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**The “programming approach” and the “bounded
rationality”.**

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[Abstract]

Based on previous Author's writings¹, which had enlightened the specificity of the “programming approach” in respect to the “positivist approach” of mainstream economics (certainly the “neo-classic”, and also the “evolutionary” one) – on the traces of the last methodological works of Ragnar Frisch, Jan Tinbergen, Wassili Leontief, and Leif Johansen among others – , this paper intends to examine what the position of the argument of the “bounded rationality” is, in respect to the changed paradigm of the aforementioned “programming approach”.

Beyond a rapid recall of the grounds of the programming approach, the paper will also refer to the essentials of the theory of bounded rationality; and it will enlighten its indubitable progress towards a better understanding of the economic or social behaviour of individuals, groups, communities and organizations, for profit or non profit purposes, limiting in such way the postulates (i.e. the meaning and validity) of the most theorems of economics.

At the same time, in such an analysis, the paper will try to enlighten how the bounded rationality approach or consciousness makes no attempt to limit the value or use of reason, or the rational principle at all, but rather a further assertion of it, a more advanced protection concerning its possible misleading or insufficient applications. A rapid reference to the disciplinary origins of the bounded rationality theory – born out of political and administrative sciences, rather than that of economics - will be developed.

Thus the core of the paper will be dedicated to asking if the “bounded rationality principle” which is at the base of the *ex post behavioural analysis*, has a logical sense or an euristic validity as paradigm of the *ex ante operational or decisional analysis*, which – in turn – is at the base of the programming approach.

In response to a negative conclusion, the paper would try to argue the possible implications of such a conclusion on the logical and epistemological development not only of the economics, but also of all other social sciences, which are based on the “positivist” approach; and to outline a kind of programmatic and “planological” reformation of the social sciences themselves.

¹ In particular the reference is to a paper presented to the EAEPE Conference 2000 (Berlino): “*The Programming Approach*”: *Methodological Considerations based on the Contributions by Frisch, Tinbergen and Leontief*”; and – more general – to a book already published on “*The Associative Economy: Insights beyond the Welfare State and into Post-capitalism*” (Macmillan 2000). Furthermore, a book is forthcoming on “*The programming approach: an anti-positivist manifesto*”, of which this paper will be a chapter.

The “programming approach” and the “bounded rationality”.

1. Premise

The principle of “bounded rationality” has been largely discussed and introduced in economic analysis as a criticism of the assumption concerning “rational” behaviour, on which the most important theorems of political economy (reaching back even to their classical origins) were founded and developed.

This principle was drawn from the consideration that, in “reality,” individuals don’t always follow criteria which are rational, but those that are subject to some “limitations” such as information and, also, beliefs, wishes, habits and unconsidered actions themselves. For this reason, it is difficult to identify a standard behaviour of *homo economicus*. Therefore rationality is tinged with the personal limitations of the many *homines* who are acting. It is not possible to build a universal theory on individual behaviours.¹ Bounded rationality which has effect for individuals may also have value for groups and institutions in their historical evolution.

Evolutionary and institutional economics tried to base its theorems precisely on the behaviour of institutions as the primary elements of the behaviour of individuals, and moreover, on the historical, temporal, evolution of that behaviour. It seems to me that this may be considered, in very schematic and succinct terms, the main and essential approach of institutionalist economics.²

¹ Even in the case of ethics, each individual prescription is based on a conventional utility function related to the survival of the community as such.

² For a general appraisal, much more significant of institutional economics,

The purpose of this contribution, however, is not to discuss the institutionalist approach. Since he writing here– personally – is among those who think that the most important and meaningful role in the “explanation” of how economies develop (which also in a certain way determine individual behaviour itself) is performed by institutions, it follows from this that the institutionalist approach seems the best, either from the theoretical point of view or from that of practical utility (on the condition that it also takes into account in some way the role of choices and preferences of individual agents in the case that these are not sufficiently represented by those of the institutions).

