Complexity and Governance[1]

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1. "Complexity"

About the concept of "complexity", borrowed from certain streams of modern mathematics and physics, everything has been said, and the contrary of everything. It is sufficient to glance at a collection of papers from 1984, organized by the United Nations University in Tokyo, (under the suggestive title of *The Science and Practice of Complexity)* with the participation of well-known scholars from different disciplines like physical chemistry and biology (Prigogine, Atlan), logic-epistemology (Dupuis, Chapman), psycho-physics and neuro-psychiatrics (Laborit, Pribam), sociology (Luhman, Morin), economics (Boulding, La Moine), administrative science (Zeleny), system theory (Maini), geography (Hagerstrand), technology, communications engineering (Klir), and others.

We can not forget that complexity is the antonym of simplicity, and to it is forever counter-posed the relativity of dialectic knowledge. It has no meaning nor life for itself, if not when is counter-posed to its antonym, to the extent that even in its current proposition, it is usually said that managing complexity is possible only by means of a logical simplification of what is complex. And, on the opposite side, when we face something too simple we make recourse to the analysis of its relations with the environment, of its interrelations, or its interdependences, i.e. to its complex relationship.

2. Complexity and forecasting

Perhaps, if there is something that binds the different notions of complexity in a transverse way to the different disciplines represented by the personalities encompassed in the UN University book above quoted, this is its substantially negative content., from physics to biology, from psychology to the social sciences, the concept of complexity has introduced also the notion of a "casual" behaviour, really "chaotic" without order and logic, or *ratio*, whether of nature (in the natural sciences) or of mankind (in the human sciences). Since both "sciences", intended in this way, are founded on a knowledge purpose of *what is*, and not of *what should be*, or of *what is worth* (in other words, they are founded on a so-called "positive" assessment in front of one "normative" or "of valuation," we have to ascertain that the majority of the contemporaneous complexity

theorists (in all fields) would discover and, therefore, assert, in positive terms, the negativity - i.e. the absence of positive knowledge - of its possibility. We have to ask ourselves how the negativity could be possible if it is requisitely "positive," founded, in other words, on positive propositions. This, however, recalls a perennial logico-philosophical diatribe – one that has been handed down from the time of Socrates/Plato until our time – and that concerns the "reasons of irrationalism." The other diatribes, too, being equally perennial (whether it is possible to demonstrate with rational argumentation the reasons of faith, which is certainly not the place to record here). This happens when the antonyms are used as concepts standing by themselves, and when, on the contrary - either in the natural or the human sciences – their dialectical relationship is not seen (or, if we prefer, their dynamic interdependence).

At any rate, the scientific concept that first suffers the repercussion of the "scientific" acquisition of the "negativity of science" is predictability. One of the main foundations of the scientific approach, it seems to me, has always been – and overall since the Galilean definition of the scientific-experimental method – that of the repetitivity of phenomena (natural or social, as you wish); in such a way, it could be established a kind of behavioural "law." A Law that would provide the foundation for, or basis of, predictability.

Now, it seems to me that the theory of complexity, or of the chaos, denies even in the natural sciences (moreover, this type of negation is started exactly in these sciences) the possibility to predict events on the basis of one scientific knowledge. That theory has celebrated a nearly complete triumph of *casuality*, in the negation of its antonym, the "*causality*!"

The development of the system analysis has been, in the century just passed, the attempt to save rationality, even in the face of the collapse of causality principles. But the theory of causes has not stopped there. In practice, it denies even the capacity of structuring "systems," because even that would be subject to unpredictable relations.

In fact, willing to take for granted the theory of casuality and chaos, two different ways are open.

One is to renounce any predictability, and therefore to renounce the assumption of rational behaviour aimed at governing the events in some way, and instead trying only to mitigate the consequences of that behaviour when negative and exalting them when positive. This entails the renunciation of any programming and control of the future.

