

THE FORESIGHT PRINCIPLE IN GOVERNMENT: NEEDS AND POSSIBILITIES

This article examines the role of foresight in government and explains why it is both necessary and rare. It outlines the characteristics of foresight, its main methods and techniques with particular reference to holistic models and their use.

The article identifies areas where foresight is needed as well as the types of constraints it faces. The relationship between foresight and planning is discussed, and some prescriptions and recommendations are offered

Keywords: community building, functional integration, environment, forecasting vs. foresight, decision-making.

PRINCIP PREDVIDEVANJA V VLADANJU: POTREBE IN MOŽNOSTI

Članek razmišlja o vlogi predvidevanja v vladanju in razloži, zakaj je hkrati potrebno in redko. Oriše značilnosti predvidevanja, njegove glavne postopke in tehnike s posebnim poudarkom na holističnih vzorcih in njihovi uporabi.

Članek določi področja, kjer je predvidevanje potrebno in tudi vse vrste ovir, na katere naleti. Razmišlja o odnosu med predvidevanjem in načrtovanjem ter ponuja nekaj predlogov in priporočil.

Ključne besede: oblikovanje skupnosti, učinkovita integracija, okolje, napovedovanje proti predvidevanju, sprejemanje odločitev

INTRODUCTION

This article is meant as a general discussion paper (or “think piece”). Its very first (and by now extensively revised) version was presented to the International Relations Workshop of the Third Norwegian National Conference in Political Science at Bardøla, Geilo, Norway, 4 - 6 January 1995, and addressed - in particular - the linkage from research to planning to decision-making (Solem 1995a). It posed several questions dealing with the **quality** of research, the **utility** of the results, and the **working relationship** between researcher, planner, and decision-maker. Some of the principal ideas, with inputs from subsequent discussions with a variety of different experts, were developed further and presented to the NATO AC/243 (Panel 7) Symposium on “Coping with Uncertainty in Defence Decision Making”, an international conference held at SHAPE Technical Centre, The Hague, on 16 - 18 January 1995 (Solem 1995b). Some of the ideas herein were included in a presentation to the 11th Norwegian National Political Science Conference, Trondheim, Norway January 2003 (Solem 2003a) while other ideas were incorporated in a the keynote address to the ISESS 203 Conference, held at the Panhans Hotel, Semmering, Austria, May 27-30 2003 (Solem 2003b). The present, extensively revised, version draws on the three previous papers as well as fresh ideas dealing - in particular - with the global mega-trends which face us as experts in our respective fields as well as collectively as members of the human race.

The analysis and observations contained herein are based on the author's own participation in several research environments; in different academic circles; within “think tanks”; and on the international circuit (mostly at the United Nations, NATO, IAEA, IIASA and OECD) and within the Norwegian national scene. Whereas the conclusions reflect primarily on English - speaking arenas, working conditions and institutions, there is little reason to assume that similar patterns could not emerge elsewhere in the foreseeable future. Hence the ideas and findings will hopefully be of some interest to a wider audience.

PRINCIPAL THEMES

Human survival and well-being largely depend upon our ability to anticipate and cope with future problems and threats. At this stage in the evolution of human affairs such a statement should come as no particular surprise. However, this ability, in turn, depends upon our capacity to perceive, evaluate and control the effects of our actions, present and future; as well as our ability to imagine and create more desirable futures. All these components are essential for a successful enterprise.

As is reasonably well known, several methodologies and techniques are available as aids to decision-making: However, they have so far been used only spasmodically or (in some cases) nearly at all. Why is this?

This article analyzes the rationale for studying the future within the context of some new, emerging challenges on the international arena. As an evolving “think piece” it is largely based upon direct experience in some specific (applied) research contexts and at various international organizations engaged in the production and delivery of research results for policy purposes. More specifically, this article briefly discusses the potential for, and use of, “think tanks” and the necessity and possibility of integrating foresight into the decision-making process. We shall identify some special characteristics of futures problems, as well as implications flowing from the process of looking ahead.

A NEW SECURITY AGENDA?

