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Is psychoanalysis a science?
An answer in light of scientific pluralism

A psicanálise é uma ciência? Uma resposta à luz do pluralismo científico

¿Es el psicoanálisis una ciencia?
Una respuesta a la luz del pluralismo científico

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ABSTRACT:
This paper explores the longstanding debate on whether psychoanalysis qualifies as a science. Grounded in the Brazilian context, where recent publications have revived the debate, I examine the demarcation problem in the philosophy of science, highlighting how traditional criteria for defining scientific knowledge may exclude epistemically fruitful practices, such as psychoanalysis. Drawing on the perspectives of scientific pluralism, I argue for a more inclusive understanding of science, where diverse methods and epistemological approaches are recognized as legitimate contributions to addressing complex phenomena such as mental health. Ultimately, the rigid application of demarcation criteria can obscure the

value of psychoanalysis, whereas scientific pluralism offers a pathway for integrating it into broader scientific discourse.

Keywords: demarcation problem, epistemology, mental health, philosophy of science, psychoanalysis, scientific pluralism, science

RESUMO:
Este texto explora o antigo debate sobre se a psicanálise pode ser considerada uma ciência. Baseado no contexto brasileiro, em que recentes publicações reacenderam o debate, examino o problema da demarcação na filosofia da ciência, destacando como os critérios tradicionais para definir o conhecimento científico podem excluir práticas epistemicamente frutíferas, como a psicanálise. A partir das perspectivas do pluralismo científico, argumento por uma compreensão mais inclusiva da ciência, onde diversos métodos e abordagens epistemológicas são reconhecidos como contribuições legítimas para abordar fenômenos complexos, como a saúde mental. Por fim, defendo que a aplicação rígida dos critérios de demarcação pode obscurecer o valor da psicanálise, enquanto o pluralismo científico oferece um caminho para integrá-la ao discurso científico mais amplo.

Palavras-chave: epistemologia, filosofia da ciência, pluralismo científico, problema da demarcação, psicanálise, saúde mental, ciência

RESUMEN:
Este texto explora el antiguo debate sobre si el psicoanálisis califica como ciencia. Basado en el contexto brasileño, donde publicaciones recientes han reavivado el debate, examino el problema de la demarcación en la filosofía de la ciencia, destacando cómo los criterios tradicionales para definir el conocimiento científico pueden excluir prácticas epistemológicamente fructíferas como el psicoanálisis. A partir de las perspectivas del pluralismo científico, argumento a favor de una comprensión más inclusiva de la ciencia, donde se reconozcan diversos métodos y enfoques epistemológicos como contribuciones legítimas para abordar fenómenos complejos como la salud mental. Finalmente, sostengo que la aplicación rígida de los criterios de demarcación puede oscurecer el valor del psicoanálisis, mientras que el pluralismo científico ofrece un camino para integrarlo en el discurso científico más amplio.

Palabras clave: ciencia, epistemología, filosofía de la ciencia, pluralismo científico, problema de la demarcación, psicoanálisis, salud mental

Introduction

Doubts about the scientific status of psychoanalysis have accompanied its history since Freud's first writing. In Brazil, the publication of the book *Que Bobagem* ("What Nonsense") by Natalia Pasternak and Carlos Orsi [1] reignited these debates, and this played an important role since the book was a response to a period in Brazilian history that was strongly marked by scientific denialism and attacks on science. Of course, the book elicited several responses to the criticism raised.

The question of whether a particular body of knowledge can be considered scientific is both complex and challenging. Philosophers of Science have been grappling with this question for the past 100 years. However, the demarcation problem goes back to Aristotle and remains far from a definitive answer. In this article, I will delve into this question from the Brazilian experience and problematize it in the context of current debates in philosophy, particularly the concept of scientific pluralism.

The problem of demarcation

"Psychoanalysis is not science." This is what I told my students in the Scientific Methodology and Philosophy of Science course in the Biological Sciences course. The class topic was what defines knowledge as scientific and how different forms of knowledge are structured and differentiated. It seems like a simple question, easy to understand. However, the reality is far from trivial.

Larry Laudan [2] stated that the demarcation debate was closed, minimizing the value of plotting one line clear between science and pseudoscience:

> *"In asserting that the problem of demarcation between science and non-science is a pseudo-problem (at least as far as philosophy is concerned), I am manifestly not denying that there are crucial epistemic and methodological questions to be raised about knowledge claims, whether we classify them as scientific or not. Nor, to elaborate on the obvious, am I saying that we are never entitled to argue that a certain piece of science is epistemically warranted and that a certain piece of pseudo-science is not. It remains as important as ever to ask questions like: When is a claim well confirmed? When can we consider a theory as well tested? What characterizes cognitive progress? However, once we have answers to such questions (and we are still a long way from that happy state!), there will be little left to inquire into which is epistemically significant."*

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Even today, although some claim that this debate is obsolete since the contours of science are clearly defined, allowing for the distinction between what is and what is not scientific, I am afraid I have to disagree. More than ever, we must discuss this topic in light of the risks posed by misleading information that, disguised as science, contaminate people's minds.