The purpose of this contribution is instead to discuss *how the principle of bounded rationality*, as it is applied to either the individualist approach or to the institutionalist approach, *comes to fade* when, rather than used for explicative or interpretive aims, it faces aims of political choice, i.e. programmatic aims.

In sum, this contribution will limit itself to discuss the relationship between the principle of bounded rationality and what has been called in the past the “programming approach” to economic theory.

2. Brief reminder of the programming approach

What do we intend by the “programming approach?” Even if it is not so well-known in the current debate on economic theory, the programming approach has been defined like this by he whom I consider the most modern economist of the century just concluded, Ragnar Frisch:

The programming approach as I would like to define it is very ambitious. . . I shall state briefly the main characteristic of the true programming approach to planning as I see it.

In the first place it is *scientific* and *objective*. It must be based on a clear-cut logical scheme where in particular the number of degrees of

in its more modern developments, I cannot suggest anything more complete and useful than the book of Geoffrey M. Hodgson, *Economics and Institutions* (1988).

freedom in reasoning emerges in a precise way. It is impossible to satisfy these requirements without formulating the analysis in term of a precise theoretical model.

This scientific character of the analysis does not, of course, mean that it is independent of politically formulated goals. These goals do come into the picture, but only as data for the scientific programmer. They serve to define what in the programming terminology may be called the preference function. Sometimes these goals must be formulated *in very specific terms*, and this is perhaps one of the most important differences between the classical economic analysis and the modern programming approach. And the results of the analysis must be presented in such a way that they do not hinder political manoeuvrability. The results must only be in the nature of the advice and they should be formulated in such a way that the responsible authorities can see clearly how much it will cost in terms of the preference function if the authorities decide to depart from the advice for some political or humanitarian or other reasons that are not stated explicitly in the preference function. [Italics original].

This is Frisch's first approach to the programming approach. But in a second place Frisch himself presented a second and third character of the programming approach.

Second, the economic programming model must be *all-inclusive* in the sense that all relevant features of the economy are included simultaneously, at least in an aggregate form. And all relevant alternatives must be included so far as is choice of technology is concerned.

Third, the analysis must be formulated as a true optimum problem, i.e. it must be formulated in such a way that the results emerge as the best possible solution that is attainable under the given conditions. One of the most urgent needs . . . today is to accustom the authorities to think in optimum terms and not to let the decisions on investment projects and on other important aspects of the economy be based ad hoc partial considerations, perhaps or under the influence of pressure groups. [Italics original] (Frisch, 1976, pg. 180-1).³

³ More details about the programming formulation, even in a schematic way, is given in the same paper by Frisch (1976, pg. 181 and following). See also a paper of mine on the "*Programming Approach: Considerations Based on the Contributions of Frisch, Tinbergen and Leontief*" (presented in 2000 Conference of the EAEPE, Berlin). And the same essay, in Italian, can be found in Acocella, Rey and Tiberi, eds., "*Saggi di Politica*

After other indications about the logic of a programming approach, including other directions called “parametric programming”, and the statement that it is necessary to investigate how solutions depend on changes in various data, changes in preference functions, changes in bounds, etc., Frisch argues:

The programming analysis must be truly *operational* in the sense that the concept and quantities involved actually have their counterparts in observable, statistically and technically and economically fairly well-defined phenomena in the economy, and are of such a nature that the results of the analysis can be taken as a guiding principle for *action* on the burning economic political issues. Sometimes this means that the concepts must be specified in considerable detail. And a number of detailed practical questions must be settled regarding the way in which the quantities involved in the theoretical model are to be measured.

To be “operational” means that programming analysis is evidently oriented toward the future and also means that it is decision-oriented, especially toward to future managerial decisions.

