

www.essayandscience.com

The Democracy of Knowledge.

For an Intelligent Society

Daniel Innerarity

Translated by Hope Doyle D'Ambrosio

INTRODUCTION

GOVERNING KNOWLEDGE

Beyond being a means for understanding, knowledge is an instrument for coexistence. Its most important function is not to reveal a presumed objective truth, to adapt our perceptions to external reality, but rather to serve as the most powerful mechanism in shaping a democratic space of mutual existence among human beings. Despite popular belief, our main collective problems are not a question of public will, or of lack of determination, or immorality; they must also be considered failures of cognition. That is, they must be viewed as rooted in an inadequate organization of knowledge from the point of view of its democratic legitimacy.

I do not share the provocative bias with which Richard Rorty formulated the related theory that democracy is more important than truth, because what is at issue is not the establishment of hierarchies, much less incompatibilities. Rather, what I defend in this book is extending democracy to knowledge in a dual sense: 1) Issues elucidated in science are also issues of citizenship, and 2) the main problems of a democracy – how we solve the economic crisis, for example – are less problems of political will than cognitive failures that we must solve with a better understanding of the complex realities that we govern, with instruments of government whose quality leaves much to be desired. This is a field of research that I began to pursue with my previous book (*The Future and Its Enemies: In Defense of Political Hope (Cultural Memory in the Present)*), in which I posited that contemplating the future was the best tool for making progress toward the renewal of democracy. In the present book I again take up that research in order to try to demonstrate that knowledge and its related areas (politics of science and innovation, political consulting of governments, assessment of public policy, understanding of current social changes or the cognitive competence of regulators) are areas in which not only economic prosperity, but more fundamentally the quality of democracy, are determined. The politics of knowledge and through knowledge have become an issue of democratic citizenship where various theoretical problems, especially the quality of our public space, are at stake.

The primary hypothesis of this book is that a society of knowledge and innovation is characterized by the great proliferation of possibilities that it faces and, therefore, by a corresponding escalation in the contingent nature of its primary activities. The range of options usually becomes impossible to encompass whenever we must choose, decide, trust or anticipate, and in the end we are left with the lingering suspicion that some relevant possibility has been overlooked. People, as well as societies collectively, feel compelled to deal with this explosion of possibilities in their diverse forms (information overload, diversity of opinions, contradictory demands of legitimization, multiplication of options, proliferation of risks, innovations whose effects are unknown . . .), with the result that intelligently managing this excess is their primary occupation. The main challenge for individuals, organizations and society as a whole is the fair and intelligent governance of this surplus of possibilities. Overburdened intelligence is the primary anthropological experience at the core of a great many of our political and social problems and is the object of my analysis in the first part of this book, which constitutes a sort of anthropological introduction to governing knowledge.

In this context, the essential political action is the organization of uncertainty, the object of the second part of this book. Democratic societies are formed, not only by legitimate decisions, but also by adequate knowledge. Problems of knowledge are political issues and political problems are also, to some extent, cognitive problems. Questions regarding the legitimacy of the

political supervision of knowledge and of the quality of knowledge, on the basis of which this supervision is undertaken, are not simply theoretical questions but rather central dilemmas of what I call the democracy of knowledge. If we are talking here about the governance of knowledge and also about the organization of uncertainty, it is because that very society which we applaud as an explosion of knowledge and information should more properly be considered – in light of the limited knowledge available to us with regard to the problems we must tackle – a society of ignorance. I am not going out on a limb very much when I say that the primary controversies in the coming years will center on issues of this type, that is what we know, what we do not know, and all the forms of incomplete knowledge based on which we must make our collective decisions.

The crucial need to actively generate learning processes, which characterize our societies of knowledge, is especially valid for the economy. In the third part of this book I analyze the economy's cognitive challenge, currently demonstrated by the economic crisis, which I believe is more useful to think of as a sign of a great collective failure at anticipating and managing the risks created by economic activity that is, so to speak, more intelligent than our regulatory tools. Recovering the necessary cognitive competence includes conceptually renewing the science of economics; what exactly its tools measure is a mystery to us. If the economy still aspires to offer a general discourse regarding the social order, then it does not need precise equations as much as a systemic vision. Our aspiration in this sense should be led by the Keynesian axiom according to which it is better to be roughly right than precisely wrong. This is what I call here an economy for an incalculable world.

