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# Development studies, a progressive research tradition

### 1. Introduction

Debates over the legitimacy and methodological soundness of the subject of development, particularly, of development economics are intense<sup>1</sup>. More than a decade ago, Dudley Seers (1979) chronicled the "birth," "life," and "death," of development economics. Seers was complaining about the pervasiveness of orthodox neoclassical paradigms still prevalent among academic development economists. According to him, "economic growth" and "development planning" — paradigms derived from neoclassical economics, including its Keynesian and Marxian versions - were largely unconcerned with the real issues of development in the Third World, Seers contends that the "economic aspects of the central issues of development cannot be studied or taught in isolation from other factors - social, political and cultural" (1979: 712). Seers's (1977: 3) argument that growth itself might not be sufficient or even desirable, and that "a country was not enjoying 'development' unless in addition inequality, unemployment and poverty were declining"

has been widely accepted by the members of the development community, except those who are under the spell of the *homo* oeconomicus thesis.

A closer reading of Seers's 1979 article shows that he was concerned about the influence of positivist and "value-free" economic theories in the practice of development. He was urging us to take instead the subject of development along the original path that most of its founders intended for it nearly three decades earlier. "Development economics" emerged as a separate sub-discipline of economics in the postwar era. Though it emerged as a new sub-discipline which is identified by many economists as "applied economics," it negated itself as an autonomous "research tradition" by still retaining many of methodological and ontological commitments of its neoclassical predecessors. The subject, or field, or domain of study, or "enterprise"2 of development evolved as an independent "research tradition" concurrently and separately from development economics. It may be argued that "development studies" emerged as a separate field of inquiry basically

due to the inadequacies of development economics which still retained many of the trappings of the homo oeconomicus thesis of its orthodox classical and neoclassical forbears. However, some of the original ideational commitments of development economics, along with progressive views and theories on development problems from sociology, political science, geography, women's studies, cultural anthropology, and history, among others, contributed to the gene pool of development studies.

In this article, I shall reconstruct the intellectual history of development studies as an emerging interdisciplinary field. From this vantage point, I shall argue that development studies is evolving into a progressive "research tradition." The exercise is also intended to counter the claim of many that development studies may be an area of inquiry that is in decline. The methodological guidelines for this pursuit are acquired from post-positivist philosophy of science. The category that I shall use to evaluate development studies was developed by Larry Laudan (1977). Laudan developed his model largely based on the foundation provided by Kuhn (1970) and Lakatos (1978) in the historicist and empiricist traditions in the philosophy of science, and at the same time improving on their models. Laudan's model is particularly relevant here because of his assertion that the evolution of ideas and the solutions those ideas provide for solving problems, is necessarily an interdisciplinary process (1977: 174). Although he did not explicitly spell out the dynamics of the formation of "nonstandard" or interdisciplinary research traditions, Laudan's exhortations to take an integrative approach in writing intellectual histories is an important impetus for my approach.

### 2. Research tradition

The positivist tradition in the philosophy of science, originated by August Comte and successively invigorated by Ernst Mach and the Vienna Circle, ran into trouble after the Second World War, when historicist and a few

empiricist philosophers of science started to question its "ahistorical" and "uniformitarian" notion of the progress and change of science. Kuhn, Lakatos, and Laudan, among others, developed their models of scientific change challenging this "received view." Their models of scientific change and progress are being used in disciplines and subjects as diverse as physics, biology, psychology, economics, anthropology, marketing, and literary criticism, to name but a few3. In this paper, I shall use the model developed by Laudan, since it is more amenable to social sciences than those offered by Kuhn and Lakatos<sup>4</sup>. Laudan touches upon the importance of an integrative and interdisciplinary approach in formulating the intellectual history of ideas that lurk behind the evolution of new intellectual domains and areas of inquiry. Besides, Laudan developed his model by improving on the models of Kuhn and Lakatos, removing many ambiguities and conceptual problems in both (Gholson and Barker, 1985).

