

## DEMOCRATIZING METHODOLOGY

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### ABSTRACT

*This paper is a critique of the mainstream methodology adopted by scientific research. The epistemology of science construes science as an insular, autonomous pursuit. Its insularity from the society at large is expected to enhance the objectivity of scientific reports of reality. The traditional methodology of science is devised to fortify scientific objectivity. Kuhn, Hanson, Lakatos- among others, raise questions about the aperspectivity of scientific claims. Curiously, Kuhn highlights the role the sociology of the scientific community in the genesis of scientific knowledge, but fails to challenge traditional methodology, so apathetic to sociology of knowledge. The paper brings to light pernicious bias entrenched in science communities. It recommends socialization, democratization of methodology as an anecdote to science's results being vitiated by Eurocentrism, androcentrism.*

*Keywords: Methodology, Kuhn, science communities, sociology, bias, dialogue.*

The recognition that sociological factors, instrumental in the genesis of knowledge, are characterized by epistemological significance, problematizes the methodology glorified by logical and postlogical positivisms. Sociologists of knowledge deny the dichotomy between the contexts of discovery and justification designed by Popper. They argue that contextual factors cannot be downplayed in dealing with cognitive claims. Subjective, bodily, social, political and myriad contextual factors necessarily intervene in observation and interpretation of reality. Like the ideas of representative realism, these factors function like a curtain between the observer and the world observed. This cancels the possibility of a transparent vision of a public, really real world which science claims to be able to afford. The faith of the positivists that further intensification of rigour in methodology is likely to ensure a theory-neutral observation is very naive.

The acknowledgement that social scientific views are mediated by tacit metaphysical background assumptions, ontic commitments, as also by political, economic opinions and interests, necessitates modifications of the methodology relied upon by mainstream epistemology. The unsuitability of it is explained by the fact that the traditional methodology is adapted specifically to ruling out subjective and contextual factors, so as to enhance objectivity. It altogether derecognizes sociological factors. A method of this description cannot be profitably utilized in assessing cognitive claims if they are stipulated by definition to be conditioned by sociological factors. I would like to bring out the

absurdities brought about by the application of this method to knowledge claims of an obviously sociological origin. I have in mind Kuhn's theory that scientific views are determined by the sociology of the scientific communities. He, however, does not question the applicability, in principle, of the mainstream methodology to views sociologically generated. But the application in question generates unwarranted, distorted and unfair theories. This, I believe, constitutes a reduction ad absurdum of the faith in the uncritical applicability of the method to the kind of views that Kuhn rightly considers science to engender. In the absence of social criticism, the application of this method leads to incomplete, distorted theories. Kuhn, Hanson and Lakatos are sociologists of knowledge, who explain scientific knowledge entirely through the sociology of the scientific communities. Kuhn is known for his thesis that scientific knowledge is determined by the web of beliefs within which communities of scientists operate. Scientific theories are understood by him to be functions of the scientist's affiliation to a specific scientific community, the kind of education it imparts and the practices inherent in it. This position is built upon Hanson's investigative research that observation is conditioned by theory. Contrary to Popper and his lineage, Kuhn denies the dichotomy of the contexts of discovery and justification and emphasizes the importance of the context of discovery. Among all factors constituting the context of discovery, he singles out the social arrangements within scientific communities as sole determinants of scientific worldviews.

