ELEMENTS OF SOCIAL EPISTEMOLOGY AT THOMAS KUHN AND STEVE FULLER

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ABSTRACT

The communication attempts to pinpoint the social nature of the philosophy of science following the ideas of Thomas Kuhn and S. Fuller. Each author captures social aspects of the philosophy of science, snapshots of the history of the philosophy of science, relevant for a discussion of the scope of social epistemology and of the sociology of knowledge. Are these phrases synonyms? This insight attempts to assess the social nature of the philosophy of science in its main features and bring some answers, although they may not be the definitive ones. The investigation identifies through the literature on the subject highlighted here a perspective where the sociology of knowledge is considered a purely descriptive and empirical enterprise, and another related one that social epistemology is mostly conceptual and normative. Then we interpret Kuhn's and Fuller's ideas concerning social epistemology against these two views.

KEYWORDS: Thomas Kuhn, Steve Fuller, social epistemology.

Introduction

This paper aims to identify and emphasize the social nature of the philosophy of science following the ideas sustained by Thomas Kuhn and Steven Fuller. Thomas Kuhn (1922–1996) is an extremely discussed, appreciated and criticized author within the domain of philosophy of science. His work *Theory of Scientific Revolutions* from 1962 is one of the

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most frequently cited academic works until the present day. Steve Fuller (1959 -) is a contemporary author who brings to the fore the political (and social) dimensions of the cognitive authority. For him, cognitive authority can be "mapped", developing an interdisciplinary research programme. The core of the paper is represented be the correlation between the ideas of two emblematic authors: the former contributed to the evolution of social epistemology without explicitly imposing the domain with this name, and the latter not only that he explicitly approached the domain, but he also gave a particular meaning to the phrase "social epistemology".

Each of these two authors identify certain social aspects that are central to the philosophy of science – as philosophy of knowledge and progress in knowledge – aspects that represent relevant images of the history of the philosophy of science and for the discussion concerning the sub-domains of social epistemology and of the sociology of knowledge. The investigation conducted in this paper aims to appreciate if and to which extent the above mentioned two sub-domains – that of social epistemology and that of the sociology of knowledge – overlap. The answer follows from the evaluation of the social nature of the philosophy of science and of its main characteristics, although the findings and conclusions may not be definitive. Synthesizing the literature on the subject one may notice that there is a perspective that considers the sociology of knowledge a descriptive and empirical approach and another one, which sees social epistemology as a more conceptual and normative enterprise[2].

The debate on social epistemology

In order to be able to offer synthetically a panoramic view on the topic we are choosing to start from the observation that the debate on social epistemology explicitly called by this phrase is rather recent. Orestis Palermos and Duncan Pritchard have shown in a study in 2013[3] that the status of social epistemology is not definitively established. In their perspective, already there is a body of methods and knowledge that we can call traditional epistemology. Their view presents traditional epistemology that which orients the cognitive process of knowing from the individual

2 Schmitt, F.F. (ed.), *Socializing Epistemology: The Social Dimensions of Knowledge*, Lanham, Maryland, Rowman and Littlefield, 1994.

3 Palermos, Orestis, Pritchard, Duncan, 'Extended Knowledge and Social Epistemology', *Social Epistemology Review and Reply Collective*, 2 (8), 2013, pp. 105-120.

who is the active cognitive agent, toward the result (the new piece of knowledge). In this tradition, to assess knowledge, it is necessary to insist on the cognitive and epistemic properties that characterize the individual cognitive agent.

On the other hand, social epistemology places at the centre of its approach the insistence on knowledge as either first of all social, or entirely of a social type, as it is generated by the socio-epistemic interactions of the individuals. Thus, social epistemology is also an interdisciplinary domain which does not exclude the ideas, results, or methodology of the analytical epistemology, but interprets and uses them in accordance to its social conception about knowledge.

The scientific disciplines are not classified nowadays exclusively after the object of research, solely in formal and factual sciences, or in natural sciences and humanities, but also according to the nature of the interests guiding knowledge. The latter leads to the classification of sciences in *normative* sciences (nomological, oriented toward the identification of the scientific laws) and *historical* sciences (mainly preoccupied with the reconstitution of particular events in order to explain them, and thus the historical sciences cannot be considered, completely deprived of nomological content or pursuit).