The other way is to omit consideration and opportunity of forecasting and controlling events on the basis of nonexistent and unreliable laws of behaviour, and to look instead to the building of plans rather than predictions. This could be done either on the basis of behavioural hypothesis of good sense, or on the basis of feasibility analysis or voluntary rational-choices. The "relations" between phenomena, like the selection of the phenomena themselves – in this case – would be an outcome of arbitrariness, "artificial" in the most total sense of the word (excluding a sort of "replicability" or simulation of the natural real that, on the contrary, is often implicated from the "artificial" word) (who ought to and how to proceed with this arbitium is a great problem, immense, but unrelated).

Along these lines, each component of such an artificial model, the variables themselves and the coefficients or parameters that connect them, would also be artificial and arbitrary. The unique, essential purpose and constraint should be the *feasibility of programmes*, and the *evaluation* (obviously positive or negative) *of the actors*.

It is a question, in this case, of an approach that I have elsewhere and for some time now referred to as "programming" or "programmatic," and that is counter-posed, in all senses, to the positivistic approach.[2] This "programmatic" approach constitutes a strongly radical position against the stream in the social sciences and in economics. Economic reflection, indeed, seems to have been based on a positivist approach since its inception, as has a good deal of sociology (which, in its undefined history, has been largely "positivist," even if it has not been systematically theorised as such). These economistic approaches have been sustained by some selection of the most authoritative economists of our time (both Nobel prizes for economics in 1969): notably Frisch, who coined the same term (*programming approach*) concerning the predictability issue that I tried to diffuse; and Tinbergen who, with some papers, aimed to assert the radical, logical and epistemological distinction existing among *planning* and *forecasting*.[3]

The notion of complexity does not miss – as we said – to be used even in the social and political sciences; here it has had the consequence of denying the possibility of planning, and of explaining the difficulty of "governing" events by politics. Even in this case, some parts of the negative analysis make sense and have a foundation. It is about this that we wish to occupy ourselves with this glance on the complexity.

3. Complexity and Governance

In fact, contemporary society for some time has been seen as more complex due to its scarce "governance," in particular its lack of political governance.

Certainly, the prevailing opinion is that even the spreading use of the word governance in English language political and academic literature (and, by extension, translated into neologisms in every language on the basis of the English semantic) is not based on a clear and commonly accepted meaning[4]. However, it

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[2] From this point of view, see my serious writing forthcoming under the title: "the Programming Approach, an anti-positivist manifest towards a post-economic perspective (provisional edition, CP 2002)

[3] Frisch dealt clearly with this in the essay 'A survey of a type of Economic Forecasting and programming', 1962; and Tinbergen in the essays: *'Comment Faut-il Etudier l'Avenir'* and *'Two Approaches in the Future, Planning vs Forecasting'* (mimeograph) (both 1971).

[4] From the other side, we need to take into consideration that – as is signaled to me by a political scientist (Mathias Koenig Archibugi) – the term governance itself is used in a variety of contexts that modify its meaning. For instance, a list of five meanings includes: 1) in the context of economic development, whereby "good governance" is intended as political stability, effectiveness of law, efficient public administration, strong and independent communities and it has been invoked and sustained by the World Bank and other agencies for the development as a condition for effective economic modernization; 2) in the context of international relations, governance is

is difficult to me in this case (let me say, immediately) to accept any meaning for this word different from "effectiveness in the government action," or that – which seems to me the same thing – of "capacity to implement governmental policies and decisions .

In general, therefore, in the frequent recalling of a "governance crisis" I refer myself essentially to those that adopt the same meaning, even if applied to different scales and different types of government: from the "local" government (the meaning of which we ought to try to discern, though that question must not be asked here) to the "national government" (that is still a constant point of reference) and to the "supra-national government" (in its multiple forms, and that – because of the so-called globalisation process – has become a pervasive influence in everybody's lives).

