Ernst Gehrcke

Cultural Studies on Einstein's Relativity

Critique of the Theory of Relativity

The Theory of Relativity: A Scientific Mass Suggestion

GogLiB

ISBN ebook: 9788897527596

First English edition: May 2022 (A)

www.goglib.com

Contents

THE THEORY OF RELATIVITY: A SCIENTIFIC MASS SUGGESTION (1924)

BACK COVER

Foreword from the Editor

Ernest Gehrcke and relativity theory

Why study Einstein's relativity from a cultural point of view—the theory as well as the universal consensus it receives? Is there any reason to look at this phenomenon, and determine its characteristics, as an element of the wardrobe from which humanity draws the disguises it needs to give itself an acceptable image of itself, and escape the contingency of existence? On the one hand, every human phenomenon can be looked at from this point of view, but here we are faced with something special: the American magazine *Time*, which every December dedicates a cover to the "person of the year", on the latest issue in 1999 named the "person of the century", and who was this person, if not Einstein? From 1919 in a sensational way, but the signs of the phenomenon began to be observed already around 1910, the author of a theory that is almost impossible to make understandable to those who are not specialists enjoys generalized consensus among specialists and a popularity by the public of the whole world which has remained unchanged until the present. No one said it better than Chaplin, once he was acclaimed in public in the company of Einstein: "They cheer me because they all understand me, and they cheer you because no one understands you."

From a quantitative point of view, the story of Einstein's popularity is remarkable for its extension (the whole world was quickly conquered by him, in the years of the first post-war period, and the resonance of the theory contributed, among other things, to appeasing the anti-German hatred of the winners), as for the duration: one hundred years have passed, and relativity is still a fact of the present, with no change in the cultural paradigm in sight, no sign that the phenomenon could be perceived as a characteristic of an era belonging to our past. From the qualitative point of view, the singularity of the phenomenon is obvious: two theories, one (the special one) concerning microscopic discrepancies of the measures of time and space with respect to previous physics and immediate expectations, the other (the general one) concerning relations also not foreseen by classical physics between gravity and accelerations, are both the object of unanimous consensus by the few specialists, and equally unanimous by the world, which has very little hope of understanding the logical structure of the two theories, but places trust in the fact that they are able to reveal an unexpected and

unprecedented power of human reason, so that it is legitimate to think, at least as a first approximation, that the consensus of each comes from the confused idea that through the acceptance of that theory each one of us expresses the highest potential of him or herself, and participates a little in the greatness of Einstein and the maximum potential of the human species. Now, on relativity as a scientific phenomenon the bibliography is exterminated, both the strictly physical one and that of the epistemological legitimations of the non-immediate aspects of the theory, but also from the cultural point of view it is possible to assemble a collection of contributions of no small extent: a good point starting point for all references is the widespread, complete and fairly recent biography of Walter Isaacson, *Einstein: his life and universe*, published in 2007. This book is the first that I recommend reading as a condition for understanding Gehrcke's writings, along with a few others that I will mention below. Isaacson's biography tells us about the evolution of Einstein's public notoriety and at the same time the attitude of Einstein as a man in the face of having become a pop icon: an experience that did not displease him at all, sometimes causing perplexity of his advisors. Therefore Isaacson's book is valid as a general description of the cultural context, and through the biography it gives us important data regarding the mechanism of the leadership relationship that was established between Einstein and (world) public opinion, to which Einstein's individuality was able to satisfy certain emotional expectations: these expectations are not clear, and a cultural study of the phenomenon could really help to determine them a little better. Isaacson also informs us about the misfortunes of Einstein's private life, but this aspect is probably irrelevant: the whole public story could have unfolded and could be told in the same way even if Einstein's family vicissitudes had been different, and therefore we will never talk about it again, after this hint.

The problem is therefore: why does Einstein's relativity exercise a universal fascination, also where knowledge of it is practically nil? The little-known contemporary Gehrcke, if we have the patience to follow him, could lead the way to understand something of this. Ernst Gehrcke (1878-1960) was an academic physicist, a good connoisseur of Kant's philosophy (he was not even a neo-Kantian, but really an orthodox Kantian), a technologist of electromagnetism, inventor of instruments for measuring interference, an editor of monumental manuals on optics and radiology, an expert in

palaeontology and prehistory (some photographs available on the Internet show him intent on ordering geological samples and lithic finds), and in addition to all this he was the first to think that it was necessary to study relativity from a cultural point of view. In this book we will read his attempts in this direction, which began in 1912, when general relativity did not exist and special relativity had inflamed with enthusiasm some students and physicists of the new generation, in Germany and beyond. At first glance, the results he obtained are modest: neither Gehrcke had the tools for this study, nor probably at the time anyone would have been ripe to tackle it. His writings on the subject extend between 1911 and 1924, the year in which they appeared collected in the two volumes translated here, and at first glance their characteristic is that in them Gehrcke, who was only one year older than Einstein, but mentally belonged to the previous generation, opposed relativity (both special and general) with obsolete epistemological objections. Since the objections seemed decisive and necessary to him, Gehrcke formed the conviction that the consensus to Einstein belonged entirely to the domain of the irrational with the typical quality of the era of mass phenomena, and tried to determine it by means of the category of "mass suggestion". Writing in the early 1920s, it is not surprising that the concept of "mass" was the only key he could use: the small bibliography at the end of the second 1924 volume lists six not surprising titles, in which lay what Gehrcke knew about collective phenomena, among which we find the well known *Psychologie des foules* by Le Bon, forefather of the twentieth-century studies of collective phenomena, and the equally famous and very recent *Massenpsychologie und Ich-Analyse* by Freud. The first difficulty we must notice is that Gehrcke, now conceding by hypothesis that his total denial of the plausibility of relativity could have any basis, missed one thing that should jump to his eye: given the consensus of the specialists to Einstein, he should not have spoken of a "mass suggestion", but on the contrary first of all of an "elite suggestion", from which the mass suggestion could then derive as a consequence and as a by-product. This makes us touch on a general question: that so much of the culture of the twentieth century has addressed itself as to determine the phenomena and behaviour of the "mass" as inadequate and subordinate, as subcultures, when instead it is the human subject in general, mass as well as elite, *low*, *middle* and *highbrow*, individual and collective, which in the contemporary era