In a society of knowledge and innovation, the erstwhile educational ideals – to be perfect, to be well informed, or to be critical – are replaced with a new ideal that is often referred to as being creative, and that may be understood as the capacity to change our expectations when reality refutes them instead of insisting on telling reality what it should be. The last section of the book analyzes the multiple paradoxes posed by this concept. The geography of creativity examines the distribution of creativity in a society, the possibility that societies and places can be more intelligent than each one of us individually. The cognitive about-face with regard to the politics of space, and within the government in general, has to do precisely with the fact that humanity's great challenge is no longer to conquer nature but rather, to make information and organization progress together.

CHAPTER 5

NEGOTIATIONS BETWEEN KNOWLEDGE AND POWER

The age-old question regarding the relationship between knowledge and power, which dates back to the Platonic theory of the philosopher king has been depicted in our time as two figures that represent the type of knowledge that should guide politics. In Plato's version, the figure of the expert would be on the right, and that of the intellectual on the left. The expert symbolizes the superiority of science and is the advocate of objectivity. The intellectual professes to assert moral superiority and instead of objectivity what he proffers is critical and thoughtful insight. Both figures would be two versions of the same model, and their anachronism is found in that convergence: the model of "speaking truth to power" (Wildavsky, 1979), as if experts and intellectuals were immune to the uncertainty in which the rest of us mortals dwell. I know that I am simplifying things a bit, brushing over nuances, but this simplicity may help us to better understand why a model of a type of knowledge that politics would only have to obey is part of the past and does not reflect the complex relationship between knowledge and power that indeed exists in our societies. Nowadays we must reconsider the conditions under which political ideas may be asserted in the political process.

As is well known, in the knowledge society, knowledge itself has become an element not only of economic productivity, but also of increasing importance for the social legitimization of political decisions. Scientific reports, studies, commissions of experts, all form part of our usual political and social landscape. It is also true that the transfer of knowledge between the social sciences and governmental institutions is a process that should be strengthened. Nevertheless, if we want to understand how knowledge and power are currently expressed, we must remember that knowledge has changed statutes and it is no longer dressed in its traditional garb of authority, but rather that 1) it is increasingly less an exclusive product of the experts and more the result of a social construct, and 2) it has a greater consciousness of its own limitations and that it inevitably comes with a growing non-knowledge. The knowledge that democratic governance requires is set in this new context.

The conditions under which we currently practice politics could be summarized by the statement: "the facts are uncertain, values in dispute, stakes high and decisions urgent" (Ravetz, 1999, p. 649). The problems arising from risk are redefining the boundaries between science, politics and public opinion. The dissent of experts, the questionable scientific evaluation of the risks and threatening potential of scientific innovations have contributed to undermining the traditional image of science as an authority that produced objective, reliable, universally valid knowledge. Science of course increases knowledge, but it also

increases uncertainty and non-knowledge in society. Thus, we have to rid ourselves of the idea of science seen as an objective and indisputable basis for politics.

The relationship between knowledge and power is full of paradoxes nowadays. Science is asked to provide relevant knowledge for the adoption of collective decisions of great transcendence for society. At the same time there is a decline in confidence in science, or at least, a restructuring of its traditional role as unquestionable purveyor of certain knowledge. As the Euro-barometer Social Values, Science and Technology, 2005, demonstrated, science inspires greater public confidence than other social institutions, but confidence in the objectivity of scientific experts is a thing of the past. To put it in a controversial way, “in the knowledge society the significance of knowledge increases, but the relevance of science diminishes” (Willke, 2002, p. 12). A knowledge society is not one in which science has great importance, but rather one in which knowledge has great importance. The knowledge society cannot be properly understood if we fail to bear in mind that in it, in its functioning, in its conflicts, there is a great variety of types of knowledge that are partially concurrent. Because of that, the politics of knowledge must be established as politics of diversity of knowledge (Rammert, 2003, p.501) that include a plurality of actors and scenarios within which the processes of interpretation and negotiation take place.

Likewise, we may reaffirm what Jasanoff has referred to as a “peripheral blindness of modern States,” which favor the known at the expense of the unknown, place excessive trust in the image they have of reality, focus on the short term, and pay more attention to immediate risks than to undetermined, synergistic, long-term risks. From this standpoint we can say that the primary demands that we place on politics may be summarized as a cognitive imperative, given the abundant evidence that its instruments of understanding reality are less than perfect. Learning has become the true objective of civic deliberation. “The capacity to learn is limited by the framework in which the institutions must act. The institutions only see what their discourse and practice allow them to see” (Jasanoff, 2005, p. 386). If that is the case, the issue of rethinking the relationship between knowledge and power becomes a crucial issue of contemporary democracies.

