



NEW IDEAS

Genesis and development of the “medical fact”. *Thought style* and scientific evidence in the epistemology of Ludwik Fleck

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A diagnosis based exclusively on the so-called scientific evidence does not take into account the problem of the theory-ladenness, widely debated in Twentieth Century epistemology. The theory of knowledge developed by Ludwik Fleck, physician and philosopher active in the 30s, can still be useful for shedding light on how psychiatric diagnoses are influenced by a specific thought style that directs the observations and affects the development of knowledge and the formation of connections between concepts.

Keywords: Fleck, knowledge, medical facts, thought style, observation, incommensurability.

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The definition of the concept of “mental disorder” is one of the most debated issues in Philosophy of Psychopathology. More generally, the problem of defining the “disease” can be considered a classic in the Philosophy of Medicine. The way of conceiving the mental disorder has in fact an immediate relapse on the diagnosis or rather on the method used to reach it. The prevailing trend is to make diagnoses firmly based on scientific evidence, in line with the so-called Evidence Based Medicine (EBM). The underlying assumption is evidently the belief in the possibility of a direct and objective description of the symptoms, therefore in the possibility of an immediate access to observational data, considered as “facts” (Aragona 2009). Such an approach is criticized from different points of view, which take into account the complexity of the interaction of the individual with his environment – for example, Guidano’s (1991) Post-Rationalist Cognitivism – and the problem of the theory-ladenness of observation, widely discussed by Twentieth-Century epistemology. Usually, in explaining the theoretical landscape within which these issues are tackled, the reference is to the philosophy of Thomas Kuhn, to the contemporary Evolutionary Epistemology or to the research program of Cognitive Sciences. In

all these cases, the debate seems to revolve around the problem of knowledge acquisition and processing: observation and subsequent recognition of symptoms – as well as of every kind of empirical data – are in fact part of a non-trivial cognitive process. First of all, not all the observers “see” the same things, but they can see different things depending upon the theoretical frameworks that more or less consciously they apply; secondly, every naïve observation requires, in order to be useful, an interpretation in the light of the available information; finally, each statement must be consistent with all the others that constitute a given system of knowledge. It could be argued that the so-called “facts” are the point of arrival, and not the starting point, of a cognitive process that involves the knowing subject, the known object and the environment – cultural, historical, natural – in which both are located. This is the position taken in the early 30s by Ludwik Fleck, microbiologist, epistemologist and philosopher of medicine remained virtually unknown until a few years ago. In his major work – *Genesis and development of a scientific fact* (1935) –, on the basis of his personal laboratory experience and of an accurate historical reconstruction of the formation of the contemporary concept of “syphilis”, Fleck puts into

question the possibility of a medical science – and of science in general – as a cumulative knowledge system built on scientific evidence. By providing a long series of examples drawn mainly from the history of medicine, Fleck points out that a pure and direct observation cannot exist: in the act of perceiving objects the observer, i.e. the epistemological subject, is always influenced by the epoch and the environment to which he belongs, that is by what Fleck calls the *thought style*, defined as “directed perception, with corresponding mental and objective assimilation of what has been so perceived” (Fleck 1935, p.99). Similarly to Kuhn’s conception of *paradigm* and *scientific community*, developed thirty years later, Fleck brings together the concept of *thought style* with that of *thought collective*, in turn defined as a «community of persons mutually exchanging ideas or maintaining intellectual interaction» (Fleck 1935, p.39). Hence there are ways of looking at the same facts which appear to be mutually incompatible: for instance in medicine, as Fleck claims as early as in 1927 in his article *Some specific features of the medical way of thinking*, the classification of pathogenic bacteria used in biochemistry and the one adopted in epidemiology are *incommensurable* with each other. It is interesting to note that this word, that today we tend to consider “Kuhnian” or “Feyerabendian”, has thus made its first appearance in the epistemological language well before the publication of the works that have revolutionized the Philosophy of Science in the 60s. It is even more interesting to underline how, according to Fleck, the incommensurability is not a feature *despite* which science progresses, albeit in a discontinuous and revolutionary way – as advocated by Kuhn –, but it is a positive characteristic, indicative of the plurality of cognitive approaches – *thought styles*. A science that does not want to stiffen up in a dogmatic and hierarchical *thought collective* as that of religion must therefore be open to the incommensurability and to the plurality of *thought styles*, which provide a “free and more human science”. A science that does not take into account the influence of the *thought style* cannot indeed claim to be considered rational. Diseases, even more than the facts of physics or chemistry, cannot be de-

