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Abstract
Wicked problems in policy research have two characteristics: (1) the goals are unknown or very ambiguous and (2) the means-ends relationships are highly uncertain and poorly understood. This paper suggests that energy policy poses a wicked problem and that traditional methods of policy research are therefore inadequate when they are applied in this domain. An alternative approach based on social learning is proposed. Some discussion of the four components of such an approach is presented and an evaluation of a recent exercise in policy research in Canada The Energy Options Process - is presented in the light of what a social learning approach would require. It is shown that the Energy Options Process has failed to live up to the expectations it has created.

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En politique publique, il existe des "problèmes pernicieux". Ces problèmes ont deux caractéristiques: 1) les objectifs sont ou bien inconnus ou encore très ambigus et 2) les relations entre moyens et fins sont des plus aléatoires et mal comprises. Cet article suggère que la politique énergétique pose un problème pernicieux et que les méthodes traditionnelles d'analyse en politique publique sont inadéquates lorsqu'on les applique à ce genre de problèmes. On propose une approche basée sur l'apprentissage social en tant que solution de rechange. Les quatres composantes de cette approche sont présentées et on évalue un exercice récent de recherche en politique publique au Canada — Confluence énergétique — à la lumière de ce qu'aurait exigé une approche en termes d'apprentissage social. On montre que Confluence énergétique n'à pas été à la hauteur des espoirs que le processus avait créés.

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The way to regulate well in times of great uncertainty is by learning rather than controlling. Not learning the answers to known questions that serve the intent to control, but learning what questions about balancing and optimizing now merit asking and then learning how those questions might be answered provisionally — until the present moment emerges into a new context of questions.

Donald N. Michael

1. Introduction

Mathematics and dogmas often "serve as a substitute for the usually arduous task of coming to grips with the actual phenomena" (Kapp, 1960; Georgescu-Roegen, 1975). In the world of energy there has been a flurry of dogmas and mathematical models. These have been built most often on mechanical definitions of crises — limited stocks of resources failing to meet unbounded wants. As could be expected, this sort of analysis has triggered simplistic responses.

In Canada energy issues have been stylized in somewhat schizophrenic terms. A dominant version of the problem formulation has been perpetrated by economists: it is couched in terms of shortages, pricing issues, supply/demand vagaries and efficiency losses when the market solution does not prevail. A parallel and subsidiary sociopolitical version is also in good currency: it is couched in terms of needs, rights, rent-sharing, etc.

Energy policy is both broader in scope and more complex than these two versions would suggest. It poses what has been called a *wicked problem* (Rittel and Webber, 1973). Wicked problems have two characteristics: (1) the goals are not known or very ambiguous and (2) the means-ends relationships are highly uncertain and poorly understood. Solutions are not true-or-false but good-or-bad. A meaningful response to the concerns raised by energy policy entails the definition of legitimate and widely accepted rules capable of dealing effectively (in physical, economic, social and cultural senses) with future energy problems. This in turn requires a fuller understanding of what makes energy so different as a commodity and why it should require special rules.

In the spring of 1987, the Energy Options Process (EOP) initiated by Marcel Masse — at that time the Canadian federal Minister of Energy, Mines and Resources — tried to take an imaginative look at energy policy. This process, under the stewardship of Thomas Kierans, culminated in a report tabled in the summer of 1988. This report (Kierans *et al*, 1988) was based on a broad consultation of the Canadian population. Explicit efforts were made to take account of Canadian values, Canadian institutions and even dimensions of the Canadian psyche in the analysis; the final report made many specific recommendations, but more importantly, it put forward seven basic principles which are meant to provide the foundation for a Canadian guidance system in energy matters.

Many have disagreed with the outcome of this process and with the recommendations that have emerged from it, but few would deny that it held promises of experimentation with a new style of policy research adapted to wicked problems. Some have labeled this new approach to policy research a social learning framework (Friedmann and Abonyi, 1976): it stresses learning and a transactive style of planning.

In section 2 of this article, the foundations of the social learning approach are examined. In section 3, the four components of the social learning paradigm are scrutinized in an energy context to show how easily one component might come to dominate the policy analysis entirely and how well the four components fit into an integrated framework. Section 4 gauges to what extent the Energy Options Process may be said to have been patterned on the sort of strategy suggested by that integrated framework. In conclusion, it is suggested that the social learning approach might be applicable to a whole family of wicked problems haunting policy makers and policy researchers.

2. Toward a social learning approach

Construction of a Meta-Rule

Defining a policy means establishing the basis for selecting certain procedures or adopting certain strategies in the face of different plausible sets of environmental circumstances. These procedures or strategies may be aimed at modifying reality or perceptions or preferences.

Defining an energy policy for Canada amounts to defining a meta-rule likely to be a useful guidance system in dealing with a variety of *futurs possibles* or *futuribles*. This is akin to the development of guiding principles in the management of projects. For instance, in the case of a major project like the construction of the TRANS-MANCHE LINK — the tunnel between France and England — a set of key guiding principles is contained in a 44-page project manual which spells out guidelines to be used in managing the construction of the tunnel. Most firms managing large projects have these simple compendia of meta-rules meant to help in the crafting of the required rules of the game as the game unfolds. What is needed in the energy field is something equivalent to a project manual.

