions are experimentally verified → the scientific community says: quantum mechanics is science.

· Relativity assumes the constancy of the speed of light cannot be directly proven, but its predictions are experimentally verified → the scientific community says: relativity is science.

· 1+1=2 assumes Peano's axioms cannot be directly tested, yet all the laws of physics, chemistry, and biology derived from it have been verified by countless experiments → the scientific community says: 1+1=2 is not science.

Such double standards are breathtaking.

Even more ironically, the scientific community often uses the criterion that "the broader the scope of application and the stronger the explanatory power, the more scientific a theory is." By that standard, 1+1=2 applies to every branch of science—physics, chemistry, astronomy, geology, biology… Without it, no quantitative science exists. It is more universal and more fundamental than Newtonian mechanics, relativity, or quantum mechanics. Therefore, it ought to be the most scientific, the most indisputable scientific truth.

But the scientific community refuses to accept it. The only reason: it cannot be empirically tested. Yet, the assumption of "constancy of the speed of light" in relativity has never been directly tested (you cannot measure a limiting speed that is by definition unmeasurable), and the "measurement postulate" in quantum mechanics has never been directly tested either. Why is the former science and the latter not?

This is not a standard— it is a territorial division: what belongs to mathematics is not recognized by physics; yet physics uses what belongs to mathematics, and then turns its back on it.

## IV. One Blow of Reductio ad Absurdum: If 1+1≠2, the Scientific Edifice Collapses Instantly

Let's take the scientific community's criteria seriously and conduct a thought experiment:

Suppose 1+1≠2. Then:

· The law of conservation of mass (total mass of reactants = total mass of products) cannot hold, because the addition on both sides of "=" is no longer valid.

· The law of conservation of energy (total energy remains constant) cannot hold.

· Balancing chemical equations ($2H_2+O_2\rightarrow 2H_2O$) becomes nonsense.

· Newton's second law F=ma, where multiplication is essentially repeated addition, fails.

· Maxwell's equations, Schrödinger's equation… all collapse.

Without 1+1=2, there is no modern science. This is an ironclad fact.

So here is the question: an axiom that the scientific community refuses to recognize as "scientific" is the indispensable logical premise for all "scientific" laws. What does this mean? It means that science builds itself on a foundation that is "unscientific." This by itself is not a problem— every knowledge system has meta-assumptions. The problem is that science, while relying on this foundation, wields the ruler of "testability" to judge other fields, yet never dares to measure its own foundation with that same ruler.

It is like a man standing on sand and saying, "I only believe in solid ground under my feet," but refusing to look down at the sand beneath him— not because he cannot see it, but because he dares not.

## V. Hypocritical Double Standards: Playing Dumb Upstream,

## Hegemonic Downstream

In practice, the scientific community's standards present a perfect double face:

| Object | Empirically Testable? | Recognized by Scientific Community? |
|---|---|---|
| Mathematical axioms (1+1=2) | No | Not recognized as science |
| Quantum mechanics assumptions (wave function) | No | Recognized as science |
| Relativity assumptions (constancy of light speed) | No | Recognized as science |
| Physical formulas (F=ma) | Yes | Recognized as science |

Do you see it? For equally untestable assumptions, those from mathematics are excluded, while those from physics are accepted. The difference lies not in the nature of the assumptions, but in the disciplinary label. This is naked epistemic hegemony: the physics department has the right to call its assumptions "scientific postulates," while the mathematics department's assumptions can only be called "logical conventions."

What's even more thuggish is: when science faces domains beyond its framework (consciousness, causality, the Tao, the ultimate source), it immediately brandishes the self-proclaimed beheading sword of "untestability" and cuts them down. But when that sword is pointed at its own mathematical foundation, it says,

“That’s a different category.” When it needs to exclude others, the standard is as hard as iron; when it needs to protect itself, the standard is as soft as mud.

This is not science— it is the religionization of science: Scientology (in the sense of “scientism as a religion”).

## VI. Thuggishness and Roguishness: Using Someone Else’s Foundation to Demolish Someone Else’s House

The most contemptible thing about science is not its limitations, but that it refuses to acknowledge its limitations and instead uses those limitations as weapons.

· It lives by relying on 1+1=2, yet turns around and denies that 1+1=2 is truth.

· It uses “testability” to deny consciousness, causality, and the Tao, yet turns a blind eye to its own meta-assumptions.

· It has a good time playing within its own small circle, then runs outside and points at everything else, saying, “You are unscientific.”

This kind of behavior, in any other field, would be denounced as “ingratitude,” “burning the bridge after crossing it,” or “double-standard dog.” But because science holds the discourse power, it can package this roguish behavior as “rigor.”

Charlie Munger once said: “To a man with a hammer, everything looks like a nail.” Science is that hammer. It does not allow anything in the world that is not a nail. If something isn’t a nail, it will either hammer you into one— or declare that you do not exist.

## VII. Conclusion: Science, Please Put Away Your Arrogance

We are not trying to negate the value of science. Science has achieved brilliant

accomplishments in the material world and technological applications— there is no doubt about that. What we negate is scientism— that arrogance which takes the scientific method as the sole criterion of knowledge and uses it to judge all domains.

The true spirit of science should be Socrates' "I know only that I know nothing," Kant's "drawing boundaries for reason," and Wittgenstein's "What we cannot speak about we must pass over in silence." It should not be today's attitude of "I am the truth; those who follow me prosper, those who oppose me are pseudoscience."

The paradox in scientific criteria is not terrible; what is terrible is refusing to acknowledge the paradox and instead turning it into a weapon. 1+1=2 is science. Whether you recognize it or not, you have to— because if you don't, you have no ground to stand on yourself.

Science, first test your own foundation before you presume to judge the world.

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