In this paper, after having examined the ways in which the administrative sciences may be themselves considered a version of the programming approach, and how both need a sort of integration with all the other social scientific disciplines, we will examine and argue the ways in which the programming approach (applied to both public and private managerial decisions) renders the *principle of bounded rationality* (which has become a central argument in the administrative sciences themselves, and also in the epistemology of economics), irrelevant and inappropriate.

3. The programming approach and the political and administrative sciences

First of all, the programming approach should not be considered associated with a science of *being*, but with a science of *doing*, as should be all other political and administrative sciences. Let us first describe certain general features about political and administrative sciences.

3.1 The birth of a managerial approach

The economic analysis of public programs and the control of the effectiveness of public expenditures have, for many years, been the focus of scholarly attention, but also of attention by political operators and public opinion. All this was born with “*management science*”.

In fact, this science was born when people began dismissing the belief of being able to know and reveal the “secrets of economic life”, or better, “the wealth of nations”, based on the behaviour of the “economic individual” in his universal “characteristics” (or “rules” or “laws”), based on the *homo economicus*, seen as “producer” or “entrepreneur”, (instead of as “consumer” or “customer”).⁴ And this science was born once it was ascertained that the secrets of the effectiveness in the production of goods and services, in the enterprise of production, especially of a large scale, are not due to the geniality and personal capacity of an *entrepreneur–manager* (capitalist of himself or not, operator in “public” or in “private” business), but in *organisation* and in the more or less scientific methods which it itself induces, and to which, and through which, it can be applied.

Therefore, everything was born with the so-called “managerialism”, the assumption of a autonomous profession, with respect to historical “entrepreneurialism”, at the basis of

⁴ For this reason, we affirm that political economy is born more as a “theory of production” than as a “theory of consumption.”

which had been theorised the standard behaviours of enterprises and of entrepreneurs. Thus all was born all that became management and the control of business matters through a managerial capacity which one can learn through education, and not only through experience.⁵

Obviously, everything was born in parallel with the increasing average dimension of enterprises, *by means of concentration*: an historical phenomenon considered ineluctable by all, from Stuart Mill to Marx, from Marshall to Pigou, from Schumpeter to Keynes, and - at least until some years ago - confirmed by historical developments; it was born with big business projected toward multi-sectoriality, and multi-nationality.⁶

All this, however, was born without denying, obviously, the possible role of the “personality” and of the “human factor” in *organisation*. But one is dealing with a completely different role, subordinated to the working modality of the organisation, which is subject (much more than the traditional and personal small business) to the rules of a knowledge which is learned and learnable, of an objective “rationality”, of a largely standardised *know-how*, the bringer of a new profession, that of the manager: *managerialism*.⁷

⁵ The technical and less technical literature on managerialism is endless. This literature emerged from the well known studies developed in the 20s and 30s of the 20th century by Berle and Means (1932), developed also without limits involving economists, sociologists, political scientists, etc., until the present. For a glance, a summary of the different interpretations of the structural changes in contemporary society there is a good essay (in Italian) by Giorgio Ruffolo, on *Big Business in Modern Society* (1967). See also a more recent interpretation of managerialism which I myself have given in a recent work on “*The Associative Economy: Insights Beyond Welfare State and Into Post-Capitalism*” (2000).

⁶ The multi-dimensionality of big enterprises is strongly discussed in the cited work by Ruffolo (1967).

⁷ A modern “cantor” of managerialism is Peter Drucker who in the last thirty years has produced a great quantity of books (mostly bestsellers) on the argument; which I shall recommend to the academic scholar for the numerous interesting analyses about the evolution of contemporary society. (See especially Drucker 1954, 1964, and 1996).

An aspect of the “large dimensions” which is parallel – as has been said – to the profession of managerialism, and to the rise of a the organisational science, is the incredible increase in the size of the public sector of the economy. An increase not only absolute, arising from total growth in population, in employment and in incomes, but also “relative”, i.e. proportional to the increase in employment and of national product. The big business of the private sector has been flanked by the big organisation of the public sector and together they have contributed to laying the foundations of a society based on big dimensions.⁸

Therefore, everything was born from the necessity of assuring *management* for these big dimensions. And on the creation of a “discipline” suitable to forming this management: *management science*.