Laudan argues that "science," whether in its social, natural or physical form, fundamentally aims at the solution of problems (1977: 4-5). To be precise, science "is essentially a problemsolving activity" (Laudan, 1977: 11). The role of theories, argues Laudan, is to provide satisfactory answers to important problems in the field of which they are a part. And theories are developed to solve the empirical and conceptual problems that "arise within a certain context of inquiry" (Laudan, 1977: 15, italics in original). Laudan avers that the rationality and progressiveness of a theory are closely linked with its problem-solving effectiveness, and most importantly, rationality consists in making the most progressive theory choice (1977: 5— 6). However, Laudan argues that individual theories are not the important building blocks of an intellectual discipline. Instead "research traditions" are the building blocks of all intellectual disciplines (1977: 78). While theories are relatively short-lived, each research tradition goes "through a number of different, detailed (and often mutually contradictory) formulations and generally has a long history extending through a significant period of time" (Laudan, 1977: 79).

According to Laudan each research tradition has an ontology and a methodology. An ontology consists of the fundamental beliefs and expectations of the community of people involved in the inquiry, or it may be what is considered as the "object of inquiry" (Laudan, 1977: 79). The ontology and methodology are closely related, because often the "appropriate methods of inquiry are generally compatible with one's views about the objects of inquiry" (Laudan, 1977: 80). Laudan argues that the role of theories associated with a research tradition is to "particularize the ontology of the research tradition and to illustrate, or satisfy its methodology" (1977: 81). Finally, Laudan contends that there may be theories in a research tradition which are inconsistent with each other, "because some theories represent attempts, within the framework of the tradition, to improve and correct their predecessors" (1977:81).

The "fortunes" of a research tradition are linked to the problem-solving effectiveness of its constituent components, viz., the theories. According to Laudan, the relevant relationship between research traditions and theories can be formulated in terms of the concept of entailment. "Research traditions," claims Laudan, "do not entail their component theories; nor do those theories, taken either singly or jointly, entail their parent research traditions" (1977: 84). A research tradition, at best, specifies a general ontology and a general method for solving problems. Thus, the no entailment concept is an important factor in the domain of interdisciplinary research traditions, because sometimes mutually inconsistent theories can claim allegiance to the same research tradition. This is particularly relevant, when evaluating development studies.

Laudan provides an account of scientific progress by demystifying the "universal assumption that progress can occur only if it is *cumulative*, that is, if knowledge grows entirely by accretion" (1977: 6, emphasis in original). The "rejection of progress by accretion" rule and the acceptance that progress does not demand cumulative development are also key factors in my decision to use the Laudanian category. Needless to say, these are important

aspects of the historical evolution of most interdisciplinary fields, including development studies. Although Laudan does not explicitly spell out the dynamics of the development of interdisciplinary fields of inquiry and research traditions, his insistence that all historiographic accounts of the evolution of ideas should have "intellectual coherence" and an "integrative" character are useful pointers to the development of "nonstandard" research traditions. Laudan insists that "nonstandard" research traditions "do have ontologies and methodologies" (1977: 106). Other than offering a caveat that "much research" is needed. Laudan does not shed further light on "nonstandard" research traditions

Laudan stresses historical evidence as opposed to the strictly empirical criteria that other analysts of scientific progress tend to emphasize. Laudan concedes that scientific progress and rationality must be evaluated by taking into consideration contextual factors. like social influence and historical factors. The "problem of underdevelopment" has been a "scientific inquiry", which many cultural anthropologists undertook before economists ventured into it. Myrdal opened his treatise on development in Asian Drama by a plea for a "Sociology of Knowledge" for pursuing the problems of underdevelopment in a "scientific manner." He considered it important to include epistemological considerations in a field of inquiry like development where we are concerned with issues of causation in developing theories and hypotheses.

## 3. The decline of development economics

Development studies evolved as a research tradition after the Second World War, when many economists began to question the adequacy of neoclassical theories to analyze and solve the problems of "underdevelopment" in the Third World where many nations were beginning to gain independence from their colonizers. Though it appeared that this inquiry emerged into a separate sub-discipline in economics, known as "development eco-

nomics," it still retained the methodological and ideological commitments of its neoclassical predecessors. Many of these development economists considered economic development only as an economic problem. As Weisskopf correctly points out, "Far from encouraging the profession as a whole to broaden the scope of its analysis, they lent support to the profession's vested interest in carving out a narrow sphere of arcane expertise" (1983: 898). Most development economists looked inwards for ideas to address the issues of development, instead of following a cross- or multi-disciplinary approach.