According to the objectives stated and placed at the basis of the scientific activity, the scientific domains can be *fundamental* (when they are oriented toward the extension, improvement and the deepening of knowledge) or *applicative* (when they are oriented toward the obtaining and employment of knowledge with a more practical utility).

Thomas S. Kuhn and Steve Fuller on social epistemology

These classical landmarks become much more interesting within the perspectives opened by Thomas S. Kuhn and Steve Fuller. Along with the turning-point book *The Structure of Scientific Revolutions*, knowledge enters into the shadow of incommensurability. The scientific approach is not understood in positivist, algorithmic and objective terms. The social, historic or even personal factors, which are manifest also as interests beyond the strict intellectual ones, or the ones meant to bring direct services to mankind, influence the results of the scientific investigation. Along with social epistemology as understood by S. Fuller, knowledge is no longer the result of the conjugation of the normative and descriptive activities of scientists or of the interpretation of the facts taking into consideration the

regularities or the verified observance of the known scientific laws, with the mathematic transformation that is used and accepted at the time and with the working hypothesis from which the investigation started, because it is also a result of the social and political sphere and structure of the current cognitive authority.

We can make the following correlation: As W. V. O. Quine has demonstrated the impossibility of the independence of the language of scientific observation from the theory (what implies that the possibility to test theories is rather utopian and only relative), in a similar manner, at Fuller, the investigation proves the impossibility of the independence of the codification and theorization of knowledge towards the social and political dimension of knowledge via language, interactions and the very life of the scientific community.

The most generous ore of ideas identifiable at Th. Kuhn and relevant for the topic of social epistemology is in our view included in the perspective where paradigms are to be considered communitarian engagements. The author shows: "In the development of a science of nature, when an individual or a group produces, for the first time, a synthesis capable of attracting the majority of the practitioners of the new generation, the old schools gradually vanish. In part, their disappearance is caused by the conversion of their members to the new paradigm. There are though always some people, who hang on to one or the other of the old conceptions, but they are simply banished from the guild and their works become ignored. The new paradigm involves a new and more rigid definition of the field"[4].

4 Cf. Kuhn, Thomas, *The Structure of Scientific Revolutions*, 3rd edition, Chicago and London, The University of Chicago Press, 1970, p. 19.

The introductory study signed by Mircea Flonta for the Romanian translation *Structura revoluțiilor științifice*, Bucharest, Editura Științifică și Enciclopedică, 1976, emphasizes also Kuhn's observation that all the scientists still caught in the old paragim often remain somehow closer to philosophy, from which all sciences derive, through ever more rigid and rigorous definitions and use of methodology. In our view, the scientific perspective in the quote mentioned above is that of a modernist, trained in the exact sciences and rigorous in its philosophical endeavour, as a scientist who approaches the nature of science and knowledge via the right philosophical questions. On the other hand, a new way of thinking arose with the quantum physics: from Heisenberg's uncertainty principle that imposed new physical paradigms and a "postmodern" lack of precision of the values and properties of a particle, when unobserved, unrelated to our human and devices' limits in measurement and observation, new debates on the philosophy of uncertainty have been opened. Thus, postmodernism as a speculation of the new paradigms in physics, in art and architecture, that places the accent on

At Th. Kuhn, the mature science is founded on a widely accepted paradigm, well articulated, useful in scientific research and characteristic for a certain period, preoccupied, as Kuhn says, with the "gardening work" presupposed by the development of the existing paradigm, within a pre-established and relatively inflexible paradigmatic pattern. For the author, the paradigms are the centre of scientific activity and they involve a pattern of exemplarity contributing to knowledge via theories and descriptive, explicative-restrictive, or specific concepts, meant to secure the hegemony of the paradigmatic perspective. The term "hegemony" introduced here has an explicative role and conveys more expressively the idea, while connecting Kuhn's perspective to S. Fuller's, although it is not used by these authors. This is a term naturally introduced into the argument to the extent where we understand by "hegemony" the stable, functional leading capacity corresponding to the idea of accepted and functional paradigm at a certain moment. By imposing restrictions and stating the allowed "movements", the accepted paradigm acts as a political and hegemonic instance. Maybe the term does not cover here the political meaning completely as this aspect is more implicit at Kuhn in the consequences that can be deduced from science as community activity, but it is entirely appropriate in relation to the perspective discussed in *Social Epistemology*, by S. Fuller.

