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Posted Date: 1 July 2025

doi: 10.20944/preprints202507.0015.v1

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 doi:10.20944/preprints202507.0015.v1

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Non-Mainstream Scientific Viewpoints in Microwave Absorption Research: Peer Review, Academic Integrity, and Cargo Cult Science

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Abstract

This study critically examines peer review, academic bias, and scientific integrity in the field of microwave absorption research. The paper documents how mainstream publications routinely ignore well-known opposing theories, reject manuscripts without concrete evidence, and perpetuate practices that resemble cargo cult science. Drawing on journal rejection correspondence, ethical guideline, and insights from public intellectuals such as Eric Weinstein and Richard Feynman, the analysis highlights systemic flaws in current peer review processes. The argument is made that present peer review serves more to safeguard the reputation of mainstream scientists than the reputation of science itself. Real peer review, in contrast, begins only after a paper has been published—when the broader scientific community can engage with and challenge the work. Proposed reforms emphasize transparency, evidence-based rejection, and the restoration of scientific integrity.

Keywords: academic bias; research ethics; publication bias; innovation resistance

1. Introduction

Academic publishing is intended to advance scientific knowledge through rigorous peer review and open debate. It should tolerate mistakes [1,2] and seriously engage with contrarian theories: when an opposite theory exists [3–6], mainstream scientists ought to study it and explain in their papers why they do not adopt it. However, in practice, mainstream science often fails to engage seriously with opposing theories, [7] even when the papers of the alternative theory are widely known and well-documented. This is particularly evident in microwave absorption research, [8–13] where the majority of papers persist in endorsing the impedance-matching theory without acknowledging or refuting the newly emerged opposite wave-mechanics alternative, [14] despite its significant visibility and downloads [15,16]. Such practices transform science into an academic game, exemplifying what Richard Feynman termed cargo cult science [17,18].

Manuscripts challenging mainstream theories are often rejected on the basis that "there is no absolute truth", "the evidence provided is not sufficient", or with the claim: "while we do not question the validity of your work, I regret to inform you that your submission did not receive a high enough rating in the screening process to be considered further". Such claims are unethical [19,20]. The subject of overturning accepted theory should be classified as novel and important, and such manuscripts can only be rejected by providing contradict evidence to the arguments of the manuscripts. If reviewers cannot provide academic evidence against the arguments of the manuscripts, they should not reject them in the name of "insufficient to deny accepted theories", but instead allow for the accumulation of evidence contrary to the theories concerned. If a theory is correct, it should withstand scrutiny from every perspective. There are no trivial matters in science since a single contradiction may undermine the entire framework.

 doi:10.20944/preprints202507.0015.v1

Journals frequently claim to prioritize experimental results over theoretical conclusions, reflecting a broader trend where only experiments are considered "real science." However, experiments alone cannot negate conclusions drawn from logically sound theory [21]. Historically, the era of alchemy was characterized by experimentation without scientific rigor, while the achievements of Newton's time stemmed from valuing theoretical research grounded in mathematical logic. The current lack of groundbreaking theoretical advances may be due to an overemphasis on experiments at the expense of theoretical inquiry [22,23].

2. Literature Review

2.1. Ethical Standards in Peer Review

According to Cabbolet, Marcoen J. T. F., rejecting a manuscript critical of mainstream theory without providing concrete evidence invalidating its conclusions is unethical [19]. Reviews must cite specific evidence contradicting the submission rather than appeal to consensus or journal focus.

2.2. Cargo Cult Science and Scientific Integrity

Richard Feynman's "cargo cult science" concept [17,18] highlights the missing element of scientific integrity—leaning over backwards to present potential errors and contradictory evidence. Feynman urges scientists not to fool themselves or the layman, reporting all facts that might invalidate their theories.

2.3. Historical Patterns of Ignoring Valid Critiques

Correct conclusion was often defeated by wrong theory. Feynman's recounting of Young's rat-maze experiment [17] illustrates how correct methods and criteria can be overlooked—a hallmark of cargo cult science. Correct results are often ignored: subsequent papers on rat behavior favored for incorrect conclusions and did not reference Young's rigorous controls, despite their fundamental importance.

2.4. The Problem with Peer Review

Eric Weinstein and others [24–26] have argued that present peer review is not truly about advancing science but about protecting the reputations of established scientists. As Weinstein states, [24] "Peer review is a cancer from outer space. It came from the biomedical community. It invaded science." He further argues that "peer review is not peer review. It sounds like peer review. It is peer-injunction. It is the ability for your peers to keep the world from learning about your work".

Weinstein's experience with experimental gerontology illustrates how reviewers with personal or professional conflicts can block publication, even when their critiques lack substance. The process often fails to distinguish between high-quality and low-quality critiques, and editors may override reviewers only when the flaws in the review are blatant.

3. Case Study: Wave-Mechanics Theory vs. Impedance-Matching Theory

3.1. Visibility of the Opposing Theory

It is demonstrated that the community awareness of the wave mechanics theory counter to the current microwave absorption theories is substantial, [15,16] for example, the Physica Scripta paper "A theoretical investigation of the quarter-wavelength model—part 2: verification and extension" [15] has been downloaded 355 times, yet mainstream articles still omit or dismiss it without explanation.