The policy research underpinning the design of such a manual is particularly challenging in cases like energy: the problem is wicked (i.e., ill-structured) (Ansoff, 1960) and therefore standard policy research does not provide much helpful guidance. Friedmann and Abonyi have suggested a way to deal with these wicked problems. Their approach is based on the analysis of four subprocesses: (1) the construction of appropriate theories of reality, (2) the formation of

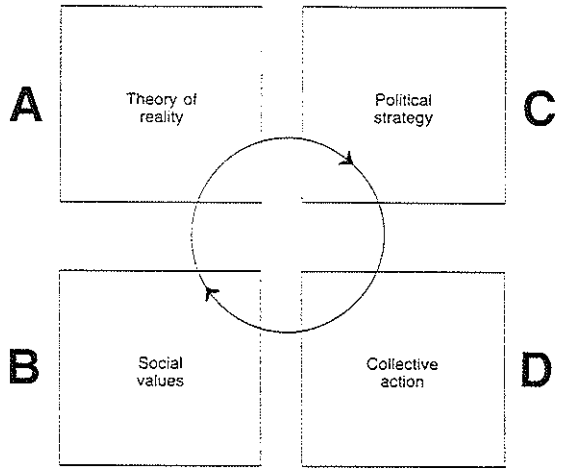

Figure 1: The Paradigm Of Social Practice In Policy Research (from Friedmann and Abonyi (1976), p.88.)

social values, (3) the gaming that leads to the design of political strategies, and (4) the carrying out of collective action. These four interconnected subprocesses are components of a social learning process: any change in one affects the others (Friedmann, 1979). This social learning approach is summarized in a graph by Friedmann and Abonyi, reproduced in Figure 1 above.

Social values (Block B) provide normative guidance in either the transformation of reality or the selection of strategies for action; they define what is acceptable. Theory of reality (Block A) is a symbolic representation and explanation of the policy environment; it depicts what is feasible. Political strategy (Block C) refers to the political action chosen; it identifies the stable and implementable. Social action (Block D) deals with the practical measures taken to ensure an effective outcome (Friedmann and Abonyi, 1976 (p.88)). Together, these four subprocesses come to life in concrete situations.

Traditional approaches focus on attempts to falsify hypotheses about some objective reality according to the canons of scientific experimentation. This is too narrow. For the social practitioner, what is central is an effort "to create a wholly new, unprecedented situation that, in its possibility for generating new knowledge, goes substantially beyond the initial hypothesis." The social learning paradigm is built on reflection-in-action, dialogue, mutual learning by experts and clients, i.e., on an interactive or transactive style of planning: "the paradigm makes the important epistemological assumption that action hypotheses are verified as 'correct' knowledge only in the course of a social practice that includes the four components of theory (of reality), values, strategy and action. A further epistemological commitment is to the creation of a new reality and hence to a new knowledge, rather than in establishing the truth-value of propositions in abstraction from the social context to which they are applied" (Friedmann and Abonyi, 1976 (p.938); Schon, 1983).

Energy as révélateur

Energy, some have argued, has a special importance in a northern country like Canada because of the cold climate. For others, the priority given to energy on the political agenda has much to do with the federal-provincial quagmire of rent-sharing and conflict resolution mechanisms, and the no-risk proclivities of Canadians and their reluctance to accept costly adjustments in the face of unstable markets (Courchene, 1980; Aharoni, 1981; Trebilcock 1985).

Fundamentally, energy is creating a social risk in Canada or at least it is perceived as such. As a result, it acts as a *révélateur* of Canadian culture. For risk is a cultural concept: existing institutions select problems and risks worth taking into account — they do the recognizing and the classifying (Douglas and Wildavsky, 1982; Douglas, 1986). For this reason, energy cannot be simply analyzed within a market context, Block-A-style, occluding other dimensions buried in values, strategy and action: all these dimensions must be processed through an all-encompassing issue-machine. However, existing institutions may be unwilling to recognize problems that threaten values in good currency or that might deconstruct hegemonic institutions. This explains their structural amnesia (Clark and Munn, 1986).

Nexus of Interconnected Problems

Energy raises many problems: (1) allocative efficiency (pricing, finances, substitutability between energy types, sources, uses and technologies, choice between domestic and foreign consumption, market failures, etc.), (2) equity (regionally for consumers and governments, between nationals and foreigners, on the upside and the downside of fluctuating prices, distributional impact on social groups, etc.), (3) sociopolitical context (treaty obligations, constitutional and regulation-induced constraints, differential adjustment costs and consequent differential social burdens, security of supply, organizational failures, global world competition, etc.), (4) environment (broad and restricted contexts, secondary and tertiary use of energy, exergy, etc.), (5) industrial strategy (use of natural resources, including energy, as an instrument of economic development and industrial location, etc.), (6) public acceptance (sense of fairness, paranoias, learning, framing of decisions, etc.).