Thomas Kuhn showed that "*restrictions*, born from confidence in a paradigm turn out to be essential for the development of science"[5]. The restrictions relate to "the decision to employ a particular piece of apparatus and to use it in a particular way carries an assumption that only certain sorts of circumstances will arise"[6].

For Kuhn, the paradigm is a type of standard example and not just a source of solutions to the problems raised by research, as it is more than an exemplary model of description and explanation of a part of nature. The paradigm presents itself as a sort of 'lenses', a 'viewfinder', through which problems otherwise unconceivable outside the paradigmatic approach are

fragmentarity, difference, discontinuity, pluralism, dialogue, interdisciplinarity and irony, is not far fetched. In terms of philosophy of science, postmodernism does not develop along paradigmatic residues but rather it brings a dialogue among interdisciplinary theoretical fragments that better answer to the challenge of contemporary, more complex, problem solving.

5 *Ibidem*, p. 24.

6 *Ibidem*, p. 59.

identified. The sphere and the precision of a paradigm are improvable and they can be developed stage after stage until the moment when the paradigm loses its descriptive-explicative-predictive force. Time after time, more valuable results are obtained: "we must recognize how very limited in both scope and precision a paradigm can be at the time of its first appearance"[7].

The existence and the application of a paradigm define the problems to be solved – the *puzzles*. "Puzzles are, in the entirely standard meaning here employed, that special category of problems that can serve to test ingenuity or skill in solution"[8]. Solving a puzzle or the problem offers an image for the situation of a scientific aspect, better and more original than that which stayed at the basis of the respective puzzle, that is, either a simple solution to the problem is obtained, or even a real breakthrough. The paradigms are offering models of problems and solutions for problem solving, for a community of practitioners of science.

For the scientist, who is always implicitly understood as part of a specific scientific community, paradigms function as "disciplinary matrices", the knowledge of the world being closely correlated with the precision of the formulations, with the precise conceptual and methodological apparatus and with the scientific approach, formed due to the typologies, advantages and disadvantages provided by methodologies. Kuhn showed that "if each scientific revolution alters the historical perspective of the community that experiences it, then that change of perspective should affect the structure of postrevolutionary textbooks and research publications".[9]

Kuhn was criticized especially for introducing elements that are exterior to the strictly scientific sphere into the analysis of the scientific process, a series of psycho-social elements that deem research and activity that is neither strictly individual nor 'purely' scientific, since is influenced by community beliefs and political aspects to the extent that each paradigm renewal bring a new order in the scientific sphere. Of course there is a crucial difference between the scientific belief and the political or psychological ones. Thus, Kuhn approaches the aspect of limit and management of the scientific belief: "Observation and experience can and

7 *Ibidem*, p. 23.
8 *Ibidem*, p. 36.
9 *Ibidem*, p. ix.

must drastically restrict the range of admissible scientific belief, else there would be no science. But they cannot alone determine a particular body of such belief. An apparently arbitrary element, compounded of personal and historical accident, is always a formative ingredient of the beliefs espoused by a given scientific community at a given time"[10].

Epistemology becomes social at Kuhn because he places the accent on the importance of the scientific community. The accepting of certain results and solutions from the scientific community clarifies the nature of the relation between rules, paradigms and normal science. Kuhn considers that a mature scientific community could be identified through a set of common paradigms, which does not imply that all the rules of the mature scientific community are common. For Kuhn normal science is a tradition-bound activity: "In this essay, 'normal science' means research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice. Today such achievements are recounted, though seldom in their original form, by science textbooks, elementary and advanced"[11]. In this respect, the study of the paradigms is what prepares the students for their status as full members of that scientific community where they are going to activate.

