

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

from the German documentation of G.O. Mueller

"On the Absolute Magnitude of the Special Theory of Relativity - A Documentary Thought Experiment on 95 Years of Criticism (1908-2003) with Proof of 3789 Critical Works" - Text Version 2.1 - June 2004
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E: Motion / Error No. 12

Length contraction is introduced with contradictory epistemological status (appearance, reality)

In 1905 Albert Einstein introduced length contraction with clearly contradictory statements; with a real version and an apparent version.

The real version can be found on p. 896. The "generally used kinematics" (whereby he means the Newtonian) are thereby characterized such that they assume, "that a moving rigid body ... is fully replaceable, in geometric terms, by the same body at rest in a specific location." Albert Einstein regarded this identity of the geometry of the body in Newtonian kinematics in all its various states of motion as being erroneous and he wishes to dispute it with his theory of kinematics. In the STR kinematics the body is said to lose this geometrical identity because, due to motion or to being at rest, a real change in the rigid body is said to occur. No mention is made here of the principle of relativity.

An apparent version can be found on p. 903: "A rigid body, which has the shape of a round sphere when measured at rest, has, when in motion - as observed from the system at rest - the shape of a rotating ellipsoid ..." In the next paragraph but one the reciprocity is explicitly established.

This contradiction extends throughout the entire world of relativity. Each author can choose an alternative to suit. As long as this contradiction remains unrecognized and unresolved by the world of relativity the alleged length contraction is valid for the critic in neither of the two versions. It is not the task of the critic - and it is also not possible - to help the relativists to develop a consistent theory from one the frailty of which is obvious. Nor is the critic obliged to solicitously disprove both versions.

The critic has nevertheless already done both. He has proven that the great luminaries of the world of relativity do not even agree on whether a rigid body exists at all in the STR (cf. Error E 3). Real contraction in one system only contradicts the principle of relativity (cf. Error E 2). Real contraction in both systems would raise the question for both systems as to why, within the system, objects shorten and clocks run more slowly, merely because another inertial system is in motion relative to it (cf. Error E 2). In the case of the necessary simultaneous observations of a multitude of systems, the problems and the errors multiply (cf. Error E 8). And length contraction has not been observed in either of the two versions (cf. Error E 11). The theory of length contraction cannot be physically saved, whether as an appearance or as a reality.

Whereas AE1905 presents time dilation much more decisively as a real effect (p. 904: the two synchronized clocks, one of which is in relative motion, are in the end

no longer synchronized), his claim of length contraction is clearly contradictory. The relativistic authors, if they no longer know how best to respond, can always duck out by resorting to the possibility of apparent contraction.

The best example is given by Max Born (1920, p. 183), and retained in all further editions. He holds the real-or-apparent debate (what is the true length of the body?) for an annoying error (as though it was not prompted by Albert Einstein himself) and believes he can solve the problem with his proposal; it is like a sausage that one can cut at a variety of angles, thereby obtaining differently large cut areas each time. No cut is preferred or more real than the others. And the matter is now clear, at least for Max Born.

AE 1905. - Born, Max: Die Relativitätstheorie Einsteins und ihre physikalischen Grundlagen : gemeinverständlich dargestellt. Berlin Springer, 1920. 242 pages (Naturwissenschaftliche Monographien und Lehrbücher. 3.)