A quick reflection is sufficient to remind us of the events during the COVID-19 pandemic, the anti-vaccine movements, and the denial of climate change. These movements can negatively affect the lives of millions of people. Care must be taken when labeling a particular form of knowledge as pseudoscience, especially given that this label often carries the connotation of something despicable or invalid. It is also important to clarify that the mere fact of a knowledge system not being scientific does not automatically qualify it as a pseudoscience. It is striking that epistemically corrupted practices, such as climate denialism or anti-vaccine misinformation, are erroneously incorporated into scientific discourse. The opposite danger lies in excluding epistemically fruitful practices, such as indigenous and local knowledge about nature and its conservation [3], often wrongly labeled as pseudoscience.

Why did I begin this text by mentioning my beliefs about psychoanalysis? There are several reasons for this finding. The first, and perhaps the one that disturbs me the most, is that I threw a claim to my students without the necessary knowledge to problematize or explore it further. Second, by expanding the debate on the growth of pseudoscientific claims, psychoanalysis has once again become the target of criticism regarding its status as a science.

In the journal *Questão de Ciência,* Jan Leonardi [4] recently criticized the movement to legitimize psychoanalysis via neuroscience. For him, the arguments that neuroscience findings confirm psychoanalytic concepts are mistaken. I confess that I tend to agree with some of his comments. Leonardi ends his text with the following statement:

> *"Science goes far beyond simple superficial correlations between empirical findings and conceptual assumptions; it demands methodological rigor, which includes the clear definition of concepts, the formulation of testable hypotheses, the collection and analysis of empirical data, the replicability of results, and the ability to predict and explain phenomena consistently."*

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In this passage, Leonardi established clear criteria to demarcate what constitutes scientific practice. Therefore, such requirements must be met for something to aspire to the status of science; in his view, psychoanalysis does not meet these requirements. I will return to this point later, but I will say immediately that there is nothing new in Leonardi's arguments. Before him, others had already defended "similar" demarcation criteria, such as the renowned philosopher of science Karl Popper. However, it must be clarified that Leonardi's list offers a broader list of criteria for demarcating science. At the same time, Popper focuses exclusively on the ability of a hypothesis to be falsified as the main criterion for differentiating it from a pseudoscience. Undoubtedly, Popper's proposals for establishing demarcation criteria continue to influence our view of science. However, it is worth considering whether these criteria can be applied universally and indisputably to all areas of scientific knowledge.

Let us consider an example to assess whether demarcation criteria can be applied to all areas. One of the most widely accepted hypotheses is that dinosaurs went extinct through a cataclysmic event of planetary proportions: the collision of a gigantic meteor, which triggered a series of catastrophic events culminating at the end of an extraordinary form of life (see [5]). However, how do scientists conclude that this event was important for the disappearance of T-Rex? We do not have machines to go back in time, as seen in science fiction, and we cannot test this hypothesis in the laboratory by replicating a meteor collision on a large scale. In addition to being unfeasible, such an experiment would be unethical because replicating it under real conditions could trigger new mass extinction events.

How do scientists support this hypothesis? First, we know that dinosaurs existed, as evidenced by fossils found all over the world. Geological data indicate the approximate time of their extinction, and there is consistent evidence of meteorite collisions such as giant craters and the presence of iridium, an element rare on Earth but abundant in meteors. Collecting this evidence over the decades by different researchers and in different locations provides a solid basis for this hypothesis. Thus, there is a consensus among scientists that this is a robust hypothesis in paleontology.

Looking critically, does this hypothesis meet the demarcation criteria discussed earlier? Although we cannot test this experimentally, which creates some uncertainty, the hypothesis is supported by evidence collected from diverse sources and its ability to consistently explain

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observed phenomena. This gives the hypothesis scientific respectability even without direct experimentation. Thus, despite experimental challenges, fields such as paleontology can formulate robust hypotheses based on empirical data. Therefore, it is clear that science does not always share the same rigid criteria for validation, which challenges the view of science as a monolithic block of universal criteria.

The criteria listed by Leonardi and the need for falsifiability, as understood by philosopher Karl Popper, support the arguments that seek to position psychoanalysis as a pseudoscience. However, not even the falsifiability criterion has been agreed upon by philosophers of science. Ludwig et al. [6] emphasized that the demarcation frameworks developed in the 20th-century philosophy of science often conflict with the complexities inherent in certain research fields.

