



Collective health paradigms: a brief reflection

Paradigmas de la salud colectiva: breve reflexión

Nunes, Everardo Duarte¹

¹ PhD in Sciences.
Collaborating professor,
Faculdade de Ciências
Médicas, Universidade
Estadual de Campinas
(UNICAMP), São Paulo,
Brasil.
evernunes@uol.com.br

ABSTRACT The article discusses the possibility of applying Kuhn's concept of paradigm to collective health. The concept and its use in epidemiology, planning and the social sciences are reviewed briefly. The study stresses the multi-paradigmatic character of collective health, resulting from the convergence of multiple epistemologies and the involvement of diverse fields such as the biological sciences, philosophy, the social sciences and humanities.

KEY WORDS Knowledge; Scientific Domains; Collective Health.

RESUMEN El artículo analiza la posibilidad de aplicar el concepto de paradigma kuhniano a la salud colectiva. Revisa brevemente el concepto, así como su uso en la epidemiología, en la planificación y en las ciencias sociales. Destaca el carácter multiparadigmático de la salud colectiva, resultado del encuentro de múltiples epistemologías y que involucra campos tan diversos como las ciencias biológicas, la filosofía y las ciencias sociales y las humanidades.

PALABRAS CLAVES Conocimiento; Dominios Científicos; Salud Colectiva.

INTRODUCTION

Recently, while commenting on the fiftieth anniversary of the publication of the book *The Structure of Scientific Revolutions* by Thomas Kuhn, Naughton (1) analyzed the importance of the work in spreading the concept of “paradigm,” which became one of the most cited terms both inside and outside of the field of science, with Kuhn’s work becoming one of the most important in the academic field. This led me to revisit the question in the field of collective health.

Thomas Kuhn was born on July 18, 1922 in Cincinnati, Ohio. He received his undergraduate degree in physics in 1943 from Harvard University; from the same institution, he earned a Master’s degree in 1946 and then a PhD in 1949, both in the field of physics. There he devoted himself to teaching science to humanities students. In 1956, he took up a post at the University of Berkeley as professor of History of Science; in 1964 he joined the faculty at Princeton University and, in 1971, moved to the Massachusetts Institute of Technology (MIT) where he stayed until the end of his academic career.

As Naughton informs, Kuhn wrote *The Structure of Scientific Revolutions* in Berkeley in 1961, and the work was published in 1962. In Naughton’s words:

Despite the 172 pages of the first edition, Kuhn – in his characteristic, old-world scholarly style – always refers to it as a mere “sketch.” He would doubtless have preferred to have written an 800-page doorstop. But in the event, the readability and relative brevity of the “sketch” was a key factor in its eventual success. Although the book was a slow starter, selling only 919 copies in 1962-3, by mid-1987 it had sold 650,000 copies and sales to date now stand at 1.4 million copies. (1)

The objective of this work is to consider some of the aspects of the concepts developed by Kuhn and apply them to the analysis of collective health.

CONCEPTUALIZING THE TERM “PARADIGM”

In 1962, when *The Structure of Scientific Revolutions* was published, Kuhn (2) associated the word paradigm to the comprehension of scientific progress, which then gave rise to the concepts of “normal science,” “anomaly” and “revolution.”

Maia (3), in her analysis of Kuhn’s proposal, highlights that the paradigm can be seen as a “presumed mental structure that is useful for classifying the real before study or deeper investigation, which includes elements of a methodological, scientific, and also metaphysical and psychological nature, among others.” Normal science is understood as the period of validity of a specific paradigm that, once accepted by the scientific community, permits the advancement of knowledge. This advancement is interrupted when a paradigm cannot resolve so-called “anomalies” that, by escaping control, provoke a crisis that can only be solved when a new paradigm arises.

Along with other authors that have studied the paradigm issue, Maia emphasizes that:

As a result, scientific revolution emerges: the way to observe what is real changes, new paradigms are created. The adoption of a new paradigm, at the individual level, is described by Kuhn as a sort of “conversion” that involves a whole set of possible reasons. After the adoption of a new paradigm, a period of normal science starts until a new crisis surfaces. (3) [Own translation]

In his book upon which this discussion is based, Kuhn, using the example of physical optics, writes: “These transformations of the paradigms [...] are scientific revolutions, and the successive transition from one paradigm to another via revolution is the usual developmental pattern of mature science” (2 p.36).