Unlike his predecessors Hempel and Nagel, who define science as a body of knowledge, Kuhn characterizes science as a dispositional skill of problem solving. The propositions constituting this body of knowledge are adjudged by logical and postlogical positivists as true in terms of correspondence with facts. Kuhn's theories are assessed pragmatically in terms of success in problem solving. Their acceptability is also a function of their consonance with the paradigm. The paradigm supervenes the activities of the science community concerned. Normal science proceeds with problem solution in a routine manner, giving rise to theories in conformity with the psychology of the researcher and the social arrangements peculiar to the community. He also refers to rules, not reducible to sociology or psychology, latent in the practice of problem solving in normal science. Rules include methodological principles and theories. The rules are not invoked in normal science. Paradigms, as exemplars, regulate and supervise activities constituting normal science. Paradigms furnish foundations of future scientific practice in the form of achievements or accredited examples. They comprise law, theory and application. Kuhn likens paradigms to judicial decisions, functioning silently in applying laws and requiring clarification in crisis only. In Kuhn's system, it is the paradigm that dictates the way the world is understood. The problem this paper aspires to address is the nature of normal science, as understood by Kuhn. The procedure of normal science is blind, mechanical rule-following. Normal science never critiques methodological rules. But, as already pointed out, these rules cancel sociological factors. They fail to assess sociological factors, or deal with them competently. The contradiction in Kuhn's system, then, consists in the fact that his account of the genesis of knowledge is out and out sociological, while his method of validation is a residue of the pure normativity, a perspectivity of the bygone phase of philosophy. The method suitable for Kuhn's account of knowledge should, in principle, be capable of

weighing among values. The absence of a conscious, powerful critique of the methodological assumptions of classical epistemology on Kuhn's part leads to unacceptable consequences. They lead to objectionable consequences anyway; but in Kuhn's context, the absurdity seems to be magnified. He recognizes sociology of knowledge, yet does not improvise methodology to deal with sociology. Classical epistemology denies any link of sociological factors with knowledge. It lacks any notion of a distinction between facilitating and debilitating social factors. It is in tune with the assumption of context transcendence peculiar to classical epistemology. As a matter of fact, a sound methodology ought to have devices to allow facilitating values to shape theories and resist pernicious values from infiltrating into theory.

In the second place, as established by Kathryn Pyne Addelson<sup>1</sup> and sociologists of knowledge, the science community does not function in hyperseparation from the larger community. Science communities are not at all closed communities, as understood by Kuhn. They share epistemological relations with the wider community, as seen by Quine. The boundaries of these two communities are far from being sealed. The appearance of insularity of the science communities is a myth, created by epistemologists and practitioners of science to protect the cognitive authority of scientists. Values and biases are transmitted from the wider community to the scientific community. Scientific theories originating in scientific communities influence the circumstances of the society at large in desirable or undesirable ways. These theories should, therefore, be allowed to be scrutinized by the members of the society at large. The social arrangements within the science communities may be hierarchical, giving rise to exclusionary, oppressive theories; undemocratic political, economic interests of the funding agencies may preponderate and dictate content. It is extravagant in these circumstances to pretend that methodological rigour ensures a complete correspondence between scientific theories and the world in the vein of classical epistemologists, who are totally blind to any sociology of knowledge. I would like to draw upon the Kathryn Addison's assessment of Wilson's Sociobiology<sup>2</sup> as demonstrative of the claim that scientific practice is colored by biases enmeshed in the wider society; and that, theories influenced by certain biases are harmful to the population they affect.

Wilson and Brash<sup>3</sup> seek to establish the justifiability of social arrangements by division of labor and power- a feature, presumed by them to be universally characterizing animal and human societies. They construe inclusive fitness, explaining male dominance, aggression, war as a positive value. It is an essentialist, biologist, exclusively masculine characteristic in their opinion. If positive values are necessarily masculine, nature is sexist. If so, there should not be anything in principle objectionable about patriarchal, andocentric, sexist social arrangements. This obviously political understanding of the nature of society ( science ought to be sanitized of all political investments officially!) has won remarkable acclaim in scientific parlance and has been incorporated in school curricula. This questionable view, based on partial observation and insufficient criticality is a feature not of softer social sciences, but of an almost hardcore biological science. This kind of a worldview conclusively negates the possibility of any theory- neutral observation. As already pointed out, observation is absolutely

conditioned by tacit metaphysical assumptions, social, political prejudices and interests, contextual factors internalized by the scientists by virtue of membership into their communities, as well as by prejudices acquired from the external, larger community and by subjective idiosyncrasies of individual scientists. The scientists observe reality through the intervention of these lenses. They choose data as evidence in conformity with background assumptions ingrained in thought. Lynn Hankinson Nelson<sup>4</sup> makes an exhaustive list of background assumptions determining observation of sociobiological reality by Wilson and Barash and choice of data as evidence by them. They include:

- a) the assumption that human social behaviour and organization are biologicistic and genetically determined. Their full explanation is available in biology.
- b) that human behaviour is homogeneous across histories and cultures.
- c) that genetic reduction is a broad spectrum explainer. All complex behaviour is reducible to this.
- d) that inclusive fitness is brought about by a linear genetic encoding, facing negligible competition and allied assumptions.