My level of analysis is the *international system*, and I am particularly interested in decision-making for global problems. Here there are some questions which I think ought to concern us more than most. Among these are the following:

- Which are the principal new trends in the international system, and how do they affect the structure of this system?
- Are future trends and global problems given enough attention in research and planning?
- Are the research results useful? Do they contribute as useful inputs to (political) decision making?
- Which changes, if any, are needed to improve decision systems and process?

As for the “new” trends facing the international system - which may in the final analysis not be really all that new but *re-emerging* - the most prominent among them in terms of political importance and policy-relevance, are the following, in no particular order:

- The question of nuclear proliferation (i.e. nuclear weapons, -material and -technology)
- Biological and chemical acts of warfare
- Resources and conflict (energy as mega-trend)
- ENVIRONMENT (including environmental warfare)
- Terrorism/Crime/Drugs

- Guerrilla wars and activities
- Social and economic upheaval
- “next-to-war” scenarios
- Pandemics, AIDS and SARS

Apart from guerrilla warfare and terrorism (which up to now was seen as a wild card), most of these problems are directly or indirectly related to the **environment**, by way of questions relating to resources and their control. It can be argued that today’s environmental problems are in general familiar, that they are quite widely discussed, and that they have, by now, become subject to both public and private scrutiny. It can therefore also be argued that most politically aware individuals “know” today’s problems in this minimum sense.

Processes are on the way in several institutions to define and assess the scope, the strength and - where possible - the direction of these trends and problems. Hence, in many quarters there is a search on for solutions, remedies or preventives (although the latter often turn out to be mere palliatives). In many capitals and other centres of decision making, it is understood that the stakes are high, as are the costs and rewards. Since recognised problems are now at the core of public interest, they get the attention of top decision makers, although this is often due to relatively frantic pressures from below and with the sustained help of the mass media.

Environmental concerns, which is what may occupy our attention most of all, have thus gone well past the status of being just another “issue”. The **environment** is, after all, where we live. In addition, environmental issues have by now entered the lexicon of “strategic threats”, i.e. to national and international security. An alarm bell went off in many foreign and security policy centres, illustrated by Robert Kaplan’s in the - by now well-known Atlantic Monthly article - (Kaplan 1994), and in particular by the ways by which this was picked up in important government circles in different countries. Looking specifically at developments in Africa, Kaplan had argued that impoverishment, repression and mass movement were the main factors of a coming global crisis, and that they constituted a self-sustaining cycle. And this, it could be argued, will, ceteris paribus, probably remain so, regardless of the measures undertaken or not undertaken by those same governments. What Kaplan did was - in fact - to re-introduce the “Limits-to-Growth” argument, in a different form, but with the same sense of urgency as that of the original Meadows-Randers-and-Behrens’ thesis, which had created the first full-fledged debate way back in 1972 (Meadows, Meadows, Randers and Behrens III, 1972).

These authors were among the first to apply their computer knowledge to the (proposed decision making) of global problems. From a methodological point of view, it is – especially now – relatively easy to find arguments against some of their choices, and several observers have done so. One could state, for example, that Kaplan's article illustrates the misuse of *linear projections*; that it ignores such critical elements of Futures research as the shortcomings of the concept of *exponential growth*, and the process of learning, or *"negative feedback"*. It therefore constitutes – in a weird and somewhat convoluted way – a case of *"discounting the future"*; whereas Kaplan's intentions may easily have been the opposite. (Seitz 1995, Hughes 1993).

However, none of these criticisms – only sketched here – should detract from the central points of concern, namely (1) how well are global problems and issues picked up by those who are meant to act on them; (2) how much importance is given to the same problems, and (3) which – if any – are the links between researchers and decision makers with respect to such issues. More specifically, how effective is the link between research and researchers on the one hand and planning and planners on the other? Finally, how useful are the results to the decision maker, perceived and de facto? We shall turn to this question shortly.