With his ideas, considered revolutionary at the time, the author produced a most important change in the way scholars viewed science. As rightly mentioned by Naughton (1), before Kuhn, a “Whig” interpretation of history (a) prevailed among researchers and theorists to understand

the natural world; instead of constancy and cumulative “progress,” Kuhn saw discontinuity.

Accordingly, Kuhn’s own ideas include a paradigmatic change in the history and sociology of science. It is important to mention that his concept of “paradigm” was coined to distinguish the social sciences from the natural sciences; Kuhn does not consider the term “paradigm” appropriate for the social sciences, given that the latter deal with “polysemous concepts,” as will be explained later.

It can be seen that the author’s main concern was to explain the evolution of science through the play of social relationships in the scientific field: science advances when scientists are trained in a common intellectual tradition which is used to solve the problems that it poses.

Kuhn’s ideas have undergone many analyses, the first of which was made soon after the publication of his book. On July 13, 1965 a seminar on “Criticism and the Growth of Knowledge” was held at Bedford College (University of London) where a respected group of science scholars discussed Kuhn’s work. Among the papers that have become a reference for studies on paradigms, one of the most cited belongs to Margaret Masterman (1910-1986) (4), which was written and published after the seminar. According to Masterman, Kuhn uses the term “paradigm” in twenty-one different senses (b): “universally recognized scientific achievement”; “myth”; “philosophy” or “constellation of questions”; “textbook or classic work”; “tradition and, in a way, as model”; “scientific achievement”; “analogy”; “metaphysical speculation”; “accepted device in common law”; “source of tools”; “standard illustration”; “device or type of instrumentation”; “anomalous pack of cards”; “machine-tool factory”; “gestalt figure”; “set of political institutions”; “standard applied to quasi-metaphysics”; “organizing principle”; “general epistemological viewpoint”; “new way of seeing things”; “broad sweep of reality.”

The author draws attention to the fact that “not all these senses conveyed to the word “paradigm” are incompatible: some can even be clarifications of others” (4 p. 168).

In an attempt to systematize this diversity, asking if there is either a common ground within these senses or a general philosophical link, or if these same senses simply constitute a succession of occurrences in history, Masterman (4) proposes a

systematization of the paradigms into three groups or types: “philosophical” (also known as “metaphysical” or “metaparadigms”); “sociological”; and “artifact” or “construct” paradigms. She discusses these three groups extensively, although we will not go into them in this work. Rather, we will examine some aspects that will help us understand the expansion of the notion of “paradigm” to other fields of knowledge not addressed by Kuhn.

It seems that the perspective of the sociological paradigm – as a set of scientific habits that can lead to problem solving – favors the expansion of its scope, for example, into the healthcare field. It is also clear that these habits can be “intellectual, verbal, behavioral, mechanical, technological, and can work either individually or simultaneously; depending on the type of problem being solved” (4 p.169).

Similarly, the *philosophical* concept of paradigm also allows for a comprehension beyond the limits of paradigm as a model, so as to amplify its meaning. And paradigm as an artifact or construct can be used beyond the sociological or philosophical sense “because only an artifact can solve a puzzle” (4 p.175).

PARADIGMS AND THE HEALTH FIELD

Since collective health is a field in which social sciences play a major role and its collective aspect is accepted within great conceptual diversity, as already pointed out by Donnangelo (5), collective health could be said to have the characteristic of being pluridimensional. Therefore, it is difficult to apply the original meanings of paradigm to this field; added to this, a paradigm has as a basic characteristic incommensurability.

However, if we take the meaning given by Kuhn in the year 1969 (2 p.269) in the postscript of his original book, which describes a paradigm as a “an entire constellation of beliefs, values, techniques, and so on shared by the members of a given community,” it might be possible to state that collective health approximates the concept of paradigm.

It is also interesting to mention that it was in this edition that Kuhn included the concept of “*disciplinary matrix*” to distinguish among the

different meanings given the term paradigm in the first edition of his book. Kuhn explains that it is

...“disciplinary” because it refers to the common possession of the practitioners of a particular discipline; “matrix” because it is composed of ordered elements of various sorts, each requiring further specification. (2 p.279-280)

He also distinguishes the following components in the *matrix*: a) “symbolic generalizations,” to refer to scientific laws; b) “the metaphysical parts of paradigms,” alluding to models or analogies; c) “values,” for example, “quantitative predictions are preferable to qualitative ones” or “in judging whole theories,” and d) “exemplars.”