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3.2. Rejection Without Substantive Critique

Analysis of journal rejection correspondences reveals systematic patterns in how non-mainstream theories are evaluated [19]. A typical rejection letter from ACS Applied Electronic Materials illustrates these patterns:

"The manuscript does not align with the journal's emphasis on new, clearly validated insights in the field of applied electronic materials, particularly those supported by experimental or computational demonstration."

Journal rejection correspondences routinely state that a manuscript "does not align with journal focus" or lacks "clearly validated insights," without citing any specific experimental data that refute the new framework from the manuscript. This violates the ethical standard requiring concrete evidence to justify rejection.

An unspoken rule in academic publishing is that "if you don't have anything nice to say, don't say anything at all" [27]. Many journals nowadays do not allow people criticizing mistakes they have published, such as "Unfortunately, this paper is formatted as a LETTER and ACS AMI no longer publishes letters". This culture stifles critical discourse and discourages the publication of dissenting views, further entrenching mainstream paradigms.

3.3. Cargo Cult Science Practices

By ignoring well-downloaded [15,16] counter-theories and refusing detailed critique, [28] mainstream practitioners exhibit cargo cult traits: [17,18] following the form of scientific discourse while omitting essential integrity [29]—reporting only data that support established theories and neglecting contradictory evidence.

4. Discussion

4.1. Present Peer Review vs. Real Peer Review

Present peer review functions as a gatekeeping mechanism, often safeguarding the reputation of mainstream scientists rather than the reputation of science itself [25,26]. As Weinstein points out, "Peer review is not peer review. It sounds like peer review. It is peer-injunction. It is the ability for your peers to keep the world from learning about your work" [24].

Real peer review, in contrast, begins only after a paper has been published—when the broader scientific community can engage with and challenge the work. This distinction is crucial for understanding how science progresses and why innovative ideas are often suppressed [3].

4.2. Implications for Scientific Progress

When journals demand alignment with prevailing paradigms instead of rigorous mathematical or theoretical validation, innovative theories are suppressed [21]. Genuine progress, as Feynman stressed, depends on utter honesty and reporting all information that could challenge one's conclusions [17].

Journals should serve as platforms for confronting different ideas. They are not achievements evaluation organizations. The value of a journal lies in fostering novelty and stimulating discussion among specialists. Even views that are ultimately proven wrong can have academic value, just as failed experimental results are published for their insights. Journals are not textbooks, and the academic journal readers are experts rather than layman. Correctness of journal articles should be judged by the readers rather by the editors and reviewers. Novelty and inspiring ideas for journal articles are the most important issues [30].

Science does not belong exclusively to mainstream scientists; [31] it is often the minority that pushes science forward [32,33]. The scientific community must remain open to dissenting voices and value both theoretical and experimental research. As the following quote suggests: "They should work together not just to forge a better science, but to counter true pseudoscience: homeopaths and

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psychics, just to mention a couple of obvious examples, keep making tons of money by fooling people, and damaging their physical and mental health. Those are worthy targets of critical analysis and discourse, and it is the moral responsibility of a public intellectual or academic—be they a scientist or a philosopher—to do their best to improve as much as possible the very same society that affords them the luxury of discussing esoteric points of epistemology or fundamental physics" [22].

A hallmark of scientific progress is the ability to change one's mind in light of new evidence. Science improves precisely when individuals and the community are willing to admit they were wrong. This openness to correction is essential for the self-correcting nature of science [3–6].

4.3. The Role of Scientific Integrity

Feynman's principle of not fooling the layman is central to scientific integrity. As he stated, "I would like to add something that's not essential to the science, but something I kind of believe, which is that you should not fool the layman when you're talking as a scientist. ... I'm talking about a specific, extra type of integrity that is not lying, but bending over backwards to show how you're maybe wrong, that you ought to do when acting as a scientist. And this is our responsibility as scientists, certainly to other scientists, and I think to laymen." [17]

4.4. Correct Theories Are Often Rejected

Feynman's example of Mr. Young's rat-maze experiment demonstrates how correct theories and methods can be ignored by the scientific community [17]. "Not paying attention to experiments like that is a characteristic of cargo cult science."

4.5. Reform Recommendations

A. Mandatory Engagement: Authors must cite and discuss newly emerged opposing theories, explaining specific reasons for non-adoption.
B. Evidence-Based Rejection: Reviewers must identify precise evidence or analytical flaws in manuscripts against accepted theories, per Journal of Academic Ethics guidelines.
C. Transparent Correspondence: Rejection letters should include detailed critiques, not generic statements.
D. Post-Publication Review: Encourage open, ongoing evaluation rather than finality at publication.
E. Integrity Training: Incorporate Feynman's principle of leaning over backwards into researcher education.
F. Distinguish Present and Real Peer Review: Recognize that real peer review begins after publication, when the broader scientific community can engage with and challenge the work.

5. Conclusion

The omission of widely known opposing theories, rejection without concrete evidence, and disregard for Feynman's integrity principles constitute cargo cult science in microwave absorption research. Present peer review often serves to protect the reputations of mainstream scientists rather than advance scientific knowledge. Real peer review—where the scientific community at large critically engages with published work—begins only after publication. Upholding ethical standards and fostering honest, comprehensive critique are essential to reviving true scientific innovation and ensuring that mathematical rigor and empirical evidence—not conformity—guide acceptance of new theories. Science thrives on diversity of thought, the courage to admit error, and the continuous challenge of established ideas.

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