Kuhn noticed: "Whitehead caught the unhistorical spirit of the scientific community when he wrote 'A science that hesitates to forget its founders is lost'".[12] In fact he underlined by that the social character of the scientific activity, because he thus saw science as an activity similar to other professions which need heroes and save their names. In Kuhn's view, scientists do not forget their heroes, but they forget their work, or they revise it[13].

Another notable aspect is the interest manifested by Kuhn in comparing the scientific and the political revolutions. Both include dysfunctions that are triggering crises followed by revolutions. "Political revolutions aim to change political institutions in ways that those institutions themselves prohibit. Their success therefore necessitates the partial relinquishment of one set of institutions in favor of another, and in

10 *Ibidem*, p. 4.

11 *Ibidem*, p. 10.

12 *Ibidem*, p. 138.

13 *Ibidem*, p. 139.

the interim, society is not fully governed by institutions at all. Initially it is crisis alone that attenuates the role of political institutions as we have already seen it attenuate the role of paradigms. In increasing numbers individuals become increasingly estranged from political life and behave more and more eccentrically within it"[14].

The time of change is characterized by the commitmentt of many individuals to transformation and reconstruction: "Then, as the crisis deepens, many of these individuals commit themselves to some concrete proposal for the reconstruction of society in a new institutional framework. At that point the society is divided into competing camps or parties, one seeking to defend the old institutional constellation, the others seeking to institute some new one. And, once that polarization has occurred, political recourse fails. Because they differ about the institutional matrix within which political change is to be achieved and evaluated, because they acknowledge no supra-institutional framework for the adjudication of revolutionary difference, the parties to a revolutionary conflict must finally resort to the techniques of mass persuasion, often including force"[15].

While continuing his argumentation, Kuhn compares the development of society to the evolution of sciences, emphasizing the process of renewal of the paradigms. This way, the socio-political perspective becomes all the more obvious. "Like the choice between competing political institutions, that between competing paradigms proves to be a choice between incompatible modes of community life. Because it has that character, the choice is not and cannot be determined merely by the evaluative procedures characteristic of normal science, for these depend in part upon a particular paradigm, and that paradigm is at issue. When paradigms enter, as they must, into a debate about paradigm choice, their role is necessarily circular. Each group uses its own paradigm to argue in that paradigm's defense"[16].

The scientific community is the result of specific socialisation of apprentices or students to be included within the ranks of scientists. The scientific paradigms may be considered stages or processes that compose this socialisation. These ones are producing, to use Polanyi's phrase, a tacit knowledge, inexplicit, representing in fact the core of this socialisation.

14 *Ibidem*, p. 93.

15 *Ibidem.*

16 *Ibidem*, p. 94.

"Scientists work from models acquired through education and through subsequent exposure to the literature often without quite knowing or needing to know what characteristics have given these models the status of community paradigms. And because they do so, they need no full set of rules. The coherence displayed by the research tradition in which they participate may not imply even the existence of an underlying body of rules and assumptions that additional historical or philosophical investigation might uncover"[17]. Paradigms can thus function as tacit knowledge and as a constraining substitute for the rules. The Kuhnian vision of science is not cumulative. The concrete scientific activity develops concepts, laws and theories, in relation to the practical activity, learning as you go: "the new fact is not quite a scientific at all"[18].

Paradigms, through the modelling processes that they allow, permit this procedure that does not seem rigorous enough to be scientific. We are dealing here with a special type of socialization which represents as well the social mark of Kuhnian epistemology.

The sociological character of knowledge is underlined by Kuhn explicitly in the Postscript added to the work. "How does anyone elect or how is one elected to membership in a particular community, scientific or not? What is the process and what are the stages of socialisation to the group? What does the group collectively see as its goals; what deviations, individual or collective will it tolerate; and how does it control impermissible aberration? A fuller understanding of science will depend on answers, to other sorts of questions as well, but there is no area in which more work is so badly needed. Scientific knowledge, like language, is intrinsically the common property of a group or else nothing at all. To understand it we shall need to know the special characteristics of the groups that create and use it"[19].

Steve Fuller's social epistemology

At Steve Fuller social epistemology is understood as social organization of knowledge. Social epistemology is presented as the goal of all epistemology. "The ultimate goal of the epistemologist will be thus to map the structure of the cognitive authority among all the disciplines as a

17 *Ibidem*, p. 94.