Born in conjunction with the professionalization of managerial skill, the managerial or organisational science has been practised at all times and in all places.⁹ However, only after World War II – and probably in connection with the technological and organisational tensions of that war – have management and organisational technologies been emphasised on a large scale.

With management science and organisational science,

⁸ Even on the huge growth of the public sector in advanced economies during the last century (with the amount of outlays increasing from about fifteen to fifty percent of GNP in the average OECD countries) there has been developed a very large literature. A synthesis of the subject with adequate bibliographical references can be found in chapter nine, “Expansion and Decline of Public Service”, of the work cited by the writer on the “Associative Economy” (Archibugi, 2000).

⁹ Peter Drucker, the fertile philosopher of managerialism recalled above, says, “Management has been around for a very long time. I am often asked whom I consider the best or the greatest executive. My answer is always ‘the man who conceived, designed and built the first Egyptian pyramid more than forty thousand years ago – and it still stands.’ But management as a specific kind of work was not seen until after World War I – and then by a handful of people only. Management as a discipline only emerged after World War II.” (Drucker, 1993, pg. 39). Something of this sort could also be said of programming approach.

management and organisation themselves become the object of knowledge and of analysis: How does one manage? How does one organise? But in this sense the “science” was not born as a “positivist” science, i.e. a science aiming at the analysis and discovery of “objective” rules and laws of functioning, concerning something that is natural and independent of the will of the subjects, *managers* and organisers. In this case, one deals, as said, with a science of *doing* and not of *being*; a *science of action*.

However, even if the distinction between the two scientific approaches has been largely accepted, it has been more difficult to arrive at the logical consequences of such a distinction (which, moreover, applies to most of the concepts of political science).

In fact, organisation and organisational problems, have not been the objects of study and response on the part of sociologists or - for the most part – political scientists, because their disciplines were, and still are, oriented toward *what is* (to being) and not toward *what to do* (what ought to be). Therefore, such sciences have not been concerned with the comprehensive framework of the sciences of being, the positivist sciences, not unlike what happened with juridical or economic sciences. It was straying beyond the borders of the framework from an epistemological point of view. In fact organisation locates itself on a plane (the pragmatic or action-oriented plane) which is incompatible with that of the common concept of science. Its “science” (if it is still legitimate to use this word; it depends in fact on how much we are disposed to change its meaning) answers to the epistemological question: How to do? Instead of to the question: What is it?

3.2 The decision-oriented and result-based managerial approach

Organisations therefore are institutions which *do*.

And, as such, they are based on and evaluated according to the results of what they do.

Thus, the results cannot be evaluated except with respect to the aim, the mission, the organisation's objectives. If we keep clear the nature and function of the organisation with respect to the other societal institutions, we are obliged to delimit the science of organisation in terms of a "science of results", a science of performance to achieve a result.

This is the reason why a correct vision of organisational science precisely concerns the *result-based* nature of the science.

The result, in an organisation, is always oriented toward the externality. Society, community, family, are self-referential institutions, and are ends in themselves, and in a certain way are self-sufficient. They exist in themselves; they exist because they exist. But all organisations exist only *if and for as long as* they achieve results to provide to their externalities. Otherwise their existence has no sense.

Internally, an organisation only has costs. It exists, however, only if it produces *benefits and profits*. But these will only exist *if the results are acknowledged from the outside*, in one way or another.

The results of an hospital or of any kind of health care organisation, is the recovery of the patients. The results of a school or university are the graduates which will introduce into their work and lives what they have learned. Not unlike a business enterprise which is judged useful if (and only if) there are customers who purchase its products or its services; the customers and the sales are the *results* of a business.

Therefore the costs, in every public organisation, must always refer to results obtained. The principle of any organisation is not to exist in itself, but to exist as a function of the results it produces and the tasks it performs through its actions.