What is the origin of the problem, more and more discussed, that is posed under the phrase "governance crisis?" Commonly, it is asserted that the national governance is compromised and ever-more challenged by two opposite pressures:

– one coming from the increased demand for local government's decisional and managerial autonomy (I will use the increasingly more diffuse term "devolution" to signify this process),

– the other coming from the increased demand, in more than one field, of a supra-national and world government, in all possible forms: from that minimum of convergence of national governments by means of agreement, treaties, intergovernmental institutions, to that maximum of very supra-national and world governments each with its own sovereign autonomy (for which I will use, as already commonly intended, the term "globalisation").

In such a way, governance appears as a concept of "limitation of a government on behalf of another government" (in our case, "local" from one side, "supra-national and world" from the other side). Political science literature today seems dominated by this version. This version, however, is too reductive.

In fact, governance today is challenged even by other structural factors no less important than those of "globalisation" and "devolution." It is challenged, especially in the growing sector of political and public life, by the fact that the expansion of the public activities that have passed in the western countries – just to use a quantitative indicator – from 5-10% of the national production at the

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referred to as problem-solving, that goes beyond the state-national level; 3) in the context of the American-British debates, around the company relations between management and stock-holders, corporate governance refers to the perceived need to improve the accountability and transference of management's actions; 4) in the context of the new strategies of public management developed since the early 1980's, governance is referred to as the need of assuring that the corporations form a public ownership, after the privatisation could furnish certain standards of quality, and to the devolutions of performing services to agencies that are largely self-managed and organized by networks instead of hierarchically; 5) governance is a term used also to indicate a new style of representation, coming from a previous corporative model, and to be identified mainly at the local and regional levels. This refers to the practice of involving, by means of networks, participation and decisional forums, a great variety of social actors such as worker unions, industry associations, corporations, NGOs, communitarian groups and local authority leaders (Hirst in the volume edited by Jon Pierre, debating governance: Authority, Steering and Democracy, OUP 2000).

beginning of the 20th century to 50-60% in the beginning of the 21st century has been accompanied by a gigantic proliferation into all directions and fields of public agencies, not only distinct by geographical and territorial jurisdictional level, but also for a sectorial "complication" of functions and missions. It is matter of myriad "agents" and "organizations" in each country and at the international scale, the principle character of which is not that of their own institutional juridical "status" – which is of the most different nature – but that to pursue course, to think to missions and mandates, to play roles, often not clear and defined, and almost always contradictory, conflictual, and competitive between ones and the others; but in any case commitments of "social interest" and *grosso modo* "public interest"; agencies and organizations that are evaluated in their own effectiveness, with something pertaining to their *doing*, their capacity to produce "results."

Thus, the incapacity of these rapidly growing areas of public activities and/or of a social interest to obtain efficient results, is intended as a measure of the mis-governance of the political and public sector, together with the other already mentioned factors of globalisation and devolution.

In fact, the governance crisis becomes increasingly intended as the mis-government in the coordination for common, optimal ends, in the management of the contradictions, conflicts and competition of such myriad public agencies that have created a sort of political and institutional "market" (well-distinct from the "market" of the goods and services that has characterized the industrial epoch and of the arising capitalism, and on which the traditional economics believed, but with poor results, to represent and to explain the functioning).

Today, political science tries to study and discover such a political market – mis-governed from constitutional and institutional architecture or engineering points of view. It tried to study and discover its functional laws in order to assure to it a better governance. It has always been asserted that, beyond jurisdiction on which to build more efficient decision-processes, this governance would be assured by an extended participation of the subject and interest associations to the common decisions, making them more effective and feasible.[5] This assertion seems quite right and appropriate, except that it sounds a little tautological, because if the decisional ineffectiveness of political institutions is challenged by the "complexity" of institutional conflicts, "contradictions" and competitions, it is obvious that the "participation to the decisions" cannot mean but the overcoming of conflicts, contradictions and competitions which compromise a univocal implementation of the decisions. But the question is always to see how such participation is capable of producing operational decisions that could be effective.