18 *Ibidem*, p. 53.

19 *Ibidem*, pp. 209-210.

means of providing direction for their research – which is, precisely, the goal of the epistemologist"[20]. We can easily understand from these lines not only that the production of knowledge has a social-political dimension, but also the fact that this dimension is primordial. And the production of knowledge is not the only important problem interpreted by Fuller in a different perspective than that of a classical epistemologist.

S. Fuller sustains that whoever knows nothing about social epistemology can deduce the normative interest that it carries on, which he understands in a particular manner as a result of optimal divisions of the cognitive work. Central for Fuller's approach is the fact that the product of the cognitive efforts of researchers are affected by the change in social relations where are involved the producers of knowledge. In this perspective, the social epistemologist is the ideal creator of epistemic public policies. To the extent in which a certain product of knowledge is desired, then the social epistemologist can project a scheme for work division in order to generate a more efficient production of that outcome of knowledge; and when society is already engaged in a particular scheme for cognitive work division, the social epistemologist has the role to indicate which products of knowledge could yield from that scheme.

In Fuller's interpretation the term "epistemology" is conceived as in Plato's *Republic* or in *New Atlantis* of Bacon, the cognitive preoccupations being prospective means for these preoccupations, while the activity is not utopian, at least not in a pejorative sense. The cognitive preoccupations create these "normal circumstances" of research that answer for the variety of the modalities in which researchers attempted to reach knowledge and that of the products that were termed knowledge.

The connection between the adequacy of knowledge and the clarity and certainty of thought is the heritage that Descartes' philosophy left us. Fuller declares that he is not a Cartesian himself, in the sense that he does not consider necessary the withdrawal from society and from the network of social interrelations in order to address the fundamental questions about the nature of knowledge that are necessary. Although the social world can appear to be too confusing to deliver knowledge judgements, by

20 Fuller, Steve, *Social Epistemology*, Indiana University Press, Bloomington and Indianapolis First Midland Book Edition, 1991, p. 5, [Online], http://www.collier.sts.vt.edu/5424/pdfs/social- epistemology.pdf [March 19, March 30, April 5, August 28].

comparison to the solitude of the individual study, this is in fact the natural place for research activities, considers Fuller.

The scientific disciplines maintain the (scientific) status by the manner in which they construct their history so that it appears to be the inevitable result of the scientific endeavours until then. In a legitimizing similar approach, for Fuller, social epistemology appears as a natural development of the Kantian philosophy. In a revisionist perspective of the history of modern philosophy, Fuller presents social epistemology as an epistemology of knowledge.

Social epistemology is the main branch of philosophy for Fuller. In this respect, he identifies a direction traced by Karl Mannheim (1936) and Larry Laudan (1977) that shows that the sociological accounts of the cognitive approaches are appropriate only then when they fail, in respect to certain standards that are universally acceptable. The sociologist of knowledge seems to be the researcher which wants to prove that a proposition of knowledge is valid when restricted by the social conditions applicable when it was uttered first. On the other hand, the direction approached by the founder of sociology Emile Durkheim, within a Kantian tradition, interprets the universal categories of cognition (space, time, item or quantity, cause) as categories based on characteristics shared by all societies, the sociological categories of knowledge being thus based on universal rationality. Laudan and Mannheim presupposed that the sociological interpretations of knowledge are founded on the categories that proved characteristics for particular societies and, as a consequence, the sociological categories of knowledge are not to be considered philosophical categories. In this train of ideas, the phrase "social epistemology" was considered an oxymoron, or a contradiction in terms[21].

Fuller noticed that, on the one hand, epistemology is central to philosophy, and, on the other, it has a post-Kantian origin. Before Kant, philosophers have understood the nature of knowledge and the nature of reality as two sides of the same coin. Related to this perspective, the generic philosophical question is, according to Fuller, how is the reality we know constituted, and, to the extent that we know it, how are we constituted so that reality can be manifest for us, in the degree that it is?