According to Kuhn the notions of *exemplars* and *disciplinary matrixes* are different. Regarding the first notion, he states:

For it the term “paradigm” would be entirely appropriate, both philologically and autobiographically; this is the component of a group’s shared commitments which first led me to the choice of that word. Because the term has assumed a life of its own, however, I shall here substitute “exemplars.” By it I mean, initially, the concrete problem-solutions that students encounter from the start of their scientific education, whether in laboratories, on examinations, or at the end of chapters in science texts. To these shared examples should, however, be added at least some of the technical problem-solutions found in the periodical literature that scientists encounter during their post-educational research careers and that also show them by example how their job is to be done. (2 p.286)

Disciplinary matrixes are shared elements that take on the relatively unproblematic characteristic of professional communication and the relative unanimity of professional criteria within the center of a community.

Some studies show the use of the term “paradigm” to be widely diversified among collective health authors, meaning “reference,” “theoretical-methodological reference,” “emblem,”

“lifestyle,” “worldview,” “ideology.” All of these uses are fairly distant from the precise theoretical framework posed by Kuhn (6). Undoubtedly, the idea of “disciplinary matrix” presented above would be an alternative to the use of the term “paradigm” in collective health.

In a highly developed analysis, Paim and Almeida Filho (7) conclude that, although it does not constitute a paradigm *per se*, collective health, as an ideological movement committed to social transformation, may articulate with new scientific paradigms capable of addressing the object “health-disease-care,” while respecting its own historicity and integrity.

DISCIPLINARY FIELDS IN COLLECTIVE HEALTH

Other issues should also be taken into account, for example, the fact that collective health is composed of disciplinary fields that in their constitution comprise diverse “paradigmatic histories.”

According to Castiel’s analysis (8 p.33), for example, epidemiology has “within its theoretical framework, a notoriously positivist paradigm: observation of data from experience, of the laws that rule the processes of disease causality.” In reference to this topic, Almeida Filho (9), cited by Melo Filho, classifies the “paradigms of epidemiology” as follows:

The first, identified with causality, considers the disease as translated by the Clinic as its object and uses causal models whose mathematical reduction is performed through simple linear functions, the experimental demonstration being its criterion of proof. The second, the stronghold of most epidemiologists, known as the risk paradigm, examines a residue-object composed of the “leftover” of what is not explained by probabilistic determination, uses extended linear functions, and its explanatory potential stems from prediction. Finally, Almeida Filho (9) surmises the emergence of a third paradigm based on the creation of totalized objects, apprehended through dynamic system models whose explanatory efficacy derives from structural

inference, mainly characterized by indeterminacy. (10 p.762) [Own translation]

Melo Filho (10) criticizes this classification and warns that

In Almeida Filho's classification, based on the characteristics attributed to the research objects, the absence of a precise indication regarding how to frame the social epidemiology movement can be observed. Perhaps because he considers that it has been incapable of constructing a new object to be analyzed using appropriate and efficient instruments and technologies, Almeida Filho, making digressions about the emergence of a new paradigm, says: "In many research models of what is called social epidemiology, for example, totalized objects, dynamic systems and historical-structural procedural approaches are proposed. How can this aim become operable? By conducting case studies, operability surveys and secondary data evaluations? In my opinion, these are mere letters of intent that are not fulfilled with the excuse that the objects are complex and insubordinate and that the techniques are poor and committed. However, the same epistemology that would support such justifications (and that in the near future, I hope, we will all share) says that the objects of knowledge are truly complex by definition, constructed by practice, and that the techniques of approach are dominated by this" (10 p.122). [Own translation]

In Melo Filho's estimation (10), this proposal does not address or minimizes the question of values. According to Melo, based on Hellerian conceptions, values are central in the construction of scientific knowledge and have been essential in the construction of social epidemiology in Latin America, lending it a counter-hegemonic nature in opposition to the official character of epidemiology.

Generally speaking, within the field of health planning, the term "paradigm" is used infrequently. When referring to the trajectory and phases of planning in Latin America, experts use other terms such as: "approaches," "trends," "models"

(11,12). In the same article, Rocha (13) uses the terms "model" and "paradigm" and Buss (14) when commenting Rivera's book *Planejamento e programação em saúde: um enfoque estratégico* also uses the term "paradigm" and "approach" within the same text. Regardless of the terminology applied, they all refer to planning and its normative, strategic, participatory and communicative natures, which include in their explanatory rationalities theoretical concepts, especially those developed by Mario Testa, Carlos Matus and Jürgen Habermas.