Specific global problems and issues which require our attention and the use of good tools as aids to decision-making may be organized under the rubric of **mega-trends**, of which I have identified three major variants (Solem 2007). By "mega-trends" I mean trends which are so large and all impacting that they cannot be controlled by a single unit, be it individuals, a nation, or a group of nations. They are so broad and all-encompassing that they influence nearly all aspects of social and cultural life. These trends cut across all 'normal' lines of demarcation, i.e. geographic, cultural, religious or economic boundaries. The first such mega-trend is that of **demographics and resources**. The question of population (or demographics) by itself is virtually meaningless. The question of population **and** resources is essential, as it contains the essence and principal determinants of sustainability.

We know full well that humanity is totally dependent upon an environment which has physical limits. We also know that the world population has more than doubled in the past forty years to reach some 5.5 billion, and could exceed 8 billion – perhaps even 10 billion – by the middle of this century. The cost associated with this growth is two-fold: decreased per capita availability of basic human needs (water, food, energy); and regional and global environmental degradation. The latter is highlighted by the spectre of global warming. Since population growth costs will not be anything like evenly distributed across the world, the already underprivileged groups of population will likely suffer most. Resource disparity may be further aggravated at least at three levels of social interaction: intra-social,

intra-regional, and finally along north-south lines. Some of these general tendencies may have been factored in for general strategic consideration by governments. Even so, the study and assessment of these issues is generally spread out among so many different departmental agencies in our western democracies as to be sub-optimal in terms of intended solutions. Whether they are fully taken into account in general strategic overviews, which in turn are being utilized regularly for direct planning purposes, is therefore a much more dubious proposition.

From an historical perspective, **technology** (our second mega-trend) has been utilised quite successfully to avert the most adverse consequences of, for example, rapid population growth. Today's developments in, say, bio-technologies, alternative energy sources and environmentally friendly technologies, have all shown promise (Gaivoronskaia and Solem, 2004; Solem 2005). Without technology we would very likely still be living in trees or caves. Furthermore, recent developments in information and communication technology will undoubtedly have an important impact on - and may even alter our perception of - humanity's full potential. Technology changes thinking in the same way as our thinking changes technology. Following the invention of the airplane, for example, the world shrank. The invention and development of radio-communications simply revolutionised military thinking, for example. Technology, therefore, has been changing man's thinking for a long time, and this process is interactive.

Regardless of which technology is going to be exploited, **capital** is as a rule required, most of which is held by the developed world. More specifically, due to the universal character of public debt, the bulk of discretionary capital is held in the hands of individuals and the private sector. Whereas the trend towards a global free market may have the potential of significantly increasing global productivity and prosperity (and some may disagree with this claim also), the effect will likely be somewhat capricious in the short to medium term. It would also likely be skewed towards developed and newly developed countries. Therefore, future trends in technology and economics may **widen** the gap between the have and have-nots, not reduce it; this, of course is assuming no political intervention. However, this process is of course not automatic, as we still have the capacity to plan and to learn. It is here that the idea of my third mega-trend - **human values** - kicks in. As far as planning and learning is concerned, I would like to think that, for example, Enviromatics could and should play an important and critical role (Swayne et al. 2004, Solem 2005).

IMPLICATIONS FOR PLANNING

What does all of this mean in terms of the functioning of the international system in general and for **conflict avoidance** in particular? As a response to some of the above trends, greater regional and some global collaboration could occur in such areas as trade and commerce, physical sciences and technology, and humanitarian assistance. Increasingly, the political primacy and sovereignty of the nation state (loosely labelled) may be called into question. The international community, dominated by the will and perceptions of the developed world could insist on individual state accountability on several major issues, such as economic and environmental management, internal security and human rights. Furthermore, nations may soon be held much more accountable for their actions on the high seas, in the Polar Regions and in international aerospace.