Demarcation criteria, such as those proposed by Popper, can be problematic because their application may lead to misleading conclusions on pragmatic, epistemological, and political levels. Taking indigenous knowledge as a reference, Ludwig et al. [6] problematize the issue:

> *"Demarcation exercises foster political misuse beyond merely pragmatic or epistemological misunderstandings. Philosophical debates about the demarcation problem often remain ambiguous as to whether they aim to distinguish "science" from "nonscience" (which may include legitimate nonscientific knowledge) or from "pseudoscience" (which excludes claims of epistemic legitimacy)."*

Scientific pluralism: A solution to the challenges of demarcating science?

If psychoanalysis did not meet the previous criteria, would its way of producing and validating knowledge meet another way of thinking about science? It is possible to think from a pluralistic science perspective. This is reflected in the texts of philosophers David Ludwig and Stéphanie Ruphy [7]. Scientific pluralism is a school of thought that proposes accepting and appreciating the diversity of methods, theories, and approaches in science. Instead of seeking a monolithic and unified vision, pluralism suggests that diversity is an intrinsic and enriching characteristic of scientific practices. This view opposes the traditional epistemological "monism," which defends the idea that there is only one correct way to investigate and interpret natural phenomena [7].

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The roots of scientific pluralism can be traced back to philosophical debates in the early 20th century that questioned the ability of a single theory or method to represent the complexity of the natural world. Philosophers such as Paul Feyerabend [8] and Thomas Kuhn [9] were crucial in criticizing the fact that science advances linearly and cumulatively, with one dominant theory gradually replacing another.

In his work *Against Method*, Feyerabend [8] argued that no fixed scientific method can be universally applied. He argued that science succeeds because of its flexibility and the variety of approaches it adopts. On the other hand, Kuhn introduced the idea of "scientific paradigms," showing how different scientific communities can operate under different sets of assumptions and methods. He explained the scientific revolutions that occur when another paradigm replaces one. This philosophical background opens a space for scientific pluralism, a view that recognizes the validity of different methods, theories, and practices, each of which can be effective in solving specific problems or understanding particular aspects of the world.

However, scientific pluralism does not mean that all theories are equally correct or that every approach has equal value. Rather, it suggests that the complexity of the natural world requires that multiple perspectives be properly understood. This view is particularly relevant in interdisciplinary fields, such as biology, psychology, and sociology, where the phenomena under study can be approached in multiple ways without any single approach exhausting the totality of understanding. In epistemological terms, scientific pluralism defends the idea that different theories and models can coexist because they capture different aspects of complex reality.

Despite its advantages, scientific pluralism faces challenges and criticism. One main argument against pluralism is the risk of relativism. If all theories and approaches are equally valid, how can we determine the best or most accurate in a given context? How can legitimate scientific knowledge be distinguished from claims that may endanger human safety and health? This question raises concerns that pluralism could lead to the acceptance of pseudoscientific or unfounded theories, as the line between legitimate and illegitimate sciences may become blurred.

Social and political issues are also involved. Scientific pluralism may face resistance within certain institutions or disciplines that value monism and

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the search for a "grand unifying theory." In many cases, acceptance of a pluralistic approach requires institutional and cultural changes that may be difficult to implement. From a pluralistic perspective, science recognizes that scientific rigor can be achieved in various ways and that methodological and theoretical diversity is a source of strength, not weakness.

The defense of psychoanalysis

Oliveira [10] argued that the criterion of psychoanalysis is based on the adequacy of the patient's singular experience rather than a direct correspondence with objective reality, as proposed by a referential theory of meaning. According to this referentialist view, it is possible to associate each clinical case with a specific theoretical proposition, confirming or refuting the theory. However, Oliveira emphasizes that each psychoanalytic concept does not need to have a clinical correlation applicable to all cases or suffering. The central point is how the patient deals with the narrative of his desire based on clinical interventions and psychoanalytic theories, and not the exact correspondence between theoretical propositions and events in the patient's psychic life.

Other authors [11, 12] share this line of argument, arguing that the psychoanalytic project moves away from science based on the traditional criteria of experimentation and refutability. However, by stating that psychoanalysis does not intend to be scientific,*this does not prevent it from engaging in dialogue with the human sciences and some sectors of neuroscience*" [10], epistemological and practical problems arise that must be addressed.

This ambiguity can create obstacles in the recognition of psychoanalysis as a valid form of clinical intervention. On the one hand, psychoanalysis does not commit to following the empirical rigor of traditional sciences; on the other, its concepts and practices aim to deal with "symptoms" such as anxiety and depression—the same ones that are also treated by psychiatry and psychology, areas that operate under more strictly scientific criteria. This raises the following question: How can we measure the efficacy and legitimacy of psychoanalysis without resorting to verification methods typical of science? This difficulty can limit recognition, confining it to the speculative or philosophical domains.