In the social sciences, the use of the idea of paradigm has been highly problematic, even critical. Among the authors that have tried analogy, Wolin states that "political theories can best be understood as paradigms and that scientific study of politics is a special form of paradigm-inspired research" (15 p.174). According to Wolin:

When applied to the history of political theory, Kuhn's notion of paradigm, "universally recognized scientific developments that, for a time provide model problems and solutions to a scientific community of practitioners," invites us to consider Plato, Aristotle, Machiavelli, Hobbes, Locke and Marx as the counterparts, in political theory, to Galileo, Harvey, Newton, Laplace, Faraday, and Einstein. Each of these writers in the first group inspired a new way of looking at the political world; in each case their theories proposed a new definition of what was significant for understanding that world; each specified distinctive methods for inquiry; and each of their theories contained an implicit or explicit statement of what should count as an answer to certain basic questions. (15 p.175)

It is clear that, in this sense, paradigm means general orientation. To Bernstein (16), even understanding great political philosophers as paradigmatic bears no resemblance to "normal science" in political theory. This similarity was observed by Wolin: "we conceive of political society itself as a paradigm of an operative kind."

Social sciences, as already mentioned, are multiparadigmatic; therefore, from Kuhn's perspective, the notions of paradigm used in the field of natural sciences cannot be applied. Dogan (17

p.1226) revisits this issue and highlights that “over-arching theories, that is, paradigmatic frameworks, can be built on more solid ground in the natural sciences than in the social sciences, because in the former truth is universal, in the latter, contextual.” He continues: ““Chemical substances keep indefinitely the same composition and are identical in all latitudes. Not so social phenomena! In contrast with the natural sciences, contextual diversity and social change are two important parameters in all social sciences. Both parameters resist ambitious paradigmatic generalizations” (17 p.1126). This idea was also stated by Souto and Souto:

Sociology has theoretical paradigms (models) only in a broad sense. In a strict and rigorous sense, it does not have them, or at least, not yet. Meanwhile, Physics has paradigms or models in a rigorous theoretical sense, that is, they are rigorously presented and rigorously verified or verifiable. (18 p.11) [Own translation]

Barring the rigor of the Kuhnian version, the notion of paradigm can be applied to social sciences, as confirmed in excellent works from the area of Sociology where such expression has led to relevant discussions. This can be seen, for example, in Cordero Ulate’s work (19 p.4) that, in addition to presenting a review of Kuhn’s thought, analyzes the application of the concept of paradigm to US and Latin American sociologies. For him, “it would be futile to search for sociological paradigms, according to Kuhn’s orthodox definition,” and also

...it is undesirable, at least in this historical context, for there to be a dominant paradigm in Sociology, since it is almost certain that the presence of only one paradigm would indicate lack of freedom of thought in the practice of the discipline given that as long as different social interests exist, so too there will be different sociological conceptions. (19 p.4) [Own translation]

According to Cordero Ulate “a ‘Kuhnian-inspired’ framework could be applied to the development of certain particular schools of sociological thought in the Latin American context,” taking into

account that this would be an adaptation of Kuhn’s thought, that is to say, it could be possible to “reach a definition of paradigm and other Kuhnian concepts susceptible to application in sociology and to delimit the field in which the application of this Kuhnian-inspired framework would be feasible” (19 p.4-5).

Another example comes from a text by Octavio Ianni, where the author uses the word paradigm and explains:

The classic paradigm of the social sciences was established and continues to develop based on reflection on the forms and movements of national society. However, national society is becoming overshadowed, assimilated and subsumed by the global society, a reality that is still insufficiently acknowledged and codified [...] This is a fundamental epistemological moment: the classic paradigm, founded on the reflection on the national society is being subsumed by the truly new, formal paradigm founded on the reflection on global society. (20 p.147-148) [Own translation]

FINAL CONSIDERATIONS

Undoubtedly, fifty years after the publication of his book, Kuhn is still stirring debate. In his conclusions, Naughton (1) comments that when Kuhn wrote his book physics was the queen of sciences, while today that role has passed on to molecular genetics and biotechnology. He asks: “Does Kuhn’s analysis hold good for these new areas of science? And if not, isn’t it time for a paradigm shift?”