The problem, largely diffused in the ambit of political sciences, has become exactly to understand if (and to measure how much) politics matters. In other

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[5] Another author defined governance in such a way: "at a general level, the government implies the creation and activities of social institutions in the sense of…(O. Young *International Governance* Cornell UP 1994). I share Koenig-Archibugi's opinion that in most abuses of the term it seems to be the common need of describing a form of social conduct, which is not referred to the hierarchy and command, as it is implied by the concept of the government, but on processes of self-organization and horizontal negotiation among a plurality of different actors.

words, how much the political debate, the often very complex procedures of political decision-making, performed by very fatiguing procedural mechanisms, could serve effectively to make decisions so long and difficult into facts and operational reality. This feeds, in other words, the doubt that "democracy" – intended as a decision process that takes into great account the diversity of opinions, various interests, by the major part of citizens – serves effectively to produce valid results for those citizens (beyond generic liberties of expression and agitation on behalf of everybody on the above said problems). This means doubting, in other words, if there exists a real decisional and factual "democracy" in our so-called democratic countries.

I think it seems certain and undeniable that the results seem no more reducible to that of producing profits to the benefits of owners and stock-holders, but to produce results "socially useful," given the great expansion registered by the public sector in the century just closed. It is the increasingly prevalent conflict between what people intend by "socially useful" results that today makes the difference, and no more the conflict between what is "individually" useful and what is socially useful.

This proliferation of public agencies and also of private agencies, but aimed to public cause (like the non-profit organizations, which are incessantly increasing in the more advanced countries, those that are going out from the capitalism and going towards a not-yet-defined economy of the "post-capitalist" kind, and that I have also called "associative"), has completely weakened the juridical-statal model of the hierarchy of functions and mandates, and has clouded its functionality. The "government" from one hierarchical level to the other is transmitted very slimly and badly. And the functional relations between the decisions have become ungovernable.

If a public agency needs to operate as a private agency, because it has lost the capacity to govern the implementation of its own decisions or must pursue laws of realistic behaviour of the political operators, then it is just the same that those public activities which, if in any case it is not able to govern, could be privatised: At least, they will be implemented under the sign of a spontaneous adjustment towards optimisation, and, if effectively the compromises between private decisions, this represents the best of the possible solutions. This is the reason why the juridical architecture of the public and administrative law, even the most reasonable and pragmatic, today seems destined to come of nothing. The operational entities, more or less public, but sometimes even those private, develop themselves with flurry of autonomous management in a space that is no more controlled by a formal order, but only by the operational initiative, the outcomes of which are unpredictable, like the "market."

4. The complexity of the Public "System"

This is, therefore, the complexity that social and political sciences have to face in the contemporary epoch, and that of today compromises governance. It is a complexity that comes from the proliferation and multiplication of the centres of social power and decision.

People could say that it is not more a question of ruling relationships among the individual freedom sphere and those of the social (or public) sphere. In fact, this way, rather, the social and economic problems of the last two centuries that we know of capitalism, the two centuries also of the explosion of individualism, of the private initiative that must be harmonised with the social (public) one, in general conflictual. The problem to establish views that could not suffocate the private initiative in the name of the sociality, and vice versa.

The market – in its logic magnificently elaborated by the economic science – has been and still is the best instrument in order to compose the conflictuality among individual interests/initiatives and public interest/initiatives. In vain, people tried to theorise (by means of an autonomisation of the "economic policy") an economy of the public interest, a sort of *public economics*, on the basis of principles elaborated by the business economy, which is essentially an economy of the individual and private enterprise (whatever may be the dimensions of the latter). In all this exists a *contradictio in terminis.* One of the profiles of complexity of private individual initiatives, the best instruments to face such complexity in the capitalist enterprise and industrialization epoch, is exactly the "market", intended and natural place for the optimation between individual and social choices.