is qualified by the inability to live up to the potential of the culture of its time, because subjectively it is not able to assimilate and master its complexity. If Gehrcke were right, the book we have here in hand could proudly bear the title of *Elitensuggestion der Relativitätstheorie*, but instead in this volume we find two books with a less prudent title, first the collection of physical articles that Gehrcke called "Critique of the Theory of Relativity", *Kritik der Relativitätstheorie*, with an obvious (and somewhat naive) reference to the Kantian *Kritik* of Pure Reason, and second "Mass Suggestion", *Massensuggestion der Relativitätstheorie*. These two volumes, completely opposed to the already consolidated mainstream of the consensus on relativity, which from then on gave rise to a constant spontaneous and automatic marginalization of critical positions within academic structures, appeared in 1924 published by a minor publisher and with poor paper quality (given the post-war restrictions), when instead in 1921 an epistemological contribution by Gehrcke, also of Kantian intonation, *Physik und Erkenntnistheorie*, had been published in elegant format by the first-rate publisher Teubner of Leipzig in the company of a lot of academic literature, and so in general the other books of Gehrcke. After 1924, and after cultivating the erroneous certainty that the consensus to relativity had been a transient human oddity of the years around the great war, Gehrcke continued his activity as a technologist and ceased to express himself on relativity, only to later consider phenomena of the same type the collective credulity towards Einstein and towards Hitler[1]. In 1945 he remained in the German Democratic Republic (DDR), and became the director of a department in the University of Jena and in the bureau of weights and measures. It should be noted that although after 1924 his writings on relativity no longer had access to academic publication, this did not mean that Gehrcke's activity in his specialist field was damaged; simply, objections to relativity became a taboo requiring silence, and the same still happens today.

Reading just the second book of the collection, Gehrcke's *Massensuggestion*, would bear little fruit: there readers would only find a collection of curious information arranged following a rather elementary chronological thread. An inner vicissitude of a

[1] [Wazeck, *Einstein's Opponents,* p. 300.]

completely different interest, on the other hand, is that which readers can experience by entering into Gehrcke's brain and making themselves able to understand the meaning of the objections expressed in his physical articles, distinguishing in them what appeals to the epistemological habits of the nineteenth-century generation of electromagnetism and what instead invokes principles of logical coherence of general value. This is the purpose of this book: to lead its readers to be able to compare the mental horizon of the antiquated Gehrcke with that of the very modern Einstein, and perhaps begin to see the story of their conflict from a historical perspective. To go in this direction, the notions of this introduction are necessary, together with the clarifications that we will then give gradually commenting on Gehrcke's text.

Special relativity before Einstein

When Gehrcke wrote, he was addressing both physicists and the contemporary general public.

... End of Preview ...

Back Cover

Why study Einstein's relativity from a cultural point of view—the theory as well as the universal consensus it receives? On the one hand, every human phenomenon can be looked at from this point of view, but here we are faced with something special: the American magazine *Time*, which every December dedicates a cover to the "person of the year", on the latest issue in 1999 named the "person of the century", and who was this person, if not Einstein? From 1919 in a sensational way, but the signs of the phenomenon began to be observed already around 1910, the author of a theory that is almost impossible to make understandable to those who are not specialists enjoys generalized consensus among specialists and a popularity by the public of the whole world which has remained unchanged until the present. No one expressed this better than Chaplin, once he was acclaimed in public in the company of Einstein: "They cheer me because they all understand me, and they cheer you because no one understands you."

The little-known contemporary Gehrcke, if we have the patience to follow him, could lead the way to understand something of this. Ernst Gehrcke (1878-1960) was an academic physicist, a good connoisseur of Kant's philosophy, a technologist of electromagnetism, inventor of instruments for measuring interference, an editor of monumental manuals on optics and radiology, an expert in palaeontology and prehistory (some photographs available on the Internet show him intent on ordering geological samples and lithic finds), and in addition to all this he was the first to think that it was necessary to study relativity from a cultural point of view. In this book we will read his attempts in this direction, which began in 1912, when general relativity did not yet exist, but special relativity had already inflamed with enthusiasm some students and physicists of the new generation, in Germany and beyond.

Ernst Gehrcke

Ernst Gehrcke (1878-1960) was a German experimental physicist. He was director of the optical department at the Reich Physical and Technical Institute and a professor at the University of Berlin. He developed the Lummer–Gehrcke method in interferometry and the multiplex interferometric spectroscope for precision resolution of

spectral-line structures. After World War II, he lived in the German Democratic Republic (DDR), and become the director of the Institute for Physiological Optics at the University of Jena and of the optical department of the (East) German Office for Weights and Measures.