The ontic categories made use of in these sociobiologists' thesis include male dominance, male fickleness, female coyness, war, rape and like ones that are grounded in a hierarchically dualised observation of social reality. Sexual dimorphism is a postulate, a foundation of this kind of sociobiology. The model of explanation is linear, hierarchical- deducing complex behaviour from genes, construed as the master, the controller. The advocates of this model are oblivious of the possibility of alternative interactive, participatory, complex models of explanation, independent of master molecules or controllers.

Oversights of Wilson and Barash include the fact that sexual differentiation is an exception, rather than a rule of Nature; that biology could be invoked to explain sexual dimorphism in association with cultural, political variables- not to explain unilaterally in isolation; that human social organizations do not universally involve controllers and that male aggression is not a universal feature of societies and cultures. They also lose sight of the historical phenomenon that enthusiasm about explanation in terms of sexual dimorphism is enhanced at phases in which women achieve co ordinate excellence in typically masculine fields like mathematics, medicine, other cognitive areas, and prosper in the public domain of politics, administration, business and so on. The selectiveness of Wilson's and Barash's observation can be explained predominantly by their exposure to the naturalness of male domination, typical to western scientific and non- scientific communities. Their political preferences, interests are also responsible for partiality of observation.

Philosophers like Rae Langton<sup>5</sup> emphasize that approaching reality through the lens of hierarchical dualism is responsible for this distorted vision of reality on the part of some scholars like Wilson. Hierarchical dualism may be defined as a tendency to dichotomize reality into centre and margin in a valuational, judgmental manner. The centre is stipulated to be characterized by a set of positive values like selfhood, reason, autonomy, aggressiveness, civilization and so on, while the marginalized

component of the binary is accorded the negative, pejorative counterparts of these qualities, like emotion, body, lack of autonomy, being a part of unruly, enigmatic Nature, submissiveness and so on. These so-called aberrations are then attributed to the nature of slaves, colonized, coloured and racially peripheralized people, women and so on. The essentialization of inferiority justifies objectifiability, liability to be subjugated. The belief in their natural inferiority, however, is a false one. It is false, because it does not fit the world by itself. The world adapts itself to suit the belief, says Langton. She means that power constructs the world to suit this belief. It lacks the direction of fit requisite to truth. Objectivity needs to be intensified to ascertain the correct direction of fit. To enhance objectivity, vision needs to be liberated from the impact of hierarchical dualism. Cleansed of it, the error in the modality of the belief manifests itself. The inferiority of the constituents of the margin would be seen as contingent, as a social artefact.

The utopian nature of Langton's expectation is borne out by the underdetermination problem. Reality fails to be accessed directly, transparently. Vision fails to be sanitized of subjective, contextual factors and myriad background assumptions. Observational data are invariably chosen as evidence in conformity with these predispositions. The official methodology of science needs to be supplemented by a mechanism to segregate pernicious prejudice, bias from resourceful ones. As previously pointed out, the positivists' preoccupation with rigour is not sufficient for achievement of reliable representations. No amount of rigour can ensure complete elimination of contextual factors. The refusal on the part of logical and postlogical positivists to see this may be due to their anxiety about a fusion of the rational and the social that a recognition of the context of discovery entails. However, a fusion of the rational with the social is likely to induce system collapse only in the context of a bivalent logic. The rational does not, as a matter of fact, preclude the social. It is obligatory to allow a combination of the social and the rational in any methodology of science, as the social construction of science is axiomatic. It is particularly important for Kuhn to criticize this lack in the traditional methodology, as he is so serious about the sociology of scientific claims.