And that "politics" has representation and place of composition of the social choices, while in that epoch it had and still has (as far as this type of complexity still exists) the problem of mitigating the damages of individualism and of the diffused spirit of the private initiative with the damages of the excess of public initiative and intervention, denier of that individualism and spirit of individual enterprise which characterised the so-called capitalist epoch. In vain, people tried to moderate the market's "free-game," by means of use and norms, without clogging the motor on which growth is based and has the private initiative.

But the complexity that today the western advanced societies (called capitalist) must face or manifest has not that which derives from the relations among the individual and public spheres (which perhaps remain the problem of the societies still influenced, for societal and structural reasons, from a pre-capitalist situation), but, rather, that deriving, as said, from the proliferation of entities, public and private, that propose no more individual, but social aims and results. And the "market" – at least that we know and which we have inherited from the dismantling of the rigid, corporative rules of the pre-capitalist societies – is not more sufficient as place of composition of the dominant interest, since the social sphere has become "plural;" it would be possible and linguistically more correctly to say that it has been unincorporated in different social spheres, today predominant. These spheres sprung out from the geographic and territorial scales (which the so-called "geopolitics" today relaunch to the attention and around which neologism producers have proposed the term of "glocality," a synthesis of global and local); but also from the sectorial scales (from the pluralism of the social interests, that contradict and conflict the one against the other).

5. The Political Governance

"Politics" today responds to the new situation with many procedures of mediation, negotiation, consultation, and – more and more today – communication. All this improves the corporation and mitigates conflictuality, but is not more sufficient. Especially communication, intensifying itself, becomes one of the factors that produces a greater "complexity" previously ignored because of… ignorance. The social tensions, from one side, are less acute because they are largely diminished by the social distances from every view-point (and to deny that this would be a product of an excessive partiality, once called sectorism), but from the other side are more vivid because of the increased occasion of knowledge, comparison and evaluation, which the modern communication supplies. And – I repeat – it is a question of a complexity which springs in a climate of extreme socialisation, of a predominance of a social view-point on the traditional private interest. I believe that this predominant view-point must be authentic, sincere – and not rhetorical or disingenuous. But it occurred that it became limited from the narrowness of scope, from the poor quality of the vision, from the scarcity of the information concerning complexity and "systematicity" issues.

In the epoch of mass-communication, the larger complexity is generated by the very increased communication.

But it is not sufficient for politics "to mediate." It is not sufficient to have multiple negotiations and bargaining "desks" to resolve institutional conflictuality and contradiction between many decisional centres. It is needed all that could be effected by an improvement of the decision's quality on which people discuss. Otherwise, the conflictuality negotiated is sterile, is limited, and reduced to a mere compromise amongst forces which often produce more stalemate than solution; more decisional blockage than realizations; more static than dynamic.

In other words, it is not enough to "mediate," but it is needed to *elaborate* a solution. It is needed what always could be a general (systemic) scope of the complexity that is faced, although, in the expansion, equally necessary and indispensable as the *mediation and the bargaining*. This last, in sum, becomes an indispensable condition, but not sufficient of decisions if these must be efficient and implemented. The same is valid for the elaboration, which is an indispensable but not sufficient condition if not accompanied by mediation and bargaining among the parts or interested power (in English, as known the current neologism is that of "stake-holders").

6. The Quality of the Decision and Management of the Public Sector

What we have called elaboration of the solutions comes from, as is the case with most parts of the innovation, a technical fact or a "technology."

But, if largely understood, adopted and practised, it can rapidly become also a social habit, a heritage for all, like it happened for all the technical innovations of the industrialisation, or for the scientific founding, or for the legal codes that have changed whatever was possible to change, and have not changed whatever was impossible to change, because people have (still) not supplied answers to them.

The same happens for the way to govern. This is today antiquated, everywhere. It corresponds to an epoch in which the technology of the

management and decisions were poorly developed; in which the sciences of organisation and management were still in their infancy.

