

Translation into English: [Chapter 2 - Catalogue of Errors for Both Theories of Relativity](#)

from the German documentation of G.O. Mueller

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V: Motives for Generation and Preservation / Error No. 5

Renunciation of a "physical theory of nature" and adoption of a "mathematical theory of nature"

If a completely untenable scientific theory can be enforced and maintained, the motives of generation and enforcement must be irrational.

In his lecture of 1955 on the history of the natural sciences G. B. Brown (1956) distinguishes since antiquity between three totally different approaches: a "physical theory of Nature", a "mathematical theory" and a "functional theory", and he also makes reference to a study by F. S. C. Northrop from 1931. In the middle of the 19th century the "mathematical theory" wins the upper hand. This maintains "that the phenomena may be explained by equations", whereby he cites Airy (1846). The "physical theory" - e.g. Newton's - by contrast, aims at explaining the phenomena in terms of physical causes.

Albert Einstein - and with him Eddington and Jeans - want to work solely with the readings of measuring instruments and with mathematical equations that are linked to the measurements.

Brown (p. 625): "But no mention was made of any forces which would cause the instruments to read differently, the clocks to go slow, and so on, and we were left once more with nothing but mathematical relations together with pseudo-epistemology, involving a lot of hypothetical observers attached to anything from an electron to a galaxy." Albert Einstein makes only one regulation, that all arbitrarily moving observers must measure the same speed of light. The measurement results cannot however be prescribed in advance, but must be the results of real observations and measurements (p. 625).

Not the use of the mathematics but the waiving of the explanation by causes is an irrational decision that led to the theories of Albert Einstein. The declared apologist H. Margenau wrote in his contribution to the compilation "Albert Einstein: philosopherscientist" of 1949 (cited from the 1997 edition, pp 245-246) the astonishing confession as to the two theories: "The physicist is impressed not solely by its far flung empirical verifications, but above all by the intrinsic beauty of its conception which predisposes the discriminating mind for acceptance even if there were no experimental evidence for the theory at all."

A clearer and more obvious confirmation of the diagnosis made by Brown can hardly be given: even if there were no experimental evidence at all. As the criticism has shown, this situation had already existed in 1920. Empirical findings cannot help against irrationality, and their absence does not disturb either.

What Brown refers to as the "mathematical theory of nature" is more generally criticized as "mathematicism", which means the replacement of a physics based on empiricism and causal explanations to one based on maths. The fact that this is no illusion of the critics but is indeed happily

propagated by the mathematicians is shown in the many notable quotes from the writings of Eddington and Jeans, which one can also read by, for example, L. S. Stebbing (1937) and Brown (1956).

Stebbing, L. Susan: Philosophy and the physicists. Unaltered republication of the 1st Dover ed. 1958. New York: Dover Publ., 1960. 295 pages. First publ. in 1937. Lit.-Angaben bis 1936. – Albert Einstein - philosopher-scientist / ed. by Paul Arthur Schilpp. 3rd ed., 7th reprint. La Salle, Illinois: Open Court, 1997. 781 pages. (The library of living philosophers. 7.) - Brown, George Burniston: Have we abandoned the physical theory of nature? : substance of a lecture, Royal Institute of Philosophy, Oct. 1955. In: Science progress. 44. 1956, No. 176, pp 619-634.