Thus public organisational "science" essentially becomes nothing more than a science of *how to achieve results*, a science of *effectiveness*, understood as the optimal relation between costs and results, between ends and means.¹⁰

¹⁰ See also the work of Drucker on "*Management for Results*" (Drucker,

Results, in effect, are also *the benefits, the dividends* of public organisation. When the organisation is aimed at some results of individual or private interest, they are private dividends or profits, when it is aimed at results of collective or social interests, they are collective dividends or profits, public or social.

But we are dealing in either case with utilities or profits. We are still dealing with *results* (appropriate to the particular context) for every organisation. Organisational science, therefore, is identified by its effort to evaluate the expected results for each organisation as a function of its institutional nature and, overall, of its “mission”.¹¹

Result evaluation, thus, becomes the core of organisational science. It becomes what is currently called, “result-based management”.¹²

4. The concept of bounded rationality within the programming approach

What relationship could be drawn between management sciences understood as result-based sciences, as knowledge directed toward achieving results, and the considerations that are born of these same management sciences concerning a kind of “theory of decision” and, in one of the most diffused expressions, its analytical premises, the “theory of bounded rationality”? What are the implications for planning theory and its programming approach, in other terms, of the arguments that the decisions of public and private decision-makers are “bounded?”

1964).

¹¹ On this point, see an interesting essay by Churchman and Emery (1966).

¹² Even on result based management the literature is very extensive. For an overview assessment I would suggest the edited book by Katryn Newcomer (1996). More concepts on organizational science as a science of effectiveness, on the designing of results, and on the rise of strategic planning can be found in one of my books: *Introduction to Strategic Planning*, especially in chapter 3.

We do not feel that the theory of bounded rationality plays any helpful role in pushing planning to deepen and improve its own methods and to extend its practices, co-ordinated on various scales and operational levels. Through this theory – of which the most influential author is Herbert Simon¹³ – there has been introduced in planning theory a mis-intended mistrust in the prescribed rationality of planning and a pervasive scepticism about the capacity of implementing planning itself.

These equivocations and misunderstandings must be dealt with rapidly.¹⁴

4.1 Imprecision and relativity of the concept of bounded rationality

The well-known assertion (and related concept) of a bounded rationality in decision making especially applied in the case of public choices and public administration, but also valuable for private choices and private management and generally for any kind of planning, is based on a mix of analytical arguments coming from a mix of disciplinary *biases*, which – in spite of their persuasive effect which has so easily made them popular – have made it very confused and misleading in its nature and definition.

For the most part, the meaning of the bounded rationality concept is born out of, as is well known, the ascertainment that in any decision there are always limitations or boundaries of time (in which to make decisions), of resources, of information, of intellectual capabilities, and so on. The obvious conclusion is: decision making is always bound by something.

However, another implicit belief is also incorporated in this assertion. If there were no limitations, a decision could be

¹³ Among the vast production by Herbert A. Simon I would like to suggest specifically those works which seem to me, besides, quite aware of the imprecision and relativity of the bounded rationality concept (Simon, 1962; 1967; 1969; 1983).

¹⁴ Even if – in my frank opinion – they don't deserve much more than this rapid treatment.

“rational” or “optimal”; in practice, such a decision could be “un-bounded”. What would we call it? A “pure”, perfect decision, exempt from limitations?

At this point, however, we must ask ourselves: is there anything in the life of people, in their values, in their actions, in their thinking, that isn’t bounded? Everywhere, man or his society, in any decision as in any reasoning, will be limited by the striving for rationality. But what does all this tell us contrary to the rationality of which they become permanent “searchers” or “bringers”, according to their circumstance? And what does this obvious fact tell us contrary to the other assertion that they should be in any way searchers and porters of such rationality?

Even the purest mathematical theorem is subject, by definition, to the same limitation of knowledge: if in no other respect than to the latter progressions of knowledge of mathematics which it itself has spread!