These sciences – as is well-known – have until now been developed mainly in the field of production firms, especially the big corporations, and in the field of material goods production. Even in these fields they found, at their time, a conservative contestation. This took and still takes the form (especially in the field of small and medium firms) of the resistance to abandon the role of the captains of industry or of personal leadership. Even if, however, managerial innovation never thought to completely substitute the "role of personality" in the government of firms, these have emancipated themselves more and more from this role, and this fact has been increasingly considered the primary factor of the great success of the modern big corporation, and also increasingly that of the medium and small firm.

However, the organisation sciences are introducing themselves strongly even in that sector of organisational units, say mere enterprises, in the field of production of non-material goods, i.e. in the services field, and thus also in the public services field (transportation, school, health, heritage goods, social security, environment, emergencies, etc.).

Even in these fields, there has been, in the past, a sort of conservative contestation. This time, taking into account – especially in the public administration – the entirely different nature of goals and performance organization of these operational units from that of the productive firms. But, even in this field, there, at last, has been diffused the conviction that appropriated methods of managerial conduct, similar to that of private enterprise, could be healthy in order to increase efficiency, to diminish the cost of public administration, even if we are still far from the practice in all countries of these new methods, and from the preparing, adequately to these new methods, new generations of managers of the public administrations and agencies. The most advanced country in this direction is surely the United States, where, in 1993, - after some decades of vain and reiterated attempts to insert several ways for strategic planning in the ordinary management of the public agencies at federal and state or local levels - the GPRA act has been approved, which prescribes the adoption of a mechanism of strategic planning for all federal agencies, none excluded.

Even there, however, the work is still at the starting-point and is obstructed by all the difficulties and resistances that every innovation has faced over time. I don't believe it possible to escape this innovation, at least not in more advanced countries.

At a more backwards level is the experience of the application of strategic planning on a national scale, or at least on a scale of government-wide coordination and system. In this field, something has been done in the US: the Office of Management and Budgeting, the agency directly connected with the Executive Branch of the White House, has published a document introducing a political analysis about the ongoing effort on the whole implementation of the GPRA.[6] But we are still in our first steps, and I believe that something more could

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[6] US OMB *Government-wide Performance Plan* 1999

be done only when strategic planning could be injected and consolidated as a routine in every federal agency.

7. Strategic Planning as Governance tool within the Complexity of Political Action.

The "reinventing government" – because it is about this that we are speaking – constitutes a silent revolution that will possibly resolve the governance crisis – that is a crisis itself of "politics". I have said above that this crisis of politics is more and more felt because of the fact that people ask themselves if – beyond the mere registration of the *ex post* event as political "facts" – today concrete chances for politics to "matter" do exist, that is, that programmes and decisions that go a little beyond mere routine, beyond the obliged trend, have the chance to be carried on and implemented.

In order to "matter" it would be necessary that programmes of alternative candidates (parties and persons) could be the ones with marked differences. And that, because of such differences, these winners would be capable of clearly marking a set of operations consistent of the programme and having an expectation well-distinct in terms of effect. Instead, we are always faced with governmental policies of opposed parties that, at the moment of the proof, behave more-or-less according to a quite equal scenario. Except for some aspects visible and ephemeral by themselves, the most important changes (the reforms) that should succeed the address change, at the proof of facts, cannot reach to be effective (and this happens in every country, either those whose political parties do not express ideological visions very differentiated, or those within which still exists an imprinting of fundamentalist ideological visions, ever more declining besides). Thus, people are satisfied with small movements at the margins, of an incrementalist type, along a development on which the government changes have poor impact.

It is the legislative activity itself which suffers from ineffectiveness and irrelevance. Everywhere there are laws that are not *implemented* as we would expect. Everywhere, big efforts in legislative and normative architectures are shifting, without impacting it, beyond the routine, leaving scarce trace and being archived soon. Overall, no significant difference is perceived in the behaviour of governments when one regime replaces another.

In sum, we have the impression that the events are, in their unforecastable, unpredictable and theorized casuality and the complexity flows, without any real impact on them, on behalf of the routilant and ostentatious political action and fight.