However, the idea of development studies as a separate research tradition was still retained by a few of its founders. As Weisskopf indicates, this minority of economists

"raised broader ethical issues and sought to define the purpose of development in social as well as economic terms—arguing the importance of such objectives as social and political equality, the development of communitarian rather than individualistic patterns of life and work, the fostering of ecological balance (between people and nature) and psychological balance (between the material and the spiritual), and the promotion of cultural and institutional diversity rather than the remaking of the Third World in the image of the advanced capitalist societies" (1983: 897).

Some of these ideas surfaced in the late 1960's when analysts like Myrdal, Seers, and Frank began to question the received fundamental principles of development theory practiced by most development economists. Seers's comments on the "death" of development economics continued to reverberate when development analysts like Hirschman and Sen also started to question the uneven influence of neoclassical theories in development studies. Economists like Adelman, Chenery and Streeten demanded that other economists pay attention to the distributional consequences of economic growth, and to devise policies to bring about greater equity and provide for the "basic needs"

of the poorest of the poor citizens of the Third World.

Aware of these new developments, development studies evolved separately as an intellectual inquiry by retaining some of the old commitments of "development economics" sans orthodox neoclassicism, when ideas from other related disciplines and areas interested in issues related to development and Third World problems began to influence the thinking in development.

The intellectual founders of development studies questioned the validity of neoclassical price analysis and Keynesian income analysis as applied to the conditions prevailing in the Third World. For example, the much-celebrated dual model ("economic development with unlimited supplies of labour") of Lewis (1954) and the "stages of growth" model of Rostow (1956), among other prominent economic development theories came under extreme scrutiny in order to ascertain their appropriateness to Third World situations. The intellectual founders of development studies argued that in order to properly address the developmental problems of the Third World a structuralist approach was necessary. A structuralist approach was called for because it "attempted to identify specific rigidities, lags, and other characteristics of the structure of developing economies that affect economic adjustments and the choice of development policy" (Meier, 1984: 135).

Myrdal passionately argued about the irrelevancy of Western economic theories for understanding and analyzing the development problems of the Third World. It may be legitimately argued that the problems of development studies are extratheoretically motivated, too. But the relevancy question raised by Myrdal and others intimately relates to the attempt at using the uniformitarian notion of development and change postulated in the theories of Rostow and Lewis, among others, which were developed on the basis of the experience of the industrialized West. We know that in the case of Laudan, Kuhn, and others, the relevancy criterion is concerned with providing cognitive insights. In development studies, the relevancy criterion in theory choice is undertaken with the same objective. The objective is to devise theories within the unique social, economic and historical contexts prevailing in the Third World, and to solve the empirical and conceptual problems arising in such a pursuit. Myrdal consistently held that all policies and theories practiced in orthodox neoclassical economics cannot address the social, economic and political problems of the Third World. Laudan has correctly pointed out that an absolute measure of the empirical and conceptual credentials of a theory is of no significance when its comes to explaining a phenomenon and in solving problems in its domain.

Challenging the methods of the orthodox traditions. Myrdal argued that an institutional approach is the proper way to study the problems of underdevelopment, and that history, politics, theories, ideologies, economic structures, social stratification, agriculture, industry, population developments, health and education, and so on must be studied not in isolation but in their mutual relationships (1968: x). He exhorted young scholars from the Third World to formulate a new set of theories and ways of addressing the problems of their respective nations, instead of being indoctrinated by rigidly rationalistic and positivistic economic theories. Myrdal urged these students of development and change to forge themselves into a new generation of thinkers who would have the "courage to throw away large structures of meaningless, irrelevant and sometimes blatantly inadequate doctrines and theoretical approaches" to addressing the problems of underdevelopment (1957: 104).

Besides Myrdal, Prebisch, Singer, Hirschman, Baran and later Seers, Streeten, Sen, Frank, Stewart, Sunkel, Furtado, and Griffin, among others, questioned the adequacy of neoclassical theories to address the problems of development. The "stable equilibrium," "comparative advantage" and "free trade" theories of neoclassical economics were attacked by Myrdal (1958). The "realism" of Western economic theories was challenged by Seers (1976). He cautions that they are "limited" and are only a "special case," when

contrasted to the conditions prevailing in the Third World countries. The relevancy question presented earlier applies to Seers's concerns here

Characterizing the development problems of Third World countries as "sui generis". Hirschman (1981) contends that the orthodox theories cannot address their problems. Hirschman rejects "monoeconomics" for the case of the Third World because developing countries as a group are set apart from developed countries. He further argues that traditional economic analyses which are mostly developed and tested in the industrialized countries are inadequate in analyzing the developmental problems of Third World countries. If one wants to use these theories and methods at all, they ought to be recast significantly to suit the Third World (Hirschman, 1981: 3). Commenting on the role of neoclassical theories in development. Sen (1983) posits that neoclassical theories do not apply very well anywhere, let alone in economic development.

