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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G: Minkowski's World / Error No. 2

Space (3 space coordinates) and time (1 time coordinate) are said to preserve their independence only "in a sort of union"

In the first paragraph of his lecture (1908, p. 54) Minkowski says "only another type of union" of space and time can "preserve independence". This idea of a union is typically intensified by most relativists until some form of identity is reached. The 3 space coordinates and one time coordinate are designated as equal-ranking or as of equal value. Some of these authors maintain, however, at another place in the same text, and despite the supposed "union", the known distinction between space and time. So on this issue, too, there are contradictions.

Minkowski showed them how. Just one page further (p. 55) he starts to retreat: "I still respect the dogma that has it that space and time each have an independent meaning." What then does the union mean? This is a revocation, though one that is limited, since one does not know how much longer he will continue to respect, and the devaluation as a "dogma" is already a signal that the independence of space and time is not his heart's desire.

The criticism of the equation and identification of space coordinates and time coordinates was already massively advanced during the first phase of criticism (1909-1914), e.g. Paul Bernays (1911); all equation and union is erroneous, because space is isotropic, whereas time has a direction.

Bernays' argumentation is that no universal analogy exists between space and time. In space all directions are equal, whereas time has a marked direction. Therefore both are not equal (p. 477). - The sequences of time correspond to causal relationships, whereas spatial vicinity corresponds to no physical linking (pp 477-478). - The theory provides no new findings as to the relationship of space and time (p. 478). - Bernays' arguments are raised repeatedly in the period following by the critics and could never be invalidated by the relativists.

The relativists demonstrate, by their internal contradictions, that they always want to leave themselves a way out. If things come to the worst, they are not responsible. Their pendulum swinging between "union" and "independence" has two great advantages for the relativists. Only with the "union" can they enter the fictitious paradise of Minkowski's world with its four dimensions and come directly to the coordinates to be handled, in which everything can be mathematically proven and the great freedom from the constraints of the physical world rules, because it all just takes place on millimetre paper. On the way back to the world of three-dimensional reality they would like to sell their wonderful results of four dimensionality as something completely normal and as mathematically secured findings. As to the irrelevance of this import in three dimensionality, here they deceive themselves.

Albert Einstein's method of building clear contradictions into his text of 1905 and in this way to protect his constructions against criticism by disinformation, is also adopted by Minkowski. Once only the union of space and time, then again their independence. In this way one has occupied all positions and is always right.

Minkowski, Hermann: Raum und Zeit : Lecture, 80. Naturforscher-Vers., Köln 1908, 21st Sept. In: Naturforschende Gesellschaft, Cöln. Verhandlungen. 80. 1909, pp 4-9. Also in: Physikalische Zeitschrift. 20. 1909, pp 104-111. Reprinted in: Das Relativitätsprinzip. Lorentz, Einstein, Minkowski. 6th edition. 1958, pp 54-66. - Bernays, Paul: Über die Bedenklichkeiten der neueren Relativitätstheorie : (Revision of a lecture given in June 1911 within the "Fries'schen Schule"). In: Abhandlungen der Fries'schen Schule. Vol. 4, Issue 3. 1914, pp 457-482.