The role of a framework is to impose some order on this nexus of problems, to suggest institutional armistices between the world of physical realities/constraints and the world of values/social concerns/political constraints and priorities. The meta-rules are a guide in this exercise of social architecture. The framework sorts out which dimensions should play a leading role in the definition of meta-rules. But no framework can be chosen on the basis of objective criteria: the policy-maker may either craft his own strategy (Mintzberg, 1987) or defer to the stakeholders coming forward with their interest-based frameworks or to the scientists marching in with their disciplinary dogmas. In any case, the governance of the policy research process is fundamentally dependent on some normative input.

What may be expected from a meaningful consultation process is a dialectic between the different stakeholders and the social architects (Perlmutter, 1965). Under ideal circumstances, such dialectics should effect the emergence of an integrative framework, the one that has the greatest heuristic power, that generates the most social learning.

Usable Ignorance

When dealing with broad policy issues like energy, one cannot hope to produce anything but incomplete answers. In the words of Alvin Weinberg, in policy research we are confronted with trans-scientific questions that cannot be answered by science; they transcend science. Engineering and much of policy sciences are plagued with such questions: answers may be impractically expensive, the subject matter too variable for scientific canons to apply, moral and aesthetic judgment may be involved, etc. (Weinberg, 1972). What is required is a new understanding built on "usable ignorance" for "by being aware of our ignorance, we do not encounter disastrous pitfalls in our supposedly secure knowledge or supposedly effective technique... institutions should be designed with the ignorance factor in mind, so that they can respond and adapt in good time" (Collingridge, 1982; Ravetz, 1986).

Coping with ignorance requires a more transactive and transparent policy process and therefore a change in the way in which policy research is carried out. It has been argued that the transaction costs of running such a system are high. This is true but unavoidable. Moreover, when compared with the costs of inappropriate responses based on inappropriate policies, these transaction costs may not appear unduly high.

3. Alternative frameworks

The rule for selection of a framework is simple: the one chosen should have the maximum heuristic and learning power. This is the least objectionable way to choose normatively in the policy field, yet it is not a criterion that prevails in most academic discussions on energy. Economists have hijacked the energy problem. If energy is an ordinary commodity, one may count on the market, so the argument goes, to allocate it as efficiently as possible and there is no need for an energy policy. To the extent,

however, that energy is not an ordinary commodity, that it has external and asymmetric effects on the rest of the socioeconomy of such a magnitude that it has to be regulated for socioeconomic reasons, then frameworks other than strict allocative efficiency schemes have to be used.

In our socioeconomies, efficiency is not a widely accepted goal; there are other values held in higher esteem by society and the political system responds much better to the strongly held viewpoint of powerful interest groups than to the anonymous and diffuse unease of the masses. This is the key to re-election. Any meaningful policy research must therefore be rooted in an integrated approach capable of accommodating to a great extent these other dimensions in order to be politically effective and widely accepted socially.

Efficiency Frameworks

To economists, energy is a commodity which, despite particular characteristics, may be analyzed through the usual market framework (Gordon, 1981). Suppliers and demanders are operating in a matrix of markets for different forms of energy. It is argued that these markets, left to themselves, would allocate energy efficiently between competing uses. As supporting evidence, it is argued that price increases in the 1970s have generated a drop in consumption directly, but also through the switch to energy-economizing technologies. All scenarios indicate that this is to continue into the 1990s (Barney *et al*, 1981; CEPII, 1985). On the production side, scale economies and fixed cost arguments have been used to argue that some regulation may be necessary. But these arguments have been shown to be not as powerful and easily generalizable as had first been suggested. Consequently, many have argued that the competitive system is working and that whatever problems there are can often be ascribed to ill-inspired government policy interventions.

In this context, the only legitimate challenges are the identification of market failures and the only legitimate energy policies are those crafted to attenuate or compensate for these. These policies have been directed to production rates (directly through public ownership, regulation or decrees, or indirectly through tax benefits), to control of imports, to regulation of prices (either directly or through subsidies), and to energy consumption patterns (either directly through rationing or through moral or financial incentives). Issues like self-sufficiency, public acceptance, long-run global change and province-building are characterized as aberrations and impediments to the smooth working of the allocative efficiency machine. Policy analysis in this context recedes to the level of advanced plumbing.

Dominant Value Frameworks

In a dominant value framework, energy is a very special commodity, an ingredient in the socioeconomic system which contributes significantly to the pursuit of value-based objectives — equity, environmental imperatives, regional/sectional pursuits, etc. The dominant values, whatever they are, frame the energy problem; energy-related issues are reordered in a manner derived from them.