In a similar critique of the received view, Meier argues that the "short-period analysis of neoclassical economics" which is based on the assumption of population, institutions, and entrepreneurs is mostly an irrelevant concept to the conditions existing in the Third World (1977: 77). Meier further argues that "Economics must be broadened — indeed, at times become interrelated with other disciplines — in order to explain the determinants of population growth, technological progress, institutional change, and increase in the supply of entrepreneurship" (1977: 77).

Streeten (1976) argues that concepts which are taken for granted in Western economics, such as "capital," "income," "employment," "price level," "savings," and "investment" are absent in many Third World countries and hence theories and models developed for Western societies can not be uncritically transferred to the latter. Streeten (1970) questions, for example, the fundamental postulate of the planning models being applied in many Third World countries. He argues that the use of the concept of a "constant relationship between inputs of capital and the flow of

production" outputs is "completely unwarranted" in the case of the Third World because of the absence of the factors mentioned earlier.

It has become apparent that development economics did not develop into a autonomous research tradition, because it was not bold enough to throw away many of its methodological commitments which were carried over from orthodox economics. It remained a step-child of mainstream economics, which always tried to curtail its freedom to seek bold and imaginative methods of inquiry in the domain of development.

### 4. 'Development studies', A progressive research tradition

Though 'development economics' emerged as a separate sub-discipline of economics, it soon went back to the tradition of its forbears whose adequacy for addressing the problems of development was questioned earlier by many of its founders. The legitimacy of development economics was fought over by those who adhered to its classical version (eq: Lewis, Bauer, and others) and its neoclassical version (Rostow, Schultz, Kindleberger, Little, Myint, among others). Neoclassical development economics began to assert itself as the leading contender for the legacy of development economics. But as time progressed, the development part began to disappear, and neoclassical economics became what Hirschman calls, "monoeconomics." That is, neoclassical development economists try to apply the same theories and methods of analysis, for example, to the north and the south to address the problems of development, despite the disparate social, economic and cultural conditions prevailing in these two different areas.

While development economics seems to have merged with its forbears, development studies began to assert itself as an independent and autonomous intellectual inquiry beginning in the 1960's. Along with Myrdal, Prebisch, Singer and Seers, a new group of thinkers, many of whom were from the Third World, forged a new alliance with concerned scholars

from other areas of development studies. Economists, historians, sociologists, political scientists, cultural anthropologists, feminists, and others interested in issues related to development from a social, cultural and geographical point of view forged their alliance with those who regarded development as a structural and institutional problem. Besides a few 'liberal' economists, radical political economists, dependency theorists, structuralists, and radical educators, also began to contribute to this new research tradition<sup>5</sup>.

The ontological commitment of the development community is that development does not mean just the growth of the economic pie. As Seers pointed out earlier, growth itself might be bad for the poor. In most Third World societies, the benefits of growth accrue to those who already control the social and economic power in the society, thus negatively affecting those who earn constant wages. Besides, growing inflation lessens the purchasing power of the poor more than of the economically powerful in the society.

The new thinking on development was cogently articulated by Mahbub ul Haq. According to Haq, "Development goals must be defined in terms of progressive reduction and eventual elimination of malnutrition. disease, illiteracy, squalor, unemployment and inequalities. We are taught to take care of our GNP and this will take care of poverty. Let us reverse this and take care of poverty as this will take care of GNP" (Hag quoted in Meier, 1984: 160). Self-reliance and distributive development programmes became the cornerstone of the new thinking. The need for equitable development strategies by the active participation of the people who used to be the "subjects" of development was called for. Eliminating this dichotomy between the subject and object in the practice of development is considered the most important step in the introduction of equitable development strategies (Edwards, 1989). The new worldview on development, according to Edwards is concerned with the "processes of enrichment, empowerment and participation, which the technocratic, project-oriented view of the world simply cannot accommodate" (1989: 120).

