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Articles

Fleck: The Forgotten Ancestor

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Abstract:

On at least two occasions, Thomas Kuhn referred to Ludwik Fleck. He did it in the Preface to *The Structure of Scientific Revolutions*, and years later in the introduction to the English translation of Fleck's work. On the first occasion, he states that Fleck "*anticipated many of my own ideas*", but he did not specify which. On the second occasion – although much more specific – he still is not very abundant. If we read Fleck's work, we will notice that this influence is greater than we expect from these two quotations. In this article I intend to rescue the historical memory of Fleck's conception of scientific knowledge. Fleck influenced not only Kuhn, but also a vast current that thinks that science does not consist of isolated theories, but of structures that evolve over long historical periods, termed paradigms, research programs, traditions, Gestalten, or structures. After synthesizing the main points of Fleck epistemology, I will reconstruct his thought collective, considering – in a circular argument – he had a philosophical environment in which he developed his research, a community that guided it.

Keywords: Thomas Kuhn; Ludwik Fleck; Thought style; Thought collective; Epistemology; Scientific facts; Wölfflin

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Introduction

Fleck's principal contributions are the concepts of thought collective (*Denkkollektiv*) and thought style (*Denkstil*). For Fleck, scientific facts are socially constructed within a thought collective that shares a common thought style. The emergence and crystallization of theoretical knowledge and its material facts is a social process in which the collective considers it final form as an example to be followed. Kuhn's paradigm strongly recalls Fleck's formulations: it rules scientific practice and determines what questions can be considered legitimate and which not. As thought styles, Kuhn's perception is guided by a specific way of seeing termed Gestalt. Not all are coincidences in their epistemological conceptions. There remain crucial differences. Fleck's emphasis stays closer to the social and historical interconnections of factual construction, while Kuhn develops a model of revolutions in scientific knowledge, when a paradigm is replaced by another, immensurable with the latter.

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Neo-Positivism: A Denied Community

I shall refer to a connection unthought by Schäfer and Schnelle, which thinks Fleck as an adversary of neo-positivism, writing that he is "against the conception of science in the Vienna Circle" ("Introduction" to Fleck [1935] 1986, pp. 9-10).

This enmity is unlikely if we consider that Fleck gave in 1933 the manuscript of his book to Moritz Schlick, who sent it to Springer to be published in the collection "Writings on the Scientific Conception of the World," edited by him and Philipp Frank. Unfortunately, Springer decided not to publish it as Schick wished (Stadler 1997, 60, n. 54)

Those that still believe in the myth of a neo-positivism does not interest in the social and historical aspects of science, should remember that in the first issue of *Erkenntnis*, the periodical publication of the Vienna Circle, Otto Neurath expresses, in a way very close to Fleck, "Our thought is a tool, it depends on social and historical relations. This should never be forgotten" (Neurath 1930/31, p. 123).

It is also necessary to remember that Leon Chwistek (1936), Fleck's friend and one of the few commentators on his work, and Kazimierz Ajdukiewickz –a supporter of radical conventionalism– to whom Fleck dedicates his article "Scientific Observation and Perception in General" together with his teacher Kazimierz Twardowski, were members of the Lwów-Warsaw school of philosophy, closely related to the Vienna Circle.

No wonder, then, that Hans Reichenbach, who emigrated in 1933 to Istanbul, cited Fleck's work as early as 1938 (Experience and Prediction), where Thomas Kuhn found it years later and read Fleck's *Entstehung und Entwicklung einer wissenschaftlichen Tatsache* (Basel, 1935).

It is curious that Fleck is described as an enemy of neo-positivism, with the only evidence being a footnote of an article in which two expressions criticize, in the first place, Carnap's *Aufbau*, who is qualified as "perhaps the last serious attempt to build the world from given". The following comment is his rejection of the "absolute character of protocol statements", hoping that they can "discover the social conditionality of thinking" (Fleck [1935] 1986, 138, n. 3).

Those who may have been part of his thought collective -the philosophers of the Vienna Circle- were swept away by the winds of history, like Fleck himself; dead Schlick, distanced from Europe the other members, he lost contact in the post-war period with the philosophical community in which Fleck had found common interests, even when he disagreed with them on a number of points. It seems a compensation of the history that the work of Fleck, in its English translation, was edited by the publishing house that published the neo-positivist collection of the *Encyclopedia of Unified Science*, unthoughtfully fulfilling Schlick's request.

There is likely to be an influence not mentioned above, which comes not from the philosophy of science but from that of art.

Long time ago, in a lecture in the First Latin American Meeting of philosophy of science in Puebla, Mexico, 1982, I exposed that the theory of the history of art by Heinrich Wölfflin (1915) and the conception of the history of science by Thomas S. Kuhn were so similar that it was possible to think that they belonged to the same family of theories.

Briefly, Wölfflin argues that what must be studied is not artists and their works, but the evolution of a form of seeing and making art, which he calls "*style*", that establishes what is possible to do in a long historical period, that decays and is replaced by another style, with a different "optics".