Notwithstanding the advent of an increasingly regulated trans-national environment, individual states may also come to face varying degrees of internal and regional instability. This will likely be fuelled by shifting and growing social disparities, population movements, and the global proliferation of modern weapons systems. It has already manifested itself in a minor upsurge of regional, ethnic and religious rivalries as well as random illegal activities. The future security environment could likely be significantly less polarised and apocalyptic than in the past. However, at a lower level of intensity, it could easily be more volatile, diffuse and anarchical. The lesser developed regions may assume the brunt of the instability, with spill-over effects impacting on developed regions to various degrees. How does all of this impact on the thinking and actions of the planners and the decision makers? More likely than not, they will be faced with a set of new and different problems which will challenge their capacity to adjust, and their ability of "learning to unlearn".

NEW KINDS OF PROBLEMS

The term **well-structured** problem is perhaps easily enough understood. This category consists of problems of the past and the present, as well as those which can be handled by the methods of normal science. Social sciences problems, on the other hand, are frequently **ill-structured**, characterized by the co-existence of very many variables and interactions, and qualitative and/or holistic aspects (Linstone and Simmonds 1977). They have also been referred to as "wicked problems" or "messes" (Ackoff 1974, Mason and Mitroff 1973). To bring the point home further; **Futures** problems often share these characteristics, with the added complication that the number of possibilities increases substantially, depending on the extent and time frame used (Solem 1980). Social sciences, through their techniques and methodologies in general, and those of Futures research (especi-

ally forecasting and foresight methods in particular) regularly address these types of ill-structured problems, and must, therefore, be approached from a longer term and (if possible) holistic perspective.

Whereas well-structured problems are often almost completely definable, either in theoretical treatments or through specific “agreements” by participants/observers, the case for ill-structured problems is very different. The definition of the problem may in fact differ from one observer to the next. There may often be little or no commonly agreed set of assumptions. Consequently, this is an area where perception could turn out to be at least as important as reality. When dealing with global problems we must keep this in mind. For pretending to define the future explicitly is to exclude its chief characteristic - its basic unknowability.

Ill-structured problems are alternately described as “messes” or “mega-problems”. They are usually seen as “messes” when nobody can be held responsible and as “mega-problems” when it is thought that they are beyond anyone’s capacity or ability to act on. Both are, in a certain sense a “cop-out” by analysts and planners alike. I will argue that both methods and potential organisational forms are available to help us deal with such challenges, much more effectively than has been the case before. Within the armoury of methods and techniques the knowledge and use of information and communication technologies will likely play an increasingly important role if and when applied fully.

PREDICTIVE AND ANALYTIC FORECASTING

Faced with complex situations, increasingly containing ill-structured problems, prime value must be put on the ability to define measure and communicate, in fact to try to incorporate “negative feedback”, i.e. the learning process itself into all planning and decision-making. Here the latest breakthroughs in information and communication technology must be applied. There is a large and increasingly important role to be played by the computer use and analysis on environmental problems.

However, human social, technical and political affairs do not by themselves lead to the adoption of an experimental approach, which could guarantee a deeper insight or a better mastery of our social, technical and political environment. Luckily, as we know, the social sciences have been able to produce some relatively sophisticated approaches for the analysis of complex systems. Not all are equally useful for any or all types of problems. Some are under-used; some over-used; while others may have become discarded, perhaps later on to be reconstructed; and some methods and techniques are revered. Delphis, trends analysis, linear projection, dynamic modelling, cross impact analysis, global model building, gaming, human and computer simulation, scenario writing, brain-storming, the

evaluation of alternative outcomes (alternative futures), “prospective analysis” and impact assessment are all in fact quasi-experimental methods which could usefully be gathered under the general category of futures research, or forecasting. These methods exist, they have been developed further, and they are ready to be used. Many of them require the knowledge and use of computers.

It may be important at this stage to draw what amounts to a critical distinction between **predictive** vs. **analytical** forecasting, and to explain why the latter is perhaps more appropriate to many or most problems facing the international system, which is my level of analysis here. “Predictive forecasting” relies almost totally on scientific justification. This calls for an explicit demonstration of the premises (suppositions, facts, data etc.) and the methods used for arriving at the given prediction, as well as (preferably) the assessment of its probability of becoming true. The typical example of predictive forecasting of this kind may be the modern meteorological prognosis, which does not simply predict rain for Sunday, but specifies “75 percent chance of rain on Sunday”, which is a much more useful statement for many practical purposes. Often such statements are accompanied by an overview, or a map of already existing weather conditions. Such a map will normally include not only data about the existing situation, but also show the fronts and flows that tend to determine tomorrow’s weather. Applied to social research, this would allow the recipient to see (some) of the evidence for the forecast, and maybe form his own views. Environmatics may be of direct use here.