Following this question, we direct ourselves to Dogan (17 p.1127), who states: “In the social sciences, theoretical disagreements are beneficial to the advance of knowledge. Nevertheless, the word paradigm has taken root, particularly in sociology, political science, psychology and normative philosophy.” He also says that while the majority of philosophers, historians and economists reject such a notion:

It may be too late now to try to exclude this word from the lexicon, in spite of the fact that many other expressions are available (conceptual framework, assumption, dominant theory, theoretical breakthrough, grand theory, general model, axiom, etc.). It has become necessary to specify it, or to limit its use to particular domains, such as cognitive science, international relations, or hybrid demography. (17 p.1127)

The observations described do not invalidate the extended use of the notion of paradigm in collective health, which basically, may be applied in the following situations:

- 1) To understand it as a field in which health and its historical-social, structural and political determinations are the central core of interest for comprehension supported by concepts such as collective, social, public and institutional.
- 2) To distinguish epidemiological, sociological, anthropological, political, and technical paradigms in their theoretical-methodological-technical constitution, each with their own specificities, which can be apprehended separately or interrelatedly in the study of diversified themes.
- 3) To select research methodologies from the primary theoretical/epistemological domains (positivist/quantitative, interpretative/qualitative, dialectical/hermeneutical) and to allow such studies to be situated "paradigmatically" and methodologically within collective health.

At this point, I revisit the beginning of this work, by quoting Kuhn's revealing words (21) at a conference held in 1989 entitled "The Natural and the Human Sciences." In that presentation, he analyzes his agreements and discrepancies with Charles Taylor, the author of *Interpretation and The Sciences of Man*, published in 1985. When discussing natural and human sciences, Kuhn states:

My disagreement with Taylor was not, I remind you, about the existence of a line between human and natural sciences, but rather about the way in which that line may be drawn. [...] What I'm uncertain about is not whether differences exist, but whether they

are principled or merely a consequence of the relative states of development of the two sets of fields. (21 p.263)

According to Kuhn, an alternative option for drawing the boundary would be

...that natural sciences of any period are grounded in a set of concepts that the current generation of practitioners inherit from their immediate predecessors. That set of concepts is a historical product, embedded in the culture to which current practitioners are initiated by training, and it is accessible to nonmembers only through the *hermeneutical techniques* by which historians and anthropologists come to understand other modes of thought. (21 p.263) (Italics added).

While revisiting the paradigm debate, Kuhn recalls that hermeneutical techniques are the expression of what he calls "hermeneutical basis for the science of a particular period, and you may note that it bears a considerable resemblance to one of the senses of what I once called a paradigm" (italics added). According to Kuhn: "the natural sciences, therefore, though they may require what I have called a hermeneutic base, are not themselves hermeneutical enterprises. The human sciences, on the other hand, often are, and they may have no alternative" (21 p.264).

To conclude his conference, Kuhn raises an issue that I leave as a final reflection regarding the possibility of a "paradigmatic" construction in collective health. Revisiting the issue of the social sciences, "one may still reasonably ask whether they are restricted to the hermeneutic, to interpretation. Isn't it possible that here and there, over time, an increasing number of specialties will find paradigms that can support normal, puzzle-solving research?" (21 p.264). Kuhn follows the example of chemistry in natural sciences, which 200 years ago was denied the possibility of being a science; this example is repeated, a century later, for the science of living beings. He even highlights the possibility of a transition phase already taking place in relation to economy and psychology. Moreover, he states that "in some of the major parts of the human sciences, there is a strong and well-known argument against the possibility

of anything quite like normal, puzzle-solving research" (21 p.264); that being the case, the line between natural and social sciences would be strongly and permanently established.

Regarding collective health, this was an attempt to show its multiparadigmatic nature as a consequence of the confluence of multiple epistemologies, that is to say, the interaction of

interdisciplinary fields as diverse as biology, philosophy, geography, demography, economy, history, engineering, ethics, esthetics, law, education, communication and information technology. Undoubtedly, it is a challenge for all of those working in the field to rethink these issues (c), although it does not cease to be an enriching hermeneutical exercise.

FINAL NOTES

a. British historian Herbert Butterfield coined the term "Whig history" in 1931. This term is widely applied in historical disciplines to criticize any teleological, hero-based or even transhistorical narrative. Cfr. http://en.wikipedia.org/wiki/Whig_history.

b. Kuhn affirmed that Masterman had found twenty-two different ways of use (2 p.279).

c. This work did not touch upon the topic of "new paradigms," an expression that has become very

common both within and outside of the academic field. Cohen (22) analyzes different aspects of the presence of this expression and shows that from 1991 to 1998, the ISI (Institute for Scientific Information) found an increase in related articles, from 30 to 124; the NIH (National Institute of Health), for the same period, shows an increase of 26% per year in biomedical publications. Certainly, an update of this survey should show an increasing number of articles that have used the expression "new paradigms."