No dominant value can claim to be a guidance system in studying energy issues or in sorting out energy policy options, unless one can persuasively argue: (1) that there is a clearly demonstrable link between energy and the dominant value, but also (2) that such value is of primary importance for the population, that there is a close link between the dominant value or values and the energy welfare of individuals, that there are some needs that have to be met. The concept of needs is not easy to use in policy analysis. It always appears tainted by some paternalism because needs are often defined by experts, externally. They are also fluid, clumsy and difficult to ascertain. But it is a central concept when dominant-value frameworks are used and the practical use of needs appears to be possible (Friedmann, 1979; Ignatieff, 1985; Braybrooke, 1987).

Such externally defined needs provide a guidance system for both a research program and the

design of policy. They replace the free-wheeling crafting forces of money-backed preferences registered by the market with a list of priorities to be met at a minimum standard before preferences are allowed to have their way. To allow needs to be met, policy instruments and institutions have to be set up, for there is a presumption that the market will not do the job automatically in a satisfactory manner (Willson, 1980; Robinson, 1982).

A common data set (from Block A) can yield quite different political strategies (Block C) and programs (Block D) if interpreted through different values filters (Block B).

It has been argued that in a northern climate, within a balkanized polity in which many governments have explicit development strategies, and in a society that has a strong taste for security, there are energy needs that should be considered as a priority. This is tantamount to calling for meta-rules of a distributional sort when scarcity occurs. Since the energy-producing endowment is spread over the territory in a whimsical manner, and the energy needs (for not only immediate consumption but also economic development purposes) are located very differently, reallocation and redistribution are necessary.

The dominant value frameworks call for a broadening of the concept of property rights: from rights to material things (that markets handle well) to rights to "a certain quality of life, certain liberties to develop and enjoy the use of our capacities" (Macpherson, 1985). The policy research program would originate with a clarification of the dominant values that are to act as guiding forces. This can be achieved first through some historical analyses illustrating the way in which Canadians have chosen to socialize risk, how the sense of shared parsimony and mutual obligation within the Canadian community has been instituted, etc. (Hardin, 1974). Secondly, one might identify values revealed to be important to Canadians by some mental experiments that have received wide public support, like the Conserver Society or the sustainable development programs (Science Council of Canada, 1977; Clark and Munn, 1986; Robinson, 1987). These values (environmental protection, increased wisdom in resource use, socioenvironmental diversity/flexibility/responsibility, importance of sociopolitical values as equity, cooperation, participation, etc.) could be the starting point in developing scenarios to be evaluated for acceptability.

Such a research program would have a long-run bias. Block B variables would play the leading role. In the final analysis, markets would be allowed to operate only to the extent that they would serve the genesis of some fair outcome, however defined. Yet, intolerably expensive values would have to be discarded because of the constraints they would impose on any feasible scheme.

Gaming Frameworks

Another family of frameworks focuses on the political choice processes of stakeholders, the design of the mechanisms for dialogue or struggle. Even in the simplest case, when it is assumed by all that government should manage the 'commons' — however defined — to meet certain needs, and that regulated markets should take care of the rest, a key question remains: how should the design of state institutions (to perform these jobs) be arrived at? Such frameworks focus on process, on the definition of public administration schemes and on the design of feasible regulatory forms (Mitnick, 1980).

In such schemes, energy is identified as "something" that cannot be entrusted fully to the unregulated market because sociopolitical groups have said so. Unlike the dominant value frameworks where energy is singled out because of its social importance, here it is singled out because of its political features. A research program based on such frameworks starts with the prevailing rules of the politico-administrative game in order to understand who are the stakeholders, what form of pluralist political choice mechanism is viable, and what administrative arrangements are likely to get the agreement of the community. These arrangements define a "collective game which exists independently of the individual games played by each of the orga-

nizations" (Crozier and Thoenig, 1976).

This administrative game is neither contractual, nor democratic, nor simply hierarchical. It is a political/bureaucratic game built on simplified notions of efficiency/effectiveness and on the very sketchy account of basic social values recorded by the political/bureaucratic agents. It is not geared to pursue objectives or purposes, but rather to accommodate all forces in a game of dispute settlement or spoil-sharing. This regulatory game is played at many levels. The gaming research framework focuses on ways to "understand the games which are played at the bottom of the system. Then it proceeds to discover and reconstruct the more general mode of regulation through which these games are articulated to one another. Finally, it tries to ascertain the basic mode of government and the values that make it possible for the system to exist by legitimizing these rules" (Crozier and Thoenig, 1976).

These frameworks are rooted in Block C variables, i.e., in the family of interacting public agencies harmonizing variables of Blocks A and B: from international/interprovincial accords to regulate transborder flows of energy and ensure security of supply, to rules on the ownership/management of the energy resources, to rent-sharing, symmetric obligation and equalization rules between the federal and provincial governments and other stakeholders, to energy conservation programs.