finied once and for all as static facts, but rather as processes: the “medical fact” is characterized by being in itself ever-changing and, in addition, influenced by the different interpretations of it that are given in the various epochs. In this sense, the example of syphilis is paradigmatic. The medieval conception of the “disease of lust” linked to an alteration of blood due to specific astrological conditions has gradually evolved into the contemporary medical concept of syphilis: the superstitious idea of the luetic blood actually found its justification in the Wassermann reaction, which indeed provided the scientific proof of the existence of a blood alteration. The current concept of syphilis turns out therefore to be composed of elements derived from ancient popular beliefs coexisting with scientific demonstrations obtained *ad hoc* for this purpose. The perception of syphilis that not only the layman, but also the scientist had, was in a large extent made up of elements that Fleck would define “stylistic” and which are not simply an unavoidable evil of science, but represent a constituent part of it. Similarly, today one could wonder if the concept we have of a disease such as AIDS, or a mental disorder such as schizophrenia, can be considered free from the influences of a *thought style* that goes far beyond bare empirical data. The scientific fact turns then out to be, in Fleck’s conception, a “thought-stylized conceptual relation which can be investigated from the point of view of history and from that of psychology, both individual and collective, but which cannot be substantively reconstructed in toto simply from these points of view” (Fleck 1935, p.83). What provides the scientist the illusion of having to do with scientific evidence completely independent from himself is just the cognitive mechanism through which he comes to the construction of the facts themselves. Knowledge acquisition and processing, in Fleck’s view, occurs through the formation of a series of connections – that the contemporary cognitive scientist would call “neural” – between concepts, directed by the *thought style* which the knowing subject belongs to. Some of these connections had grown so strong that they seem entirely independent of any historical or sociological conditioning and give the impression of be-

ing “real” connections, which are transmitted to posterity becoming “certain knowledge” no longer requiring scientific validation. This kind of connections are called “passive” by Fleck, as opposed to the “active” ones: being the researcher aware of the latter he looks for either a confirmation or a refutation, in other words for a response of nature that allows him to consider them as “facts” rather than “hypothesis” built by himself. The aim of the scientific activity itself is in fact defined by Fleck as “maximum thought constraint with minimum thought caprice” (Fleck 1935, p.95). Such is the illusion of scientist’s “passivity” in the sight of Nature that the empirical data appear to us as objective, and it is the “harmony of illusions” to constitute the real frame of the knowledge system that we call “science”. Any attempt to classify the facts, a good example being the DSM as classification of psychopathological facts, is far from reflecting the “real” structure of nature. It rather corresponds to the structure of our *thought style* that directs our observation and the subsequent construction of a coherent knowledge system. The epistemological subject is therefore inextricably linked to the environment to which he belongs and, in a certain sense, is so dissolved in that it even create an artificial vision of itself as an entity beyond time and space provided with a direct access to a reality in itself independent of its interpretation. The route proposed by Fleck – the issue had been already addressed by a very similar point of view by Ernst Mach in his *The Analysis of Sensations* (1886) – bequeaths to the new epistemologies and to the cognitive sciences the task of studying the human cognition overcom-

ing the traditional dualisms mind/body, subject/object, nature/culture.

Returning to the problem of mental disorders diagnosis, adopting a Fleckian perspective, we can then suggest that the diagnosis itself is nothing more but the reflection of a specific psychopathological *thought style*, which directs the observation towards some symptoms that appear as evidence only because we are predisposed by the *thought style* to perceive them as such, in a tangle of nature and culture which is impossible to prescind from in any cognitive or scientific activity that claims to be rational.

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