Imagine if we didn’t take for granted that much of the modelling we create in order to understand, and also to manage the reality of things in certain ways, or to give sense to our actions, was the product of a bounded rationality! But if rationality is bounded by itself, there is no need to introduce the bounded rationality as limitation to itself.

On the other hand, in which way should, or could, our limited knowledge limit the search for knowledge itself? Would this mean, perhaps, that knowing the limitations of every human action with respect of goodness, that we should not try to be good? or knowing the limitation of any aesthetic expression, should we not pursue the beautiful?

Indeed, research of the “constrained” optimum or maximum (or minimum) - which is also the maximum given the limitations - includes the consciousness of the limitations. And it is of little use to say that we will never entirely know these limitations, and therefore, any optimum will never be a true optimum, an absolute optimum, but will always be relative to the limitations we have been able to take into account pro tempore. All this doesn’t exempt us from the intellectual opportunity or duty of pursuing that optimum, that maximum (or minimum) given the limitations (obviously acknowledged).

Nor does all this exempt us from the intellectual utility and task of obtaining a deeper understanding of most of the limitations that we don't know, in order to make the study of this optimum more valid and significant.

Therefore, rather than emphasise the obvious, i.e. that our rationale is limited, we should limit ourselves to deepening our knowledge of – I would say case by case – in any proposition proposed to us in the name of rationality, what is actually limited by conditions or constraints that are not included in the calculus. What does it mean that we should limit ourselves to exploring how the outcome of the rational calculus was not at the level of the rationality claimed.

In other terms it seems to me that rationality in its concrete manifestations or applications can be contested only in the name of a superior rationality. But accordingly this superior rationality must be demonstrated, by including new limitations to the calculus ignored by the proposition which we intend to contest; and not in the name of something like a general alternative to rationality, which does not exist, if not in an act of anti-rational faith: i.e. in the name of an anti-rationality philosophy or irrationalism.¹⁵

But as it is not possible to deny rationality through . . . rational arguments, at the same time it is not possible to attribute to the study of rationality the negative results of a bad application of rationality.

It is only in the name of rationality that we can identify and contest its insufficient applications.

¹⁵ In spite of this, we need to acknowledge that this “fight against reason” and these “crepuscular” and obscure moments of the history of ideas are studded in the entire history of human philosophy that we know, and the history of any civilised manifestation of mankind. But it is not my intention here to philosophize beyond a certain “limit” about the dichotic and dialectical destiny of philosophy

4.2 The bounded rationality, the optimisation principle and the programming approach

From this vision also comes the surpassing of any principle of bounded rationality and a recuperation of the postulate that: *a future decision- or action-oriented analysis is fundamentally optimality-oriented.*

If the analysis is oriented to action (*ex-ante*) and not to the nature of observed things, more or less (*ex-post*), any limitations to the decisional objective fail: the analysis cannot do anything other than to plan the *best result* with respect to the objectives, given the constraints.¹⁶ The limitations are incorporated in planning optimal decisions.

That in *ex-post* reality this “best result” given the limitations may not have occurred, or occurred only in a limited way, has no importance for the planning theorist. This might concern the analysis of *temporis acti*, but not the analysis of *temporis agendi*. Therefore this might interest the “onlooker” – as Ragnar Frisch masterly said defining the programming approach – either it might interest the planning historian, or the kind of planning theorist that is not interested in creating new rational methods to improve planning, but only on making a commentary on the mistakes of the past. But all this does not concern the *planner*, the real methodologist planner (*planologist*), or – on the other hand - the political decision maker¹⁷.

On the contrary, in a programming approach, what could a

¹⁶ The word “optimisation” express in any language a concept of maximum constrained under conditions, which is the foundation of rationality, and which can be expressed also with the words *effectiveness*, *efficiency*, *productivity*, and so on. It is matter of a *relation* which has had and has different nomenclatures (all equivalent, for our discourse) among them we can recall, for instance: end/mean; objective/instrument; result/effort; output/input; outcome/resource; benefit/cost; performance/factor; and so on.