From this vantage point, I will analyze how the politics of knowledge, the governance of knowledge and through knowledge (Schuppert and Vosskuhle, 2008) may be understood. That is, I will examine that set of forms and processes in which the conflicts and risks produced by knowledge and non-knowledge of science are socially defined, negotiated and shaped. Its setting is the public space, that hybrid agora, or gathering place, where science and society, the market and politics converge (Nowotny, Scott and Gibbons, 2004, p. 253). From the analysis of this collective discussion we may judge if political

power and public institutions have at their disposal the knowledge required in order for them to make decisions. It is important to remember that one of the sources of the legitimacy of their decisions is in their promises to act rationally, that is, that they know what they are doing when, for example, smoking is prohibited in public spaces, or when school curricula are formulated, or when a particular vaccine is introduced. The necessity of basing public decisions on a systematic elaboration of knowledge has become more urgent with the development of the Welfare state.

1. THE POWER OF KNOWLEDGE AND THE KNOWLEDGE OF POWER

When we speak of the politics of knowledge we are basically referring to two things: the governance of knowledge and the knowledge of governance; to how society's knowledge is governed and what this knowledge with which society is governed is like. A series of questions of great importance to a democratic society may be posed on the basis of these two axes; a democratic society consists not only of legitimate decisions, but also of adequate knowledge. Democratization refers to the production of knowledge, the availability of knowledge, access to the experts or the knowledge by virtue of which we govern. The democracy of knowledge must examine, for example, how knowledge is distributed in societies, how authority and economic growth emerge from it, and what influence does knowledge have over power relationships.

If knowledge is a main component of contemporary societies, then its creation, regulation and distribution are perforce subject to explicit political confrontation. The centrality of knowledge as a battlefield is evident not only in the fact that politics and economics compete for knowledge, but also in that ideological confrontations are occasionally posed as scientific disputes, that knowledge is the motive of the dispute or that everyone appeals to knowledge to justify their positions.

a) The politics of knowledge have to do, firstly, with the governance of knowledge. The attempt to politically regulate knowledge is nothing new. This objective had a particularly perverse rendition in last century's totalitarianisms, and may occasionally be seen in the attempts of different groups and institutions to modify knowledge, as in the negation of certain historical events or in attempts to prohibit the teaching of theories of evolution.

Evidently, the democratization of knowledge has nothing to do with political control of knowledge; neither does it mean that issues of knowledge from here on should be decided by democratic vote. The growing interest in supervising knowledge (Stehr, 2003), or in controlling the externalities of the application of technical and scientific knowledge, highlights the new emphasis

on the social legitimation of science. Innovation in terms of knowledge has become the primary source of economic value and social power; the way in which this knowledge is regulated is the best indicator of the civilized nature of a society and its institutions. Regulation does not necessarily imply prohibition; it could mean supporting best practices, experimenting with a variety of approaches, demonstrating options, and facilitating their application.

The governance of knowledge refers, firstly, to the necessary adoption of collective decisions regarding knowledge and technical inventions whose functions and social consequences are controversial. The development of a politics of knowledge is, to a large degree, a response to the extraordinary speed of the development of new knowledge and technical possibilities in contemporary societies. The collective fear about the consequences of scientific development marks a new stage in the relationship between knowledge and the society in which some supervision, regulation or governance of knowledge is required. Thus, the politics of knowledge are carried out in a particularly difficult and controversial context, one in which the desire for innovation, the freedom to research and the divergent points of view of non-knowledge that are present in a society must be balanced when future risks or consequences that are difficult to predict are at stake.

With the politics of knowledge other criteria that are different from the merely scientific ones have a heightened relevance. Thus, for example, the criteria for decisions regarding the funding of scientific research are based not only on scientific excellence but also on collective usefulness. Everything having to do with the supervision of knowledge in a knowledge society is becoming the principal object of our ideological, political and legal debates. Such debates focus on the meaning, morality, liability, and economic advantages or environmental costs of scientific and technological innovations. The social control of knowledge has become a main issue within the new democratic citizenship.