Post-Kantian thinkers separated the question concerning knowledge from the question concerning reality. This way the question of

21 *Ibidem*, passim.

reality has meaning only as a version of the question of knowledge. The perspective holds that the answer to the question of knowledge does not raise restrictions in regards to the answer to the question of reality. Since the 19th century, epistemology is practiced as something different from metaphysics and thus as an activity which is quasi-philosophical[22].

Whether the predecessors of Kant were convinced that the nature of knowledge and the nature of reality have nothing in common, then why did they become interested in matter of knowledge, asks Fuller? The 19th century is the one that registered a true development of the scientific disciplines, and the enunciations concerning knowledge carried weight only at the intra-disciplinary level, while aspiring at interdisciplinary cognitive relevance. As a consequence, the internal structure of knowledge knew an increasing complexity that called for supplementary study, although not in correlation with the question of reality. For instance, the reductionist attempts to simplify the perspective on mental phenomena down to a type of physiological mechanics represented precisely this type of efforts. To study knowledge became equivalent to identify rules to evaluate reductionist enunciations, which involved the development of a meta-language as well in order to rewrite these enunciations, emphasizing the limits of their cognitive authority[23]. In this way, Fuller points toward the ultimate purpose of the epistemologist and social epistemology to "map" the structure of the cognitive authority in all disciplines. Social epistemology is a domain of study that should autonomously and non-contradictorily approach the social organization of knowledge[24].

Inter-disciplinarity has an important role: "One special area where the administration of knowledge policy is likely to raise interesting epistemological issues is the regulation of interdisciplinary borrowing: to take a vivid example, under what circumstances would a metaphysician be allowed to rely on arguments from indeterminacy in quantum mechanics to defend the existence of free will?"[25]

22 Fuller cites Habermas, J., *Theorie und Praxis. Sozialphilosophische Studien* (TuP), Frankfurt a.M., Suhrkamp, 1971 and Hacking, Ian, *Why Does Language Matters to Philosophy*, Cambridge University Press, 1975

23 Fuller, Steve, *Social Epistemology*, Indiana University Press, Bloomington and Indianapolis First Midland Book Edition, 1991, [Online], http://www.collier.sts.vt.edu/5424/pdfs/social-epistemology.pdf [March 19, March 30, April 5, August 28].

24 *Idem*.

25 *Ibidem*, p. 294.

Social epistemology has a political dimension in Fuller's view, through the accent placed on the very production of knowledge, which is a generator of a variety of products, some with clear political consequences and not just social or cultural ones. They generate the attitudes of the scientists and their position in relation to scientific progress. Among the examples provided by Fuller is the Edinburgh School that presents scientific debates as "superstructure" whose "infrastructure" stays in political, economic and/or cultural interests found in competition. Societies project schemata for the classification of their members. The political aim of these schemata is to reduce the uniqueness of the individuals and to increase equality by introducing different individuals in the same classification for control. The advantage is that similar situations can be treated similarly, thus providing a feeling of justice.

In the cognitive sociology of Durkheim, collective representations were treated as social subjects. These representations had the role to manage both the separation and the social integration of the individuals in society, thus defining each individual in the terms of the "dual" natural and cultural code investigated later by Levi Strauss (1964). The regulations of the individual behaviour articulate theories about the natural capacity of the individual to behave in an acceptable manner and confirm the truth of these theories via cultural agencies. The conventions that contribute to the integration of the individuals in diverse social schemes led Michel Foucault to the idea of the "law as social metaphysics". For Fuller, the metaphysics which is dignified of this name *should* be social: the claim of metaphysics to show how things in reality are, makes so that the distinctions of categories appear as "natural", also for someone who probably would not accept the theoretical justifications in question. Sometimes, these theoretical justifications are ideological and function as explanations of the functioning of phenomena via their social benefices and as transcendental arguments explaining the phenomena through elements and aspects correlated with their presence.

According to Fuller, Kuhn, Feyerabend and Hanson showed by the end of the '50s that positivism did not succeed through the rules and relations of correspondence and through the subsumption strategies to adequately account for the structure of the cognitive authority in sciences. Kuhn and the Popperians continued the epistemological project, and, although many Popperians deny it, as Fuller shows, we are reminded the fact that the epistemological project is preoccupied with the social

organization of knowledge through the frequent allusions to political theory.