There is no one particular methodological guideline in the new development studies, apart from the understanding that development studies is an interdisciplinary inquiry in which the views of all participating disciplines are respected. As Laudan pointed out, methodology and ontology are closely related in a research tradition, and we can see that this is very much so in development studies. It is an inquiry in which consensus on addressing the issues of development seems to be the norm. Instead of focussing on quantitative indexes, the new development community pays attention to qualitative factors. Although a strong reading of Laudan may pose a problem here, that is, the methodological and ontological commitments of a research tradition are often cognitive. However, channelling the commitments of development studies's research outcome to converge on the poor can counteract this contradiction.

The problem-solving effectiveness of theories in development studies, compared to the theories in orthodox development economics can be ascertained, for example, by comparing the theory of Lewis (1954) which may be considered as part of the latter, with those in development studies. The traditional versus modern two-sector or dual model of Lewis postulates that the traditional sector (which is mainly the agricultural sector) can supply a potentially unlimited supply of workers to the modern sector at depressed wages. Lewis assumes that the marginal productivity of the worker in the agricultural or traditional sector is low or even negative compared to the modern sector. Thus, by giving a little extra wage, the "underemployed" agricultural worker can be induced to move to the modern sector to work in factories. This "unlimited supply of labor" from the traditional sector can thus create a modern industrial sector.

But the reality of the Third World countries did not prove the "unlimited supplies" theory correct. Drawing on the works of classical economists, Lewis's extrapolation of the same principle from the industrialized countries to the Third World faced insurmountable difficulties. These relate to the assumption of capital formation, employment, savings, tech-

nology, bureaucracy, polity, and several other factors that were different or nonexistent in the case of the Third World. In the Third World, the massive rural migration to the urban modern sector did not create more employment and rapid industrialization. Instead, such migrations resulted in urban ghettos in Third World urban centers like Calcutta, Bombay, Cairo, Mexico City, and Lagos. The lack of problemsolving effectiveness of Lewis's theory when applied to the Third World is more than apparent here<sup>6</sup>.

On the other hand, the new approaches introduced by many of the practitioners take into account the factors that Lewis failed to include in his model. Modern development, thinking largely, takes an "informal" approach to analyzing development problems rather than using rigid, formalized and mostly quantitative methodological guidelines prescribed in formal disciplines8. The usefulness of prices and incentives are not completely discounted in development studies. However, instead of treating them as the ultimate tools in an unregulated market place under the premise of homo oeconomicus, they are treated as part of a comprehensive political economy approach to addressing the issues of development. The importance of the "informal sectors" in development is highly appreciated in development studies. Above all, the method of inquiry in development studies may be put, in short, as follows: "what is required is not a programmatic economic policy orientation but a much more fundamental and interdisciplinary analysis of the historical, social, political and economic forces that shape the environment in which development takes place and that condition the possibilities for change" (Weisskopf, 1983: 897).

The "enterprise of development" is a large and eclectic research tradition, in which theories based on several different approaches to analyzing the issues of development in the Third World co-exist. As Laudan pointed out earlier, theories are not the important constituents of a research tradition. Their role is limited to solving problems that come up in the context of inquiry. Theories come and go. What guides the progress of a research tradi-

tion is the core commitment of its practitioners. Their commitment to looking at the issues of development explained above is the force that binds them together. New theories and hypotheses on structural rigidities, informal sectors, underemployment, technology choice, core-periphery relationship, foreign debt, industrialization, north-south relationship and foreign trade, technology transfer and multinational corporations, entitlements and capabilities, social movements and their role in development are constantly being added to the research tradition, while many old theories and hypotheses are discarded.

In recent development thinking, the emphasis is now on "economic restructuring" as opposed to an emphasis on growth, whether or not accompanied by redistribution (Griffin, 1988: 6). Also, the stress is now placed on "human resources" instead of the previous focus on "human capital formation" (1988: 7). Human resources programmes put emphasis on primary health care, public nutrition and food distribution, family planning, universal primary and secondary education and creating opportunities for women. The new development programmes encourage the active participation and mobilization of the people for whom such programmes are intended. Concerning foreign aid and debt servicing, Griffin notes that the new thinking in the development community has shifted from the "issue of the effectiveness and volume of aid to the need for debt forgiveness and, failing that, the inevitability in one form or another of default and, whether one liked it or not, self-reliance" (1988: 6). Finally, Griffin notes, borrowing a famous aphorism from Marx, that the enterprise of development is as much about changing the world as understanding it.