Nowadays it is logical to suspect that perhaps we know too much, or to put it in a less provocative way, that this knowledge is not balanced with other criteria. At issue is not our ability to accumulate trivial and unnecessary facts that are irrelevant in a practical sense, but that even certain innovations can have catastrophic consequences if sustainability, equality and justice are not taken into account. The politics of science makes sense because it is necessary to articulate a plurality of criteria in order to adequately evaluate knowledge. It is not enough that something be true; it also has to be democratic, equitable and respectful of nature.

b) The second dimension of the politics of knowledge is knowledge of government. For someone to act rationally he needs specific knowledge to do so. The State has always attempted to be an actor that acts rationally. As Norbert Elias (1977) very eloquently asserted, the rise of the modern State coincides with

the rise of key state monopolies, particularly those government resources that were inalienable at the dawn of modernity, such as [military] force, law, and authority. The efficient utilization of knowledge is one of these many resources.

In this regard, today we are faced with the need to change from the knowledge that was necessary for classical government [to function] to the knowledge required in order to govern an advanced knowledge and innovation based society. The production and availability of knowledge is an essential problem in the new political culture. New political requirements, such as risk prevention, the regulation of financial markets, bio-politics or the environment are challenges to government competence that immediately require the creation and availability of specific knowledge.

In the traditional formulation of the idea of government there is a clear distinction between subject and object of governance. This premise has become increasingly diluted, and the State, understood as the sovereign center of control, has little by little given way to recognizing the plurality of actors and evolving toward a more collaborative conception of power (Mayntz, 2006). Political authority does not reign over a simple and passive society, but rather it oversees subsystems and political actors that are difficult to govern. In essence, the questions posed are who is controlling whom, with what methods and with what degree of effectiveness. This perspective of governance does nothing more than arrive at conclusions that derive from the fact that social plurality, the process and complexity of the tasks that must be undertaken, stress the cooperation of state and non-state actors, at different levels and with varied methods and tools, and no longer necessarily a central government actor. Thus, while classical theories of the State focus their attention on the agent/actor of the state, theories of governance highlight regulatory structures.

From the point of view of government knowledge, what is needed is a new conception of knowledge that is more conscious of its own temporary, shared nature; if our experiences are provisional, we must develop a specific sensitivity to deviations and irregularities. If the concept of governance has any value, it is for having set in motion processes on the basis of which an established public space is observed from alternative vantage points. But neither is the subject of governance a sovereign author but a plurality of authors who have indispensable areas of knowledge. Governance must therefore be understood as a process of reflexive coordination, as communication. The main problem in governing a knowledge society is how to organize the coproduction of knowledge.

New approaches are needed in order to exploit social intelligence, which tends to be specialized, dispersed and fragmented. The problem of democratic societies is how to articulate this knowledge without neutralizing the wealth of ideas, experiences, perspectives and innovations produced in a knowledge society. "The quality of the collective shaping of public will depends on the

quality of the collective formation of knowledge” (Willke, 2002, p. 174). In a period in which the hierarchical structures of decision making have become decentralized and individualized, bureaucracy and state planning no longer monopolize expert knowledge, which has become a socially dispersed commodity.

If there is one requirement of our societies it is to modify the rules that manage collective learning and programmatically elevate society’s mechanisms of self-observation and its capacity to learn. It is necessary to institutionalize a greater reflexivity with structures and procedures. It is a matter of learning under conditions of great uncertainty, which is a difficult and not uncontroversial endeavor. In fact the deliberative theory of democracy encompasses this issue, conscious that, when faced with such collective challenges, the process of political discussion should produce knowledge and not simply tactics.

The primary function of government in a knowledge society consists precisely of establishing the conditions in which collective intelligence is made possible. If the primary role of the modern State was to prevent civil war, or that of the Welfare State to combat poverty, the characteristic role of government in the knowledge society is to establish the optimal bases for optimal utilization of the “knowledge” resource. From the perspective of risk and danger prevention, one of its most important public tasks consists of developing procedures to combat ignorance where systemic risks are likely. And from the point of view of the utilization of knowledge, the issue at hand is to establish the structural conditions that make collective intelligence and innovation the fundamental areas of competence of a society.