The overall energy game (with its cross-controls and exceptions) acquires a momentum of its own which has little bearing on, or connection with, what is physically at stake. This is the world of lobbying. Energy is no longer seen as just a resource: it is an entitlement, an idea — both in the sense of a *futurible* like the development of oil sands, and in the sense of a lottery prize. The game becomes a game of bluff — very much like some operations on futures markets. A research program that would focus only on fiscal principles, on studies of concepts like level-playing-field, models of rent-sharing, etc. would allow political/administrative gimmickry to take precedence over substantial issues. The discussion would degenerate into plumbing, albeit plumbing of a more complex variety than the sort highlighted by efficiency frameworks.

Collective Action Frameworks

While political strategies and stratagems are elaborated from above or from the center, much is happening at the periphery. Individuals, groups, and clubs experiment with ways to cope with their natural and man-made environment. The logic of this experimentation is learning, and its outcome is collective action, i.e., purposive action by groups.

These groups may be large or small, woven by meaningful dialogues or by the challenge of common struggles. They make up the fabric of civil society. This multicentric or reticular social fabric is occluded in the stylizations proposed by administrative or market-centered models. Life at the periphery is branded marginal or christened "alternative life style" in order to be conveniently written off the main record. These conceptual and political blinders have been exposed (Ramos, 1981) but few social scientists have paid any attention to these critiques.

In the energy world, this peripheral reality is extraordinarily rich: ecologists, sustainable development specialists, those interested in community development, survival, convivial relations, grants economy theorists, etc. For those defending the conventional wisdom, these groups represent a "lunatic" fringe to the "real" political economy. The revival of woodstoves, windpower and solar power, experiments with less energy-intensive life styles, etc. are phenomena that do not find their way into the mainstream of the process of social learning.

The differences between political/administrative gaming frameworks and collective action frameworks are important. The output of the former is a policy or plan fanned out from the center and armed with monitoring devices and enforcement mechanisms. The latter's output is experimentation through "a network of related processes of local public learning" and the derivation of policy themes by induction. In the political/administrative framework, performance is measured by the degree of conformity

at the periphery; the collective action scheme is built on local knowledge, public learning and the diffusion of innovation (Schon, 1971; Geertz, 1983).

An Integrated Framework

These four families of frameworks are partial maps of the world of interest to policy analysts. If a research exercise is to be a form of social action/social learning, it has to ensure that its research framework casts a very wide net over the whole *terrain des operations.* It is the only way in which the research program can produce a sense of direction (Gastil, 1972). This comprehensive research program must take fully into account allocative efficiency, social values, political stratagems and collective action in a general integrative scheme if it is hoped that an energy system with a high degree of goodness of fit with its circumstances is to ensue.

Policy analysts should not embalm or mummify the problem at hand through an orgy of unrealistic assumptions. Policy research in the social learning paradigm is reflection-in-action (Schon, 1983), its intent is to invent the right institutional form by eliminating incongruities between institution and circumstances. This is the way the potter crafts his work, the way medical doctors pursue negatively the maintenance of health through elimination of illnesses (Alexander, 1964). Policy is very much in the nature of design: in the words of Christopher Alexander, "we are searching for some kind of harmony between two intangibles: a form which we have not yet designed, and a context which we cannot properly describe. The only reason we have for thinking that there must be some kind of fit to be achieved between them is that we can detect incongruities, or negative instances of it" (Alexander, 1964 (pp.26-27)). Policy research, like design research, is intent on producing a different kind of knowledge — delta knowledge — the sort of knowledge acquired through learning by doing (Gilles and Paquet, 1989).

Henry Mintzberg has borrowed from the practice of potters the apt metaphor of "crafting strategy." "Formulation and implementation merge into a fluid process of learning": the need to maintain a continuous feedback between analysis and problem-formulation is central in both design and policy work (Mintzberg, 1987). This sort of social experimentation is not a new *outillage mental;* it was propounded by John Dewey in the 1930s under the general labels of "experimental intelligence" and "socially organized intelligence" (Dewey, 1935). Others referred to this learning process as transduction (Lefebvre, 1961). Others still proposed such an approach to deal with ill-structured problems (Ansoff, 1960; Paquet, 1971). But it was a path abandoned by social scientists when they became totally seduced by positivism.

4. The Energy Options Process

An initiative like Energy Options was not a *sui generis* phenomenon. It followed an era of centralization in energy policy design under the Trudeau government (Doern and Toner, 1985) and corresponded to the philosophy of openness and consultation propounded by the Mulroney government after the 1984 election, as evidenced by the process that led to the three accords (the Atlantic accord, the Western accord and the Agreement on Natural Gas Markets and Prices in 1985). The Tory energy program had clearly indicated a commitment to non-intervention in the market; this was a central feature of the Western accord (Toner, 1986). Moreover, in 1987, there was a clear sense that consultation could be carried without major risks — that it was a controllable process — after the 'happy policy' of 1985.

Yet, much in the design of the Energy Options Process (EOP) held promise of introducing a new style of policy research and national dialogue akin to the social learning approach. The advisory committee and the advisory groups selected by EOP were not made up entirely of narrow specialists on physical energy questions; environmental groups, concerned interest groups and critical individuals were explicitly offered an opportunity to air their views; and the process of consultation was orchestrated in such a way as to allow a major forum for interaction

between all the stakeholders in December 1987 in Montreal. Even the structure of the final report held promises of breaking new grounds. It was structured on the basis of an explicit energy policy framework which, we were told, had effectively been used to frame the recommendations.