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BIBLIOGRAPHIC REFERENCES

1. Naughton J. Thomas Kuhn: the man who changed the way the world looked at science. *The Observer* [Internet]. 19 Aug 2012 [cited 15 Aug 2013]. Available from: <http://www.theguardian.com/science/2012/aug/19/thomas-kuhn-structure-scientific-revolutions>.

2. Kuhn TS. *La estructura de las revoluciones científicas*. México: Fondo de Cultura Económica; 1971.

3. Maia IMMRLS. *O desenvolvimento da ciência em Thomas Kuhn* [Internet]. 2001 [cited 15 Aug 2013]. Available from: <http://www.consciencia.org/thomas-kuhn-ciencia>.

4. Masterman M. *La naturaliza de los paradigmas*. In: Lakatos I, Musgrave A, editores. *La crítica y el desarrollo del conocimiento*. Barcelona: Ediciones Grijalbo; 1975. p. 159-201.

5. Donnangelo MCF. *A pesquisa na área da saúde coletiva no Brasil: década de 70*. In: Buss PM. *Ensino da Saúde Pública, Medicina Preventiva e Social no Brasil*. Rio de Janeiro: Abrasco; 1983. vol 2. p. 19-35.

6. Botazzo C, Carvalho LAC, Martino LVS. *Paradigma em saúde coletiva: revisão crítica de uma categoria complexa*. IX Congresso Paulista de Saúde Pública - 22 a 26 out 2005; Santos, São Paulo, Brasil.

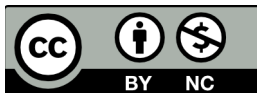
7. Paim JS, Almeida Filho N. *Saúde coletiva: uma "nova saúde pública" ou campo aberto a novos paradigmas?* *Revista de Saúde Pública*. 1998;32(4):299-316.

8. Castiel LD. *Inefetividade e ineficiência: reflexões sobre a epidemiologia e os serviços de saúde de um estado de mal-estar social*. *Cadernos de Saúde Pública*. 1990;6(1):27-39.

9. Almeida Filho N. Os paradigmas da epidemiologia. In: Almeida Filho N, organizadores. A clínica e a epidemiologia. Rio de Janeiro: Abrasco; 1992. p. 90-104.
10. Melo Filho DA. A epidemiologia, os valores e o significado de paradigma. Cadernos de Saúde Pública. 1997;13(4):761-766.
11. Rivera FJU, Artmann E. Planejamento e gestão em saúde: histórico e tendências com base numa visão comunicativa. Ciência e Saúde Coletiva. 2010;15(5):2265-2274.
12. Teixeira CF. Enfoques teórico-metodológicos do planejamento em saúde. In: Planejamento em saúde: conceitos, métodos e experiências. Salvador: EDUFBA; 2010. p.17-32.
13. Rocha JSY. Saúde e planejamento: novos paradigmas. Revista de Administração Pública. 1998;32(2):135-146.
14. Buss PM. Debate, em alto estilo, do planejamento na área da Saúde. Cadernos de Saúde Pública. 1989;5(4):470-471.
15. Wolin S. Paradigms and political theories. In: Gutting G, editor. Paradigms and revolutions: appraisals and applications of Thomas Kuhn's philosophy of science. Indiana: University of Notre Dame Press; 1980. p. 160-191.
16. Bernstein RJ. The restructuring of social and political theory. Philadelphia: University of Pennsylvania Press; 1978.
17. Dogan M. Paradigms in social sciences. In: Smelser NJ, Baltes PB, editors. International encyclopedia of the social and behavioral sciences. Amsterdam: Elsevier; 2001. vol 16. p. 1123-1127.
18. Souto C, Souto S. A explicação sociológica: uma introdução à sociologia. São Paulo: Editora Pedagógica e Universitária; 1985.
19. Cordero Ulate A. El paradigma inconcluso: Kuhn y la sociología en América Latina [Internet]. Guatemala: Flacso; 2008 [cited 15 Aug 2013]. Available from: <http://unpan1.un.org/intrados/groups/public/documents/icap/unpan029028.pdf>.
20. Ianni O. Globalização: novo paradigma das ciências sociais. Estudos Avançados. 1994;8(21):147-163.
21. Kuhn TS. Las ciencias naturales y las humanas. In: Kuhn TS. El camino desde la estructura. Barcelona: Paidós; 2002. p. 257-265.
22. Cohen J. The march of paradigms. Science. 1999;283(5410):1998-1999.

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