2. EXPERT KNOWLEDGE AND POLITICAL CONSULTING

The 1960’s saw an intense debate regarding science and technology in which some denounced their illegitimate influence on politics, and others hoped that they would result in an end of ideologies. The technocratic right wing and the anti-technological left wing concurred in their positivistic conception of scientific knowledge, granting knowledge an objectivity that would render politics unnecessary. The subject of what role experts should play in the political process came hand in hand with this discussion. Meanwhile, the modification of the idea of knowledge, to which I have referred, has also had very significant consequences for the concept of political consulting. With regard to the technocratic dream, the truth is that science is yet another voice in a choir in which political, ethical and ideological arguments are considered legitimate

points of view in the decision-making process. Science consults, but it cannot take the place of government.

The knowledge society is also a consulting society (Schützeichel and Brüsemeister, 2004), that is, a society in which, because of the centrality of knowledge, an increasing number of areas of life require cognitive competence that people often lack, but to which they have access: not only governments and organizations seek consulting or advice, but so do students, couples and even souls. Contemporary societies have created a tangled consulting web to the extent that they demand a high level of reflexivity of actions in a context characterized by the greatest need for information and a heightened obligation to justify. Expert knowledge is the requisite armor of political decisions, but this knowledge, to the extent that it increases the reflexivity of decisions, is also useful for giving these decisions a contingent dimension; consulting is as much a result as a cause of an increasing reflexivity in social life.

Nowadays politics are impossible without continually resorting to expert knowledge. This is the primary option for politics when adopting risky and controversial decisions. There is hardly an area of public administration in which scientific knowledge is not invoked in some way with regard to information and the legitimation of certain decisions. Now, can we expect a rationalization of politics based on scientific advice?

Currently, appealing to the need for political consulting does not mean giving credence to a supposed objectivity that politics must stick to because, among other things, it is the expert knowledge itself that disallows it after having diversified enormously. Which expert should we obey when there are so many, and often with contrary opinions? The pluralization of knowledge implies a weakening of its ultimate authority. There is an inverse relationship between the power and the number of experts. To the degree that resorting to expert knowledge is more common, this knowledge itself becomes correspondingly more problematic. “The risk society is one that tends to be self-critical, one in which the experts are relativized or overridden by the counter-experts” (Beck, 1996, p. 32). The proliferation of expert knowledge, which becomes increasingly generalized and diversified, creates a situation in which this knowledge is no longer the exclusive privilege of some State or government, but rather something that is theoretically accessible to any State and to any group in civil society. Thus, despite the supposed technocracy of the experts, what is taking place is a global democratization of expert knowledge.

However, the relationship between power and knowledge is much more complex than what is assumed in the dictum that power is subordinate to knowledge. Occasionally exactly the opposite is the case, and the expert knowledge is used as a tool by those in power to justify political decisions taken previously. Furthermore, the world of experts is not usually a peaceful and uncontroversial one. Sometimes political conflicts are a translation of debates

being carried out in the scientific community. Science rarely has the last word on political debates; often what happens is that the political controversies run parallel to scientific controversies. Every expert has his counter-expert, which contributes to the removal of scientific knowledge from its assumed position of reliability. Very frequently the judgment of scientists, far from settling debates, increases the number of both perspectives and consequences that have to be taken into account. Thus begins the game of experts from one side and the other, which makes it clear to public opinion that, when it comes to complex issues of political and social repercussion, scientific precision does not unequivocally guarantee the rationality of the decision.

In recent years the democratization of expert knowledge has advanced considerably, not only with regard to the selection of experts but also to the production of and access to such knowledge. The key issue is how to regulate control over knowledge that forms part of the political consulting process: What type of knowledge is being sought? How are these consultants selected? What is their field of knowledge? What is their institutional affiliation? How will they present the results of their research (in the form of recommendations or factual reports)?, etc. The “democratization of expert knowledge” does not mean adding more actors to an unchanging institutional and cognitive framework. Rather, above all, it means reflecting on and transforming the very framework itself, its perceptions and implicit aims, as well as its deliberative process.

There are already many regulations in place for making use of expert knowledge while preventing uncontrolled influence on the part of the experts over democratically legitimized policies from causing a genuine colonization of governments and parliaments. Because it is true that, among other problems, political consulting can imply a dependency on private experts on the part of public actors, it can “deparliamentize” decisions or indefinitely postpone them, as well as allowing itself to be immunized against political condemnation. In order to confront these dangers regulations have been introduced regarding the selection of experts and their qualifications, control, transparency, and publicity. In England, the Chief Scientific Adviser has devised specific directives regarding political consulting whose highest aims are the visibility and transparency of the process. According to the White Paper on European Governance (2001), the Commission of the European Communities has also formulated rules regarding the utilization of expert consulting. Recent evidence of this trend is the lobby registry created in 2008 based on the proposal of European Commissioner Siim Kallas. With these and other measures, the intent is basically to guarantee the openness, plurality and integrity of the expert knowledge used in order to ensure its quality and reliability.