Fuller illustrates the connection between epistemology and political theory as following: Popper has situated the scientific community within the context of the "open society", of liberal type; Feyerabend has placed the accent on the term "open" which recommended him as a libertarian, and Lakatos on the term "society" from the Popperian expression, as a social democrat. Kuhn appears in this interpretation, given his view about normal science dominated by a sole paradigm replaceable only via revolution, as a totalitarian thinker. Fuller states that these labels are not merely metaphors, but clues about what do the "methodologies" become when the epistemologist is transferred from the context where he appreciates already existing products of knowledge into the context where he recommends the schemata through which knowledge should be produced[26]. From here on, Fuller infers that when we are conducting social epistemology investigations, the philosophy of science is nothing but political philosophy applied to a segment of society, the class of scientists. Otto Neurath has already brought an intuition to this end in 1962, shows Fuller, when he has considered the movement Unified Science a modality to eliminate conservative and elitist political tendencies and also those of the hermeneutical thought in humanities, advancing toward a more egalitarian, even Marxist, politics, associated with a naturalist approach of the social sciences.

Conclusions

The reason why the epistemologists were hostile to the idea of epistemology as an inherently sociological activity is identified by Fuller in the rhetorical strategy to treat cognitive preoccupations and their social organization as independent entities. The rhetorical strategy puts the question this way: how does it help us to know about the social organisation of a cognitive activity to the real knowledge, related to the very cognitive activity?[27] For Fuller, on the one hand, mental activities are noticed as

26 Interpretation after Krige, J., *Science, Revolution and* Discontinuity, Harvester Press, 1980.

27 Fuller shows that the situation is similar to that of the medieval scholar who sustains that a good knowledge of physiology is irrelevant for knowing the human being as human being. This scientist is to argue that since every creature has a physiology, than there is nothing specifically human in having a physiology and nothing humane in the fact that human beings can be educated to study human physiology. The arguments against physiology and sociology have in common the fact that they are falacies, confusing the essential traits of an object with

relevant or not and taken under consideration only in relation to their social manifestations and consciousness (social and individual as well).

Social epistemology that "is not preoccupied with the formation of beliefs and that examines only the reliable processes to reach the truth offers but an account of knowledge appropriate for the androids, and not for human beings, that is, an epistemology where all the action takes place without the mediation of consciousness"[28]. And Kuhn also placed this sort of uncritical accent on the centrality of beliefs within the scientific activity, in a particular sense: the paradigms "can function without agreement over rationalization or without any attempted rationalization at all"[29], as Kuhn put it.

On the other hand, all that is described and analyzed in a specific context of justification, which defines any cognitive enterprise, presupposes a parasociology, understood as a normative account of the terms in which someone is eligible to take part in a cognitive endeavour.

As Thomas Nickles also notices in the Preface of the work *Social Epistemology*, Fuller presents scientific investigation as a socio-historical process conducted by the human beings with varied instruments. This is also the central level of confluence among the ideas sustained by Kuhn and Fuller. For Kuhn, the social organization of the scientific investigation is less important than the idea of process of knowledge; while at Fuller things stay the other way around. For Fuller, even the logic of the investigation is founded on a social dimension, in conformity with a social logic that is seen more clearly when we are taking into consideration the products of the scientific process of knowledge.

We underline here two main aspects in Fuller's perspectives: knowledge is a social phenomenon, and social epistemology is not an insulated academic discipline: "My version of social epistemology is unique in conceiving the domain as an inherently interdisciplinary, with the

the features that distinguish one object from another. Interpreting in this respect Duns Scotus, Fuller states that people who argue against sociology in epistemology are confusing *quidditas* and *haecceitas*. Many objects extremely different from one another can have a part of their essential properties identical.

28 Fuller, S., 'Social Epistemology: A Quarter-Century Itinerary', *Social Epistemology*, 26, 2012, p. 269.

29 Kuhn, Th., *The Structure…*, 1970, p. 49.

declared purpose to transform epistemology"[30]. This transformation is meant to formulate an account (an image) of knowledge that at once, reveals the natural limitations of the people trained in epistemological activities and tends to lift these people artificially above their natural limitations.

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