In toto, however, the final report leaves any reader who expected a major policy breakthrough with a sense of disappointment. The EOP was a controlled exercise in policy that proved unwilling to delve much beyond Block A issues, to be attentive to local knowledge, to listen carefully enough to what Canadians said and to draw inferences from it. Indeed the central weakness of the report was its refusal to acknowledge the fundamental contradiction between a commitment to the market and a commitment to sustainable development. For this latter commitment can only translate into an expanded role for the state.

The final report developed a framework of principles that represents a sanitized version of the discourse of Canadians: it ensured the hegemony of efficiency considerations. To do so, cognitive dissonance loomed large. People not only have preferences but also beliefs, and preferences about their beliefs; consequently they are often led to choose their beliefs subconsciously (despite evidence suggesting that the contrary view is warranted) by choosing sources of information likely to confirm their "desired" beliefs and shutting out information challenging these beliefs (Akerlof and Dickens, 1982). In a way, the EOP has 'chosen to believe' that efficiency considerations were the hegemonic ones.

There are several consequences of this. (1) The EOP report has come to be dominated by efficiency considerations to the point of occluding other perspectives or of minimizing unduly the importance of the concerns they raised. (2) The broader integrated policy research framework one had hoped might be used has not been, and the interactive planning one might legitimately have expected to emerge from this experiment has not materialized. (3) The proposed meta-rules turned out not to provide the sort of guidance system likely to be of use in meeting the challenges of the next 'energy crisis'.

Eliciting Inadequate Meta-Rules

The Energy Options Process wanted to be an "opportunity for a dialogue", for a multilogue, "among Canadians about our common energy future" (Kierans: 1). Indeed, "A Canadian Dialogue" was the sub-title of the whole EOP. So, from the very first page of the report, there was an effort to summarize what Canadians said (WCS). This can be synthesized as follows according to the Kierans Report:

- WCS-1 Energy "cannot be treated just like any other market commodity." (p.1).
- WCS-2 "Energy policy must be founded on Canadian values." (p.2).
- WCS-3 Energy efficiency is important and markets are "invaluable instruments" to achieve efficiency but "governments should intervene in the allocation process only to correct serious market imperfections or failures." (p.6).
- WCS-4 Instruments used to achieve an appropriate degree of equity or fairness in income distribution should be developed but they should be as non-discriminatory as possible, be based on federal-provincial cooperation, and be such as to keep, as much as possible, the rules of the game stable. (pp.7-8).
- WCS-5 Energy policy should be developed on the basis of the general objective of "sustainable development." (pp.8-9).
- WCS-6 Development and implementation of new technologies should be factored in. (pp.9-10).

As the report itself acknowledges (p.10), such a summary of views — further synthesized above — cannot do justice to the wealth of information presented to the EOP. But on what basis can one challenge the validity of this sort of perilous exercise? Would it be warranted to do so on the basis of one's impressionistic/rapporteur coverage of the cathartic December 1987 synthesis meeting? This is the ground on which my counter-impressions are based: the official summary of "what Canadians said" does not convey as fully as one might have wished the

array of concerns that I heard at the final Montreal meeting.

Concerns about energy needs, redistribution rules in times of crisis, and security of supply were prominent; the debate over different notions of fairness, types of acceptable forms of regulation and the acceptable degree of socialization of risks were very much present; conservation as a supply option ("a unit of energy saved is a unit of energy found") and the need to mobilize the population to conserve were important messages conveyed in December 1987; the "time myopia of the price mechanism" and "free trade as a blind tyrant" were also central concerns. Little of this transpires in the summary of what Canadians said. Cognitive dissonance has been at work.

From this partly muted message received from Canadians, the EOP attempted to construct "a report on the direction of future energy policy in Canada that would reflect the best of all that had been written and said throughout the Energy Options process" (p.10). This is the source of the seven principles or meta-rules, each one being the central topic of a subsequent chapter in the report. It is worth restating these seven principles or meta-rules (MR):

- MR-1 "Canada's energy should be developed and used to its economic potential to provide growth and prosperity for Canadians today and in the future."
- MR-2 "Energy security is best sought in ways that increase energy choices and enhance adaptability to change rather than by hoarding or by government forcing uneconomic development.At the same time, Canada should cooperate internationally and maintain domestic emergency measures against possible oil supply disruptions."
- MR-3 "Environmental goals should be accorded the same importance as other economic and social goals in the planning, development and use of energy."
- MR-4 "To achieve efficient allocation of energy resources, market mechanisms should be relied upon wherever possible and enhanced where necessary."
- MR-5 "The fiscal system, as it applies to energy, should raise and spend revenues in ways that are non-discriminatory, neutral, stable and predictable, and that promote harmony among governments."
- MR-6 "Enhancing the economic efficiency with which energy is used should be an essential component of energy policy, both to make the best use of energy and to reduce environmental impact."
- MR-7 "Commitment to research and development and management of technology is critical to enhancing Canada's energy choices and environmental quality into the 21st century."