The larger question may be summed up in the following manner: What are the institutional protocols of the scientific consulting procedures that, on the one hand, guarantee the quality of expert knowledge and, on the other, are

appropriate in the context of particular political actions? At any rate, a belief in a direct translatability of scientific knowledge into political decisions has been demonstrated to be naïve. The traditional concepts of consulting have a vertical representation in which “ready to use” results are provided. Both the decisionist approach (first politics, then the experts) and the technocratic model (first the experts, then political judgment) share a strict dichotomy between knowledge and decisions (Millstone, 2005). Both have a model of linear transference of knowledge that suggests the idea that there is a temporal separation between a place in which knowledge is produced and another in which it is applied, as well as a clear distinction between (scientific) facts and (political) values. In both the decisionist model and the technocratic one, the functions of the expert and the politician are separate. Consulting is carried out as a monologue: either science dictates to politics the solutions to the problems or politics decides what science has to justify.

The constructionist model of political consulting is quite different: it breaks the line that goes from problem identification, expert advice, and political decision substitutes it with an argumentative process. Consulting is not a mere transmission of what is already known, but rather a time of scientific and political self-reflection (Gill, 1994). Political consulting should be conceived of as a process of communication, not subordination. Jasanoff (2005) refers to a coproduction between the consultant and the consulted. Consulting is a negotiation process in which the experts and decision makers discuss how to adapt the available knowledge to the problem at hand. Consulting is a negotiation process in which the experts and those who have to decide debate as to whether the knowledge is adequate to whatever decision problem is being discussed. The consultants do not present facts in relation to a problem; knowledge communicated in consulting processes is interpreted and evaluated by all parties. Likewise, when risky decisions are at issue, the experts’ judgment should also communicate the risks and uncertainties. Political problems should be translated to the language of science, but at the same time the scientists’ answers are not applicable to politics unless they have been expressed in the format of political decisions. There is no immediate translation of scientific judgments into political decisions; political logic should be a component of the deliberation of knowledge that scientists offer it. With this resourceful model we might have gone from the “speaking truth to power” approach to that of “making sense together” (Hoppe, 1999).

Political consulting would then serve to enrich the image of reality that the political class possesses and strengthen its capacity of reflection. It is not so much a question of the transfer of scientific knowledge to the political domain as the irritation of politics by means of scientific knowledge (Martinsen, 2006). Which, in light of the current debates regarding the insecurity of knowledge, could be formulated in the following way: the function of political consulting is to provide the field of politics with a greater number of options when making

decisions; but the politics are what ultimately decide what knowledge shall be recognized as most appropriate and politically relevant (Schützeichel, 2008, p. 16). The great challenge of political consulting is linking scientific knowledge, produced according to scientifically relevant internal criteria, with the politically relevant criteria. Consulting knowledge may be distinguished from other types of knowledge by the fact that it has to be at once scientifically correct and politically useful and feasible.

3. THE NEW RELATIONSHIP BETWEEN SCIENCE AND POLITICS

The knowledge over which modern political institutions were erected was conceived as something reliable and progressive, such that the axiom “knowledge is power” (Bacon) made perfect sense. Well this is no longer the case and it is senseless to expect that science might provide politics with objective knowledge on which political decisions can be supported and legitimized with proof. Furthermore, in the meantime, the nature of knowledge, our conception of science, and the meaning of political consulting have changed significantly.

We face the paradox that politics needs now more than ever to recur to expert knowledge, but this guarantees it neither legitimacy nor consensus. Knowledge is no longer useful for converting political decisions into undisputed evidence. Science must have a parallel dialogue with economics, politics, and civil society about the relevance of its research priorities, about its political application, the economic costs or the inclusion of consumers and citizens in the definition of problems. From this perspective, not only does science provide knowledge to society, but society can also respond to science. This new crossroads of differing logic and discourses has caused a true blurring of the limits between science, politics, and society (Nowotny, Scott and Gibbons, 2004). These new circumstances in which public opinion is not content with being educated by science but also increasingly articulates its expectations and demands in this regard may be summarized by the expression “society speaks back to science” (Nowotny, 2005, p. 36).