¹⁷ For further considerations on my part, regarding the double, separate roles of the planner-expert on the one hand, and the planner-decision-maker on the other hand, see Archibugi (1998a).

bounded rationality mean for the planner (planning theorist or the decision maker)? That at the time of the decision he should say: “*My preferred solution would be this (A), but I choose, or I suggest this other (B) that is not the best but of which I am equally satisfied; why? Don’t ask me because I don’t know.*”¹⁸ Indeed, if he knew, he would have been obliged to include the reason of this fact in the list of the objectives that he pursues, and within the trade-offs (i.e. optimisation procedure) between different objectives that any decision unavoidably implicates.

We can admit that, in practice, decision-makers could be unconsciously unconscious, or ignorant, of their preferences; but that he could be consciously unconscious of them is something that concerns maybe psychiatry, but not even behavioural psychology! How can this concern the planner, who exists to render explicit and conscious the motivations and the goals of the decision-maker and of himself as planner; or how can all this concern, really!, the “planning theorist”, who should order the process through which to organise the decisional system in the best and most effective way, remains an academic puzzle!

5. Political and administrative sciences and strategic planning

This vision illustrated here allows us to locate in the right dimensions the limited role of *positive analysis* in the programming approach which reflects therefore the essence of the policy sciences, like economic policy, strategic planning, management sciences, and so on.

In effect, the reflection and “science” of administrative and political behaviour can only argue any kind of limitation to possible rational theorems of administration and political action from a position of *ex-post* analysis. Indeed, only in an *ex-post* analysis is it possible to evaluate how much an administrative or

¹⁸ How much more exhilarating it would be if he answered: “*Why? Because Professor Simon said that usually the decision makers like me think of satisfying and not optimising their preferences!*”

political action *has been* bounded (or constrained or conditioned), which would pursue a rational principle of conduct. In fact, it is only by an *ex-post* analysis (say historical) that it is possible to identify those “new” conditions or constraints that have had a negative impact on the implementation and have limited the success of this action.

Here we may introduce a more general doubt on that which we can call a “positivist” pretension of an important part of the political and social sciences: can we elaborate some principles of conduct or suggestions on the basis of historical, *ex-post* evaluation of examined past behaviours, assumed to be orientation principles for future action?¹⁹ Are we sure that what has registered as unforeseen factors in the past can be extrapolated in the future?

We know, obviously (and with great emphasis from political and administration scientists), that the most rational decisions are always limited by an ignorance co-efficient (or limitation of knowledge and information): what then can we extract from an *ex-post* analysis for an *ex-ante* decision? Would it not be better to leave out *ex-post* analysis – of little significance for the future – and to *directly* elaborate, not rules but decisions themselves, on the basis of a decisional process that would be the most rational possible: *i.e.* including (according to our vision above) the maximum possible constraints, conditions, acknowledgeable limitations, given the circumstances, not received in the past but valid for the future.

Is this not the true “programming approach” inherited from Ragnar Frisch and the other founders of planning methodology?²⁰

If we must talk of rules or guidelines, would it not be better if these were taken from the decisional process itself, trying to

¹⁹There is a certain amount of literature on this topic; my preferred references are still Tinbergen (1971a e 1971b), Leontiev (1976), Frisch (1977), and Myrdal (1980).

²⁰ For more detail on this topic see Archibugi (2000b), and chapter two of this a new book of mine (in publication under the title “*The Programming Approach and Economic Analysis: An Anti-Positivist Manifesto and for a Post-Economics Perspective.*”

make it well informed and technically advanced as possible?

Would it not be better, dealing with the future, that the decision, and its process, (rather than exploring the field of past behaviours of groups, communities, cultures etc. and trying to assume a stable “theory”), be based, on the contrary, on an evaluation of explored possible future behaviours, expressly studied or even only hypothesised?²¹ And would it not be better that the decision and its process, oriented in such a way, be acknowledged as a factor affecting those behaviours?