One cannot fail to detect a narrowing of perspective when the MR-list is compared with the WCS-list. In the MR-list:

(1) The efficiency framework is raised to a yet higher level of prominence.

(2) Concern for relevant dominant values is almost exclusively limited to the recognition of environmental values on par with other economic and social values; yet the extent to which such other values would appear to raise fundamental questions for the proposed market solution is occluded.

(3) The political gaming and public administration aspects of energy policy are handled without much depth: government intervention in general is played down; moreover, a technical rationality model of policy (from the center down) appears to prevail if and when state activities are allowed.

(4) Concerns about local knowledge, learning, collective action and implementation are virtually obliterated: the dialogue stops short of the implementation phase.

The overriding concern for efficiency, and the consequent reliance on markets as the main instrument to ensure efficiency, are the foundation of these meta-rules. This raises serious questions. It is difficult to see how these meta-rules could be of use as a project manual in times of crisis. Nowhere does one get a sense that they could guide an effective dynamic monitoring or provide anything but a rather inert leadership in times of crisis.

Four Components Out of Kilter

Why have Block A issues come to dominate the scene so completely? Fundamentally, because the EOP process did not emerge from a policy vacuum. It was constrained by the Tory policy framework. As a result, the EOP has refused to accept WCS-1 as a meaningful statement: whatever the rhetoric, the EOP regards energy as a market commodity like any other. Consequently, markets are seen as well-adjusted to handling it, and the burden of the proof is shifted entirely onto those who claim that the market is unlikely to do an adequate job overall.

Dominant values are almost completely overshadowed by the many references to **choice**. The word **choice** is used, throughout the report, both as a dominant value — let people choose — and as a synonym of **market** (p.43), for markets are seen as the best way, if not the only way, to operationalize choice. Moreover, **market** and **economy** become almost interchangeable notions and "non-market economy" appears somewhat suspect: MR-1, 2, 4, 5 and 6 end up hinting at the market institution as the solution. This is not only the case for "normal times"; little emphasis is put on emergency preparedness and vigilance, environmental concerns, research needs. These are mentioned but they are handled by exhortations marginal to the whole script. These exhortations are made in connection with elusive times of crisis, improbable eventualities when market mechanisms might lead to excessive exports, cases when markets might be blind to environmental points-of-no-return or to research needs. What emerges, is a sense that social values and collective action are bound to be handled adequately by the market and that there is simply a need for minimal and non-disturbing government intervention of a traditional market-failure variety. Such action is, in any case, seen as a lower order priority adequately dealt with by a refurbished National Energy Board (NEB).

The little time spent on spelling out exactly what a refurbished NEB might be asked to do is symptomatic of the philosophy underpinning the EOP report. There is little in the report that would appear to indicate what new role it might undertake, no hint that such a role might entail a radically different type of regulatory operation. There is no indication of any awareness in the report that regulation has taken a new turn over the last decades and that a refurbished NEB might have to become a negotiating tribunal, not simply an administrative ruler (Paquet, 1978). There is also little sensitivity to the central role of norms and values in this new sort of gaming, no awareness that the negotiating will have to be conducted over more than efficiency concerns, that it will have to be done over values, and not only environmental values.

Finally, there is no effort to give roots to any of this process in basic local knowledge and in civil society, no need felt for anything but the market as an institutional contraption to gather information and to coordinate activities at the periphery. The market model flattens this rich underlying social reality; there is no need to encourage local experimentation since the market mops up all the information worth having in this commodity world. Indeed the most depressing aspect of the EOP report is that, after having posited in the very first pages of the report the necessity to build an energy policy on Canadian values and a Canadian dialogue (p.2), the outcome might be said to have evacuated concern for values and dialogue.

Much of the reductionism of the EOP is ascribable to an emphasis on energy output, e.g., "oil barrel." A focus on production processes (exploration, transformation) all of which have multiphase and multidimensional impacts, would have led to a shift away from the fixation on **choice** to a larger concern for **design intervention**. Moreover, there seems to be little awareness in the report, as it espouses economic deregulation, of the interplay between economic and social regulatory dynamics. As economic deregulation proceeds, there is a strong push for some social regulation to ensure that the social costs of the market coordinating mechanism are prevented from growing unduly (Doern, 1989).

Implementation Vacuum

The poor coverage of Blocks B, C and D issues —

or rather the virtual suppression of these dimensions in the EOP report — sanctions the hegemony of the market as the response to the energy issue. This explains the lack of emphasis on implementation: there is no need to worry about implementation since there is no policy to be implemented. Quasi-laissez-faire has become the norm and absolves the policy research scheme from any responsibility in attending to the implementation agenda since the automatic pilot will take care of most of the problems and, the problems that remain, to which government must attend, are so dramatically reduced that no extensive discussion is necessary.