Politicians’ frustration that they are not provided clear and reliable advice matches scientists’ frustration that often their advice is not heeded. These and other expectations form the basis of the question as to how to organize consulting so that it satisfies the dual demand that the advice be true and viable, and that it fulfills the exigencies of objectivity and legitimation.

To start with, the classic division of labor between science and politics cannot be sustained from the point at which science begins to operate in highly politicized fields, such as the environment, genetic engineering and economic

decisions. The new politics of knowledge has to break away from two dogmas: that of the strict separation between facts and values and that of the strict separation between science and politics (Latour, 2001). The complexity of the present world demands greater linkage between political institutions and scientific infrastructures.

Modern democracies, particularly those understood to be knowledge based societies, garner their legitimacy from the coupling of democratic representation and scientific rationality (Weingart and Lentsch, 2008, p. 7). The great dilemma of contemporary democracies lies in the fact that they must adopt decisions taking into account available scientific knowledge and, at the same time, these decisions have to be democratically legitimized. And in order to properly confront this dilemma, the first thing that they have to know is that these are two separate issues. Despite all of the hopes that scientific consulting would alleviate the weight of political responsibility, science continues to be science, and politics continues to be politics. Science and politics have two different systemic rationalities. As Luhmann puts it, science operates under the code of truth and politics under that of power. These different rationalities translate into different expectations. For example, we do not expect from politics the same objectivity and universality that must guide science; the criteria of compromise, viability and political opportunity are alien to scientific activity.

At present neither science nor politics are what they were fifty years ago, nor do they encounter the same problems as a half-century ago, nor do they operate under the same conditions. Technocratic hopes have vanished. The illusion that it was possible to translate scientific knowledge directly into political decisions has been proven to be naïve. Currently, politics take place in societies and are articulated through the media and more than ever include a battle for popular legitimation through the media. Political decisions have to appear at once rational and politically acceptable; it is part and parcel of the trade to offer objective solutions that mesh with subjective interests. Therefore, political consulting must not ignore the interests and limitations of political actors. Contemplation of the acceptability and viability of advice must be a central component of consulting. It is not a question of “transporting” scientific knowledge to politics; the most important thing is that the politics be done intelligently, according to its own structures, processes and rules.

There is an initial moment for which political judgment is indispensable: before recurring to science, politics has the function of adequately defining the problem. This is particularly important when what we are faced with are problems for which not only do we not have a solution but also neither science nor politics are sure of what the problem is. (Fischer, 2000, p. 128). The deliberative dimension of democracy, its capacity to generate collective knowledge and not only a balance of interests, plays a very relevant role in these

cases of collective perplexity. The timing of the decision is also especially political, despite all of the scientific protection available. Here it is fitting to quote Andromache's declaration from the Greek tragedy *Hecuba*: "When strong winds are drifting mariners, the divided counsel of the wise does not best avail for steering and their collective wisdom has less weight than the inferior mind of the single man who has sole authority."

Nevertheless, when contemplating the relationship between knowledge and power, it is useful to keep in mind that the one doesn't know that much and the other cannot do that much. Both can mutually console each other for having lost their old privileges, and share the same uncertainty, in the form of theoretical perplexity in the case of one and vertigo when faced with the contingency of the decision in the case of the other. What privilege has power lost? The prerogative of not having to learn and simply devoting oneself to leading. And what privilege has knowledge lost? Well that assurance and evidence that allowed it to disregard all exigencies of legitimation; now its social inaccuracy is more visible. Thus the problem is no longer how to combine reliable knowledge with a sovereign power, but rather how to articulate them so as to compensate for the weaknesses of one and the other with the objective of battling together the increasing complexity of the world.

BIBLIOGRAPHY

Beck, Ulrich (1996), «Risk Society and the Provident State», in Scott Lash, Bronislaw Szerszynski and Brian Wynne (eds.), *Risk, Environment and Modernity*, London, Sage, pp. 27-43.

European Commission (2001), *White paper on European Governance*.