Why not attempt, then, to recuperate credibility and effectiveness even to the politics, restructuring our constitutional regimes to adapt them to the type of complexity that currently impedes their credibility and functioning of them?

Such regimes, emerged in the liberal democratic paradigm of the 20th century, seem in effect today inadequate in order to render the functionality of institutions (beginning with the parliament) effective to decide and not only to "talk." And

inadequate in order to decide on a form and procedure which facilitates the implementation of what is decided.

The modern technologies of strategic programming successfully applied in the private enterprises, and today more and more also in the public service unities and agencies, could help to realize a "quality jump" in the policy decisions of public decision-making, tailoring them in order to answer to the modality and principle of strategic programming itself.

Instead of losing ourselves in an endless and inexhaustive, normative provisions that are not the proof of facts, it should be better to elaborate at the parliamentary level (with the help of a technical apparatus directly dependant from the parliament) only some *reference frameworks*, suitable for a *multi-criteria system of decision*, which should seriously constrain decisions as to be subject to the feasibility and compatibility analysis of goals and objectives, and to the consequent sub-decisions. Decision, in brief, would not be taken except within a reference framework (qualitative, but overall also quantitative) of the decisional system, at the scale on which it is applied.[7]

Modern planning is not planning of public intervention, as it has been conceived for a long time, either in the sustaining or refusal of it. Conceived in such a misguided way, in fact, planning could not be conceived but associated to an authoritative extension of the – directly productive – role of the state. And, as such, it has been condemned to the chances of the *etatism*, in its success and failure.

Modern planning is not even only "indicative," as some have preferred to define it for so long, versus the "authoritarian" one, with the intention to mark its possibility to coexist and also to be integrated with the market economy (the most known example: planning *a la Française*).

Modern planning is, essentially *systemic*, in the sense that it searches to include in its *framework of prospective analysis and evaluation* all variables considered relevant, splitting itself in a set of partial frames and models which require, however, a reciprocal consistency.[8] And this just for the impossibility of

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[7] On this subject, a report can be seen, written by myself for the Italian government in the long-past year of 1972: *An accounting framework for the national programming and the strategic economic policy*, Ministry of the Budget 1972.

[8] This framework of socio-economic references is essentailly an *accounting* framework. This is why a new, modern systemic planning - of the type of that here designed - is founded on a new system of *social accounting*. It must be founded on two novelties:

– first, the accounting system will be "extended" to the "non-market" transactions, given the importance, today no more ignorable even on the accounting level, that these transactions have in the formation of the social welfare;

– second, this accounting system will be projected into the future, exactly because it will express not only the registration *ex post* of a social reality, but also the predictable and desirable quantifications on the basis of the *ex ante* plans of the same social reality; these quantifications will be, at their turn, the scenario within which single actors will place their actions.

The social "extended" accounting today has got, on a technical level, some experience of debating, early implementations and early difficulties. The deepening, conceptual work should also be accompanied by an intense work of adaptation of the information instruments that today are notably absent in every country, especially for what is concerned cost-benefit, "not-

including all variables considered important into a unique framework or unique model.

Planning has as its principle instruments, obviously, the plans. So, it is systemic because the national plan (and that, eventually, supra-national), as a synthetic plan, is the meeting and verification point (of compatibility) of a very large series of plans, sectorial and territorial (by activity sectors and by regions) and also of institutional type (by operators, more or less aggregated).

To the plans formulation, we arrive by autonomous evaluation of the interested operators: well, the systemic planning is just a service of the state strived to render consistent and effective *between them* different plans of different operators, public and private, sectorial or territorial; what is a condition of the success and implementation).

This does not exclude that the state, in its political sovereignty, could or should formulate general guidelines, to which even the process of "*putting in consistency*" the different plans should be adapted.