This is an energy policy by immaculate conception and a policy that requests little in the form of fanning from the center. The reciprocal is also true: since the market mechanism takes adequately into account the wishes, desires, wants and values of citizens, there is no need to experiment, to design mechanisms to promote learning from local experiment, or to organize public learning.

The EOP has not sketched a process of dynamic interaction between the stakeholders (and between planners and plannees) likely to continue the dialogue it was meant to initiate, and it has not suggested a mechanism for such a dialogue. The recommendations also do not propose a process of dynamic monitoring allowing strong feedback from the periphery and generating social learning. Yet without such a strong feedback mechanism, there is little possibility of learning and of ever dealing reasonably with wicked problems; social experimentation is stunted and, if and when it does occur, there is little chance of fanning its results over the system. There is no socially-organized-intelligence to guide the process of norm holding and implementation (Paquet, 1971).

A Provisional Evaluation

A standard way of looking at policy-making has identified four areas of concern: (1) goal setting, (2) control, (3) innovation, and (4) intelligence (Wilensky, 1967). The traditional approach to policy-making (referred to as type I) has largely emphasized the first two components because problems it was trying to deal with were rather well-structured; goals could be unambiguously defined and means-end relationships fairly well ascertained. In dealing with ill-structured or wicked problems an alternative approach (type II) is called for, putting the emphasis on the latter two components: intelligence as the basis for an innovative learning process.

The Energy Options process was conscious that it was tackling a wicked problem and that such problems cannot be effectively tackled through a type I approach. One could then reasonably expect that a type II approach would be used (i.e., a gambit on intelligence/innovation): "since the problem formulation itself is open, the evaluative function involves designing an information system to provide the medium for effective feedback between analysis and problem formulation. The interplay between norm-setting, goal-setting, course-holding, control on functioning, and organizational and institutional innovations becomes fundamentally dependent on organizational intelligence" (Paquet, 1971 (p.54)).

The EOP has produced an incomplete statement on energy issues. It has done much to launch a process of policy-making by defining guiding principles (and for this EOP must be praised) but those principles have been too narrowly defined to provide adequate guidance for navigation in turbulent times. Moreover, little has been done to ensure that the sort of dialogue EOP has originated would continue. As a result, it is unlikely that this report will have much impact. Cut from an implementation phase likely to bring with it new learning, it will dry up very much like any tree cut off from its roots.

EOP has failed. It has not set up the necessary organizational intelligence likely to generate a genuine learning process. It may have held hopes that it would do so, but it has not delivered the goods. This wicked problem has been approached as if it were a well-structured problem: simple norms have been declared goals and a simple control mechanism — the market — (sometimes aided by the NEB) has been declared sufficient to guide the policy in the right direc-

tion. This choice of research strategy may be regarded as hardly surprising by some cynics; it was predictable given the thrust of the Tory energy policy. But because of great early expectations that EOP might adopt a type II approach and set up the basis for a continuous dialogue with Canadians, disappointment has been greater in the end.

Some have suggested that, through the dual channels of on-going consultations of federal and provincial energy ministers and of a follow-up on the EOP report by the Standing Committee of the House of Commons on Energy, Mines and Resources, a second wind might be breathed into the Energy Options process. This is unduly optimistic. The Energy Options report is unlikely to fuel a sustained and fruitful debate in either forum for the very reasons we mention above.

5. Conclusion

It is not sufficient for the wise owl to tell the grasshopper that to avoid the severe pains of winter, he simply has to turn himself into a cricket and hibernate. The client might legitimately ask how one goes about performing that metamorphosis (Bennis, 1961). Similarly, one might ask about the likely contours of a research program and of an energy policy designed along the lines suggested above. On the other hand, since social learning can only come with practice and action, it is not possible to spell out completely *ex ante* the design of policy-in-the-making.

We cannot, therefore, sketch what problem formulation might have been generated by a learning process that has not been set in motion, nor what policy outcome might have ensued. The history of most policies through time is this sort of on-going dialogue between planners and plannees. The great limitation of a policy framework that does not provide a forum for such exchanges and build on such a dialogue, is that it is bound to become dated very quickly and there is a likelihood that the best features of this arrested plan (type I) will be lost in the process of evolution.

Some of the great successes in policy-making have come from a liberation from the fixation on goals and controls and from a gamble on process and a well-managed forum. Geoffrey Vickers (1965) has taken the lead in the analysis of policy-making in this way, but there have also been interesting initiatives in Canada (e.g., the Law Reform Commission). Nevertheless this view is not yet in good currency.

But problems are often wicked and the design of a learning system is the only way to break the artificial barrier between problem formulation and the process of implementation. In the type II approach, both components merge smoothly into each other and an evolutionary way of handling issues becomes the norm. The same process has been shown to work in private decision-making (Schon, 1983). It may be messy, and not as neat as that which dogmas or mathematics would edict, but it has the definite advantage of dealing with actual phenomena.

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