Elias, Norbert (1977), *Über den Prozess der Zivilisation. Soziogenetische und psychogenetische Untersuchungen*, Frankfurt, Suhrkamp (Spanish trans.: *El proceso de la civilización. Investigaciones sociogenéticas y psicogenéticas*, Madrid, Fondo de Cultura Económica, 1988). *English translation by present translator.

Gill, Bernhard (1994), «Folgenerkenntnis. Science Assessment als Selbstreflexion der Wissenschaft», in *Soziale Welt*, 45, pp. 430-453.

Hoppe, Robert (1999), «Policy analysis, science and politics: from "speaking truth to power" to "making sense together"», in *Science and Public Policy*, 26/3, pp. 201-210.

Jasanoff, Sheila (2005), «Technologies of Humility: Citizen Participation in Governing Science», in Alexander Bogner and Heige Torgersen (eds.), *Wozu Experten? Ambivalenzen der Beziehung von Wissenschaft und Politik*, Wiesbaden, Verlag für Sozialwissenschaften, pp. 370-389.

- Latour, Bruno (2001), *Politiques de la nature*, Paris, La Decouverte.
- Martinsen, Renate (2006), «Partizipative Politikberatung: der Bürger als Experte», in S. Falk, D. Rehfeld, A. Römmele and M. Thunert, *Handbuch Politikberatung*, Wiesbaden, Verlag für Sozialwissenschaften, 2006, pp. 138-151.
- Mayntz, Renate (2006), «Governance-Theory als fortentwickelte Steuerungstheorie», in Gunnart Falke Schuppert (ed.), *Governance-Forschung. Vergewisserung über Stand und Entwicklungslinien* Baden-Baden, Nomos, pp. 11-20.
- Millstone, Eric (2005), «Science-Based Policy-Making: An Analysis of Processes of Institutional reform», in Alexander Bogner and Heige Torgersen (eds.), *Wozu Exporten? Ambivalenzen der Beziehung von Wissenschaft und Politik*, Wiesbaden, Verlag für Sozialwissenschaften, pp.314-341.
- Nowotny, Helga (2005), «Experten, Expertisen und imaginierte Laien», in Alexander Bogner and Heige Torgersen (eds.), *Wozu Experten? Ambivalenzen der Beziehung von Wissenschaft und Politik*, Wiesbaden, Verlag für Sozialwissenschaften, pp. 33-44.
- Peter Scott and Michael Gibbons (2004), *Wissenschaft neu denken, Wissen und Öffentlichkeit in einem Zeitalter der Ungewissheit*, Weilerwist, Velbrück.
- Rammert, Werner (2003), «Zwei Paradoxien einer innovationsorientierten Wissenspolitik: Die Verknüpfung heterogenen und die Verwertung impliziten Wissens», in *Soziale Welt*, 54, pp. 483-508.
- Ravetz, Jerome R. (1999), «What is Post-Normal Science», in *Futures*, 31/7, pp. 647-653.
- Schuppert, Gunnart Folke y Andreas Vosskuhle (2008), *Governance von und durch Wissen*, Baden-Baden, Nomos.
- Schützeichel, Rainer (2008), «Beratung, Politikberatung, wissenschaftliche Politikberatung», in Bröchler, Stephan and Rainer Schützeichel (eds.), *Politikberatung*, Stuttgart, Lucius & Lucius, pp. 5-33.
- and Thomas Brüsemeister (2004), *Die beratene Gesellschaft. Zur gesellschaftlichen Bedeutung von Beratung*, Wiesbaden, Verlag für Sozialwissenschaften.
- Stehr, Nico (2003), *Wissenspolitik. Die Überwachung des Wissens*, Frankfurt, Suhrkamp.
- Van der Daele, Wolfgang (1993), «Zwanzig Jahre politische Kritik an der Exporten», in Joseph Hubert and Georg Thurn (eds.), *Wissenschaftsmileus. Wissenschaftskontroversen und soziokulturelle Konflikte*, Berlin, Sigma, pp. 173-194.
- Weingart, Peter and Justus Lentsch (2008), *Wissen, Beraten, Entscheiden. Form und Funktion wissenschaftlicher Politikberatung in Deutschland*, Weilerwist, Velbrück.
- Wildavsky, Aaron (1979), *Speaking Truth to Power: The Art and the Craft of Policy Analysis*, Boston, Little, Brown and Company.

Willke, Helmut (2002), *Dystopia. Studien zur Krisis des Wissens in der modernen Gesellschaft*, Frankfurt, Suhrkamp.