The programming approach postulate formulated above should cut out – as falling outside of the proper field of planning theory – all the endless rigmarole on bounded rationality which has occupied – as we have seen – so much of the political and administrative sciences for so long.

Even admitting, although I personally would be reticent to concede²², that it could be possible to use a “positive” approach in the human social sciences; that is, that ex post scientific analysis of behaviour could be exempt from errors, and that the discovery of regular behaviours (according to someone who is directly determined by the “theory”, i.e. from the innate “rationality” of behaviours) all this has absolutely nothing to do with planning theory (as a result of the reasoning laid out in the previous paragraph and from the postulate that we derived).

This approach may concern the (positivist) sciences of being (admitting but not conceding, I repeat, that these sciences be those related human and social actions) but not the sciences of action (or praxiology)²³ such as planning.²⁴

²¹ This future behaviour of groups, stakeholders, and politicians, which could constitute the real limit to the rationality of the process, should be the object of planning negotiations, but on the basis of an advanced systemic knowledge of the optimal decisions.

²² And the reasons pervade all the chapters of this book starting from the recalling of the Myrdalian thesis in the introduction to chapter one.

²³ I state that the roots of an assertion of this kind may be found in a good deal of American theory of society: especially in Talcott Parson (1951); but even in a good deal of the American philosophy of knowledge (or “pragmatism”): above all in Dewey (1944) or in C.I. Lewis (1946). The foundations of praxiology, as in known, were defined later (Kotarbinski

This is also the reason why I have a greater propensity to not confuse strategic planning with the political and administrative “sciences” discussed above. And why I would be inclined to consider the programming approach as based mainly on a criticism of the approach of those substantially positivist sciences.

To conclude, I think that according to this vision strategic planning doesn’t need a “theory of political and administrative behaviour”²⁵ but simply (if you will) a “planning theory”: a theory, however, only pragmatic and operational, decision oriented, that is, oriented to the improvement of decision rationality and of operational efficiency in any historical, geographical, or cultural conditions.

Strategic planning therefore – as operating in the field of organisations, and more so in the field of public organisations – if understood correctly, represents a pillar, the main pillar perhaps, of that “planning science” (or planology) which is emerging as a confluence of a series of inter-disciplinary or trans-disciplinary fields of studies, and which, I believe, directs us toward a constitution of a new discipline,²⁶ of basic importance for public management and governance, at any level, geographical or territorial.

1965, and Kaufmann, 1968).

²⁴ Furthermore, any debates on the concept of rationality (Cartesian or non-Cartesian, bounded or not bounded) should fall outside the proper field of planning theory. These debates in fact belong directly to the fields of philosophy and epistemology (disciplines for which – moreover – I don’t believe that planners or political scientists are particularly well-equipped).

²⁵ Naturally, as far as political and administrative sciences abandon the “objective” behavioural analysis approach (which we have defined as “positivist”) and adopt, on the contrary, a “programming approach”, decision-oriented, or functional to decision, then the roots of strategic planning on that sciences can be fully recognised, and any needs of demarcation of it from them disappear. Moreover, it could be stated that strategic planning can identify itself in the political and administrative sciences. And the last can identify themselves in the first.

²⁶ See Archibugi (1992, 1996b). See also the Chap.9 of the already cited *Introduction to Strategic Planning* (Italian ed. 2001; English: in preparation)

Therefore strategic planning has as its foundation a clear demarcation from the positivist approach and, on the contrary, a direct relation to the programming approach. This approach is exclusively oriented towards future actions and toward connected decisions. And this approach includes in their entirety in the decisional process the limitations, constraints, and boundaries which may derive from values, viewpoints, cultures, concrete aspirations, resources, and all other things that a truly evolutionary conception of society can contemplate.

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