If we consider that Fleck's conception of science is similar to Kuhn's and Wölfflin's, it is amazing that three different philosophers developed similar insights about science, art, and history, not knowing each other. Wölfflin published his work in 1915, so it could be known

by Fleck, whose father owned a bookstore and possibly had access to literature on the theory and history of art.

On the other hand, there is no evidence that Kuhn knew Wölfflin's theory. If this is so, Fleck's thought community, including Wölfflin's theory, and his still active descendants, begins in the first decades of the twentieth century and continues up to nowadays.

Kuhn's Late Fleckian Developments

It is not our intention to follow in detail the evolutions and changes of Thomas Kuhn, following Ludwik Fleck's conceptions.

Perhaps a first difference has to do with the disappointment with the failed sociological tools to identify specific paradigms—something that some sociologists try to do—and therefore, the impossibility of clarifying this too vague concept. We simply note that afterward, he accepts the analysis of structuralist conception of Sneed and Stegmüller (Kuhn 1976), and the semantic programs of analysis of science (Kuhn 1992).

Probably not being aware of it, Kuhn (1993) takes up two Fleckian themes. The first of them, when he introduces the notion of "speciation" to describe the transformation of one theory into another, without completely abandoning the conceptual apparatus of the first, and without breaking with it. Far from the revolutionary scheme of theoretical change that he had advocated earlier and more attached to the evolution of species in biology, he approaches the conception of Fleck's thinking styles, which is strongly evolutionist.

As Kuhn himself explains, the model of change before him when he wrote his book is that of social change by revolutions, a belief that later, because of the failure of revolutions to change the world, is almost completely lost. It is not surprising that he directs his interest towards other schemes of change and then finds not the social democracy, as was said, but Fleck and evolution in biology.

The other topic that he reintroduces in just a few lines of the same article is when he mentions the slippage of meaning in communication between members of the scientific community as a factor of change and development of science. As we mentioned, one of the central themes of Fleck.

Synthesis

Kuhn mentions in the "Prologue" what he owes to Fleck's work. However, recognition is too limited. Through our brief analysis of Fleck's work, we find that most of his great central topics have a strong correspondence with those of Thomas Kuhn.

These include the following items:

- His evolutionary Kantian structure,
- The notion that the philosophy of science should be based on the history of science,
- The similarities between styles of thought and paradigms, as well as between collectives of thought and the scientific community,
- The specific Gestalten of styles and paradigms, as well as the perceptual Immeasurability they imply,
- The difficulties of communication between different styles and paradigms and the resulting conceptual incommensurability.

We also find traces of Fleck's conception in Kuhnian developments after the structure of scientific revolutions, including:

- The similarity in the analysis of a style and that of "disciplinary matrices,
- The notion of speciation as a paradigm shift differs from a revolutionary change,
- The shifts of meaning in communication as a factor of change.

The theoretical objections of Kuhn to Fleck's "collective mind" are correct. However, he does not disavow the notion of "collective thought", which can be reformulated in terms that do not imply ontologizing and return to the social category of individuals. These entities do not possess the totality of the knowledge of a specific style, distributed unequally among all the members of the thought collective; it implies necessary interactions and, therefore, evolutions in the style.

Too close to his own thinking, Kuhn felt it was too difficult to separate his convictions from those of Fleck.

As he states, he is not sure that he took more from Fleck than those he mentions, although as Thaddeus Trenn states in the "Preface" to the English version of Fleck's book (19): "*obviously he could and certainly should have*".

The diffusion of Kuhn's work implicitly disseminates Fleck's ideas, which are used by a wide range of philosophers and scientists who think, like him, that the specificity of science is the existence of thought structures that develop over time. *Research programs* in Imre Lakatos (1970), *research traditions* in Larry Laudan (1977), and *habitus* in Pierre Bourdieu (1980) are some of the names that adopt these epistemic structures with a broad structural similarity with Fleck's thought style.

In some sense, all the contemporary philosophers of science, all those who study the historical, social and formal aspects of science, are part of his thought community. However, not all, and perhaps very few if any, recognize him as their legitimate ancestor.

Conclusion

After the points argued, it becomes clear that Ludwik Fleck's contribution to the philosophy of science has been far more substantial than Thomas Kuhn's brief remarks would suggest. Although Kuhn acknowledged that Fleck had anticipated many of his ideas, neither of his references fully conveys the depth of this influence. A careful reading of Fleck reveals not only the intellectual groundwork for Kuhn's own proposals but also the foundations of a broader tradition that conceives science as evolving through long-term, historically situated structures, whether termed paradigms, research programs, traditions, Gestalten, or other forms of collective organization.

By revisiting and synthesizing the central elements of Fleck's epistemology, and by reconstructing his notion of the thought collective within its own philosophical environment, we recover an essential chapter of the historical memory of scientific knowledge. Recognizing Fleck's place within this genealogy enriches our understanding of how scientific communities shape, transmit, and transform ways of thinking across generations.

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