There is no single overriding paradigm in development studies. Instead, there is only a cluster of sub-paradigms as the new lines of inquiry indicated above show. Laudan clearly indicated that progressiveness of a research tradition is measured by its "intellectual coherence" in holding itself together. He avers that even without well defined ontologies a research tradition can mature and progress, if it has a well-structured intellectual coherence.

This is a particularly important reassurance for a "nonstandard" research tradition like development studies, notwithstanding the fact that it has a well-articulated ontological commitment.

### 5. Conclusion

A reconstruction of the intellectual history of development studies shows that it evolved into an autonomous and progressive research tradition. Development economics may have given the impetus for the evolution of development studies as a new research tradition. Development studies is a progressive and growing (interdisciplinary) research tradition with a core commitment, namely that issues of development must be investigated from the point of view of the people and their institutions instead of through the top-down theories prescribed earlier in orthodox economics.

In a cogent articulation of the intellectual history of development studies, Griffin (1988: 7) comments that, while thinking about development, "One is struck in retrospect by the intellectual excitement of the enterprise [of development], by the quality of the contributions of the best and most imaginative thinkers, and by the sense of high purpose of those who tried to grapple with difficult and important problems." According to Griffin, despite the horrors that surround us such as starvation, destitution, inequality, violence and oppression, most of the people in the developing countries are measurably better off than they were when the enterprise of development or development studies evolved after the Second World War. Griffin (1988: 7-8) further adds that "if ideas have the power to affect events in a fundamental way,... then the ideas of those who have pondered the problems of development have surely resulted in improved well-being for many millions of people." Griffin's positive assessment of the history of development studies is a vindication of the maturity, autonomy, and intellectual vitality of development studies as a new research tradition.

The evolution of development studies vindicates the claim that a vertical or unit approach through a uniformitarian notion of change and progress is the wrong methodology for analyzing the intellectual history of interdisciplinary fields of inquiry. A horizontal, cross-disciplinary and integrative approach to intellectual history provides a better basis for understanding change in such interdisciplinary fields as development studies.

### **NOTES**

- See Wilber (1986) and McCloskey (1983). Wilber edited an issue of World Development (Vol. 14, No. 2, 1986) devoted to methodological issues in economic development studies.
- 2. Wanting a new term for the field of inquiry concerned with development and the understanding of the developmental problems of the Third World, the term 'development studies' is being used to describe this field of inquiry in the rest of the paper. This was similar to the position taken by Edwards (1989). Griffin (1988) refers to development studies as the 'enterprise' of development.
- Kuhn seems to be the most widely applied model. For Kuhn's model as applied to social sciences, see Foster-Carter (1976) and Gutting (1980). For details on Lakatosian models in economics, see Blaug (1980) and Latsis (1976), and in psychology, see Gholson and Barker (1985).
- 4. Kuhn did not feel that social sciences have paradigms and hence considered his model of scientific change not particularly applicable in the social sciences. Despite Kuhn's misgivings, it was in the social sciences that Kuhn's model has applied more so than in the 'hard sciences'. Similarly, Lakatos also held that his model applies only to the 'hard sciences'. Using empirical examples, mostly from physics, to support their theoretical models, Kuhn and Lakatos created the myth that physics is the quintessential science and all other sciences must look up to it.
- Some of the well known people in development studies, besides those mentioned earlier are: Barrington Moore, Fernando Cardozo, Ivan Illich, Paulo Freire, Samir Amin, Denis Goulet, Michael Lipton, Frederick Cooper, Mahmood Mamdani, Peter Evans, Alain de Janvry, John Gurly, Victor Lippit, Charles Wilber, John Weeks, Arthur MacEwan, Ignacy Sachs, Johan Galtung, Agit Bhalla, and Marshall Wolfe, to name a few.
- For a detailed criticism of Lewis's model, see Weeks (1971).
- 7. The extreme relativist position of 'anything goes' popularized by Feyerabend does not seem to be the 'method' that is popular in development studies.
- 8. It is not claimed that quantitative tools, like mathematical and statistical methods are not useful to analyze issues of development.

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