One could argue that measuring efficacy in psychoanalysis is unnecessary, as it is in other sciences. However, when psychoanalysis enters the debate

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on mental health and shares space with areas such as psychology and psychiatry, which depend on empirical evidence to validate their practices, would it be possible to ignore the need for evaluation? After all, when competing for the treatment of symptoms that are equally addressed in these areas, psychoanalysis inevitably enters a field of competition. In this sense, when the defense of psychoanalysis starts from its attempt to accommodate evidence-based criteria, would it not claim a position within this same epistemological space?

One thing seems clear: psychoanalysis is a plural field that accommodates different conceptions about its status today. If we turn to the perspective of scientific pluralism, we can affirm whether psychoanalysis is a science or not, depending on the nature of its claims and intended purpose. In other words, its classification as science or non-scientific would depend on the context and epistemic expectations that apply to it, considering its different approaches and purposes.

In addition, when considering the inclusion of different forms of knowledge to address complex issues, such as the use of psychoanalysis in mental health, three possibilities can be considered [13]: **(1)** excluding this type of knowledge to not meet the strict criteria of science, **(2)** broadening the definition of science to include it, or **(3)** in the pluralist view, recognizing that complex practical challenges, such as mental health, can benefit from these perspectives regardless of whether they are labeled as science.

It is essential to acknowledge that many debates surrounding this topic are superficial, at times aggressive, and often radicalized by a narrow view of science and philosophy. Whether considered science or not, psychoanalysis represents a rich, diverse, and intellectually fruitful tradition. Discussing what qualifies as science is a philosophical debate that cannot be reduced to a mere clash of opinions.

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References

1. Pasternak N, Orsi C. Que bobagem!: Pseudociências e outros absurdos que não merecem ser levados a sério. São Paulo: Contexto; 2023

2. Laudan L. The demise of the demarcation problem. In: Cohen S, Laudan L, editors. Physics, Philosophy and Psychoanalysis. Dordrecht: D. Reidel Publishing Company; 1983. p.111-127 https://doi.org/10.1007/978-94-009-7055-7_6

3. Albuquerque UP, Ludwig D, Feitosa IS, Moura JMB, Gonçalves PHS, Silva RH, Silva TC, Gonçalves-Souza T, Ferreira Júnior WS. Integrating traditional ecological knowledge into academic research at local and global scales. Reg Environ Change. 2021;21(1):1-11. https://doi.org/10.1007/s10113-021-01774-2

4. Leonardi J. A neurociência confirma a psicanálise? Revista Questão de Ciência. 2024. https://www.revistaquestaodeciencia.com.br/artigo/2024/08/28/neurociencia-confirma-psicanalise

5. Archibald JD, Fastovsky DE. (2012). Dinosaur extinction. In: Weishampel D, editor. The Dinosauria. Oakland, CA: University of California Press; 2012. https://doi.org/10.1525/california/9780520242098.003.0033

6. Ludwig D, El-Hani CN, Gatti F, Kendig c, Kramm M, Neco L, Nieves Delgado A, Poliseli L, Renck V, Ressiore CA, Galindo LR, Rickard TL, De La Rosa G, Turska JJ, Vergara-Silva F, Wilson RA Transdisciplinary philosophy of science: meeting the challenge of indigenous expertise. Philosophy of Science. 2023:1-11. https://doi.org/10.1017/psa.2023.127

7. Ludwig D, Ruphy S. Scientific pluralism. In: Zalta EN,Nodelman U, editors. The Stanford Encyclopedia of Philosophy (Fall 2024 Edition); 2024. Retrieved from: https://plato.stanford.edu/archives/fall2024/entries/scientific-pluralism/

8. Feyerabend P. Against method. New York: New Left Books; 1975.

9. Kuhn TS. The structure of scientific revolutions. Chicago: University of Chicago Press; 1962.

10. Oliveira ÉAM. Por que a psicanálise não é uma pseudociência? Sobre as novas bases epistemológicas da psicanálise. Debates em Psiquiatria. 2022;12:1-19. https://revistardp.org.br/revista/article/view/283

11. Medeiros RHA. A psicanálise não é uma ciência. Mas, quem se importa? Psicologia: Ciência e Profissão. 1998;18(3):22-27. https://doi.org/10.1590/S1414989319980003000004

12. Prudente RCAC, Ribeiro MAC. Psicanálise e ciência. Psicologia: Ciência e Profissão. 2005;25(1):58–69. https://doi.org/10.1590/S1414989320050001000006

13. Ludwig D. Personal communication. 2024.