The problem of modalities through which will be researched that plans could be conformed to the states' guidelines, or be conformed among them, in a vertical or horizontal sense, overall in the case of manifest incompatibility and conflict, is a problem that will be resolved *politically* and, successively, through suitable forms of negotiation, arbitration and political decision-making. Two factors are essential and will impact on the efficacy of the planning system so conceived (as a *system*):

- that the arbitration should be obtained by means of a framework and scenarios sufficiently clear and defined;
- that single plans (elaborated autonomously and successively conformed through negotiation and arbitration to a systemic logic, make explicit the reference extra-systemic data, on which they have been built (reference data that are received from the superior plans, or elaborated hypothetically from the plans themselves).

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measurable" in terms of market-prices (social cost, environmental cost, etc.). On this aspect, the applications of the new technologies called "E-government" supply possible operational scenarios before inconceivable. But such development should be strongly interactive (as a condition, but also as a result) with the development of the political demand of planning. Even in the field of the prospective budgeting and scenario-building, the techniques of the simulated projection and conditioned forecast should be largely perfected. But, in this field, we have the impression that technical advancement is today much farther along than political advancement, and that we are in the presence of an academic work that runs the risk of idling (partial toward a useless and inproductive sophistication), exactly because it is not applied to operational situations and circumstances on behalf of the appropriated decision-making centers: this will give concreteness and effectiveness even to the methodologies themselves. The steady political introduction of a planning system on a national scale (and also supra-national and world scale) could not but improve the situation enormously. And it will constitute the occasion of important scientific progress in such matters.

8. The Role of the "Planning Bargaining:" Instruments of Control of the Complexity

Among all modalities of implementation, in effect, the most important is that of negotiation and bargaining. I would define this as "planning negotiation" and "bargaining", in order to distinguish it from that of the "market bargaining," which has also long existed among operators and political agencies but that is developed in the absence of planning (even if often it is a question only of a "political market").[9]

The last concept is, as it seems to me, in effect more suitable to the desired greater – collective and preventive – control of the social and economic development

The current administered market, dominated by the "meso-economic" power, needs the bargaining planning exactly to re-constitute an active role to the marginalised and subordinate powers among which – as already said – even those of the state and unions still operate in a position "to return." Therefore, it needs a plan's proliferation, as a result of the plan negotiations, in order to re-constitute congruence to the different goals of the socio-economic development.

In conclusion, it is needed that planning become the prevailing system of management and control of decisions, because planning negotiation could provide a way out from casuality, from occasional instrumentation, and lastly from an absolute precariousness and ineffectiveness.

In order to get all this (which is lacking substantially in all developed countries, but is ongoing in implementation first in the United States), it would be necessary to establish clear public procedures of the strategic planning fixed by the legislations (and maybe also by the Constitutions) of the modern states. It would be necessary to have a procedure which provided a classified and well-displayed formation and negotiation of plans, at all levels, with times and maturities clear, defined and reasonable. And this in order to put in orbit a complex planning system, from which to draw out a new way to assess and decide the social and economic development.

This is the only way I see, frankly (on the traces of Myrdal and Frisch), to escape from pessimism and renounce-ism towards which the theory of complexity pushes us, and to take the more simple way that the theory of complexity itself supplies to us: that to abandon the forecasting approach in favour of the programming approach.

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[9] It would appear at first glance (but only at a first glance) a quibble, but I would prefer to talk of a "planning market", because in such a way we could better express the concept of a plan negotiated among operators, in the framework or in conformity to plans, *systematically* superior as hierarchy; and, in such a way, we could express the concept of an implementation *by means of negotiations and agreements*.

Such an expression, moreover, would express well the intent to substitute in some way the traditional concept of "market" in the abstract, as a place (a bit mysterious and uncontrollable) where are determined – spontaneouesly and "naturally" - the transaction and their conditions, with the concept of "market" as a place of negotiation, mutual understanding and agreement; a place of "administration" and "management" settled between relevant powers and actors, public and private, unions and corporations.