Kuhn needs to be appreciated for his insight that it is the community, not the individual, who is the primary knower. The individual acquires knowledge with the help of public linguistic norms and conventions, communitarian aspirations and goals, epistemological and other criteria of acceptance recognized by the community. Kuhn realizes as much at a historical epoch, dominated by the logical positivistic glorification of epistemological individualism and context transcendence of justified knowledge claims. But in his capacity as a proponent of situated knowledge, he ought to have challenged the individualistic, acontextualistic methodology of the logical positivists much more robustly.

Moreover, science communities are not closed systems, as Kuhn believes. They expand into the community at large. Science communities labour under patriarchal, androcentric, sexist, misogynistic assumptions as much as non-scientific communities. These biases are freely transmitted from scientific

to non- scientific communities and vice versa. The official status of science communities as insular, polarized from ordinary non-technical people's communities helps science communities to evade social criticism. The argument in favour of escaping critical review is that insularity, autonomy is necessary for objectivity; that objectivity will be compromised if the scientist is not allowed unrestrained cognitive authority in resisting social interference. This argument is flawed. Social dialogue and review are likely to enhance objectivity by resisting debilitating values, idiosyncrasies of scientists and encouraging facilitating values. In the absence of a community wide vigilance, there is every possibility that the defects vitiating accounts based on the grand metanarratives of reason and on the proposed theory-neutral observation language might vitiate scientific content too. The preceding considerations appear to require a socialization of methodology to preclude ideology having a field day. Values and politics invariably invade theory. Methodology should have its own mechanism to encourage, incorporate facilitating values and resist Eurocentric and allied values.

Negotiation with the marginalized is a very effective tool of defying various kinds of centrism. Democracy is a truth- facilitator. It fortifies objectivity and impartiality by resisting distorted interpretations constructed by power in social sciences. Acquisition of first hand data of the lived experience of the object of research can be trusted to generate non-exclusionary theory. Distance between the researcher and the object of research needs to be minimized to enable a dialogue between the researcher and the objects or participants of research. Dialogue is expected to sensitize the researcher about her own biases and to strengthen her reflexivity. The marginalized are the strongest critics of the existing social status quo of hierarchical dualism. They are likely to offer valuable insight about dimensions of social reality, not exposed to the privileged, accustomed to view reality through their lenses, distorted by logocentrism, Eurocentrism and other kinds of hierarchical power relationships. This is the method of strengthening objectivity, suggested by standpoint epistemologists. The science community which plays so vital a role in accounting for knowledge, is itself characterized by power inequality. Women within science communities are employed as research labourers. They are seldom allowed to choose problems, determine solutions or explain reality. Non-masculine social problems like violence, incest, marital rape, problems pertaining to mothering are seldom accorded due importance. The marginalized categories are further subdivided into power subgroups. White women, for example, exercise greater authority in research circles than black women, lesbians and so on. Negotiation with the more marginalized class of women might enhance the self-reflexivity of white women. The marginalized categories are divested of semantic authority. As such, the standpoints of classes, caste, culture, race, colour, age, ability and other categories of exclusion and subjugation need to be considered seriously, per se, and as entwined with gender. A critique of mainstream research should be made available to all members of the concerned community. Recommendations suggested by dialogue and critique need to be implemented, with careful consideration of the interest of all rational members of the community.

Complementing the purely quantitative research strategy of mainstream methodology by qualitative insight needs to address the basic presuppositions of a bivalent logic, which opposes the overlap between pure, theory-neutral observation and reason and emotional, bodily, social factors. It may be fruitful to attend to the suggestions of Val Plumwood about a non-colonial logic which dualises mercilessly. The Aristotelian dialectical system also needs to be consulted to stipulate conditions of Ideal dialogical situations, so that contextual factors do not overdetermine theories. Traumatic revolutions in science, requiring paradigm shifts, as visualized by Kuhn, could be checked to a certain extent by socializing methodology to suit socialized cognition.

#### Notes:

1. Lynn Hankinson Nelson, *Who Knows: from Quine to a Feminist Empiricism*, Temple University Press, Philadelphia, 1990.
2. Ibid.
3. Ibid.
4. Ibid, p146..
5. Rae Langton, "Beyond a Pragmatic Critique of Reason", *Australasian Journal of Philosophy*, Vol. 71, No.4, December 1993.

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