Analytical forecasting, on the other hand, is not directly concerned with what will happen tomorrow, or at any specified date. Its main objective is to survey, as systematically and completely as possible what *chances* for development, and what *options* for action are open at present, and then to follow up analytically to determine to which alternative future outcomes these developments and actions could lead. Hence, in contrast to predictive forecasting, analytic forecasting is often couched in the form of disjunctive hypothetical inference: “Given A or B or C; if A then E and F. If B the G and F. If C then again G but K instead of H...” etc. We could argue that this particular approach is, often instinctively or intuitively, followed by the policy-maker, who will, for example try to assess available options through, say, technology assessments, technology forecasting or other methods of “prediction”. Furthermore, policy-makers will, almost automatically, try to consider the natural consequences of their own, as well as the adversary’s, possible actions in more or less this way. However, very often this process is done without any type of longer-term vision, in large part due to a pre-dominance of short term issue resolution or so-called “crisis management”, which has been the order of the day.

FORESIGHT, PLANNING, AND DECISIONMAKING

Foresight in government (or any other organization for that matter): what does it mean and, as a corollary perhaps how does it work? Foresight could possibly best be described as the overall process or set of analytical activities which creates and improves on the understanding and appreciation of information generated by 'looking ahead' (Coates 1985). This process includes quantitative as well as qualitative means for monitoring signals, clues and indicators of evolving trends and developments. Hence, it stands to reason that foresight as an activity is perhaps most useful when it is linked to policy implications.

To some extent foresight must also be directly applicable to help us prepare for the needs and challenges of the future. It is important therefore, that decision-makers and other political actors be involved in at least a good party of the foresight process early on, so as to allow the establishment of a direct interest, or a stake in what goes on; what goes in and what comes out of the policy making process. IF done well and carried out in a benevolent and mutually supportive manner, much stand to be gained. If done successfully, the process might lead to better co-operation among the decision makers involved in specific tasks, as well as a widening comprehension of the issues involved, and a greater understanding of the larger external environment and its interaction with the policy process itself (Coates 1985).

Turning to some specific problems facing research, bureaucracy and the application of management techniques, we observe the following: Traditional research organisations are becoming tied increasingly closely to governmental or corporate bureaucratic structures. This may or may not be by their choice. However, it normally means that, when facing intensified complexity, turbulence and competition, and with the quest for "efficiency" and "innovation", they are often led into a bewildering and confusing forest of management theories and practices (Rejeski 1994). What is often lacking to a surprising degree is the ability to focus on all the operational aspects of the **total** problem in anything like an unencumbered way. Instead, very often new approaches and management techniques are rushed in and tried out, even before previous approaches or techniques have been completed and found faulty or discredited. Several of these management techniques and practices have now moved from the private to the public sector. By now it should have become increasingly clear that management methods and techniques, by themselves or in some combination with quick fixes, will not help us deal with ill-structured and global problems. So what will?

The answer, I think, lies in some sort of judicious blend of foresight and planning combined with the understanding and use of good communication and information technology. Foresight again! Regarding information and communication technology in particular, new and improved used of environmental decision

support systems (EDSS) are also available (Swayne et al. 2000) and should be applied to their fullest extent.

The overall aim of this article has been to arrive at an understanding of what *foresight* is, why and how this concept is necessary and important, and for which functions in particular it is useful, hence where it could and should be strengthened - and at the same time to show why this type of foresight in (especially government) organizations, at least up to now, has been so relatively rare. The larger question of direct implementation within (specifically) government organizations has been dealt with elsewhere (Solem 1980, 1995, 2003, 2007), and lies outside the scope of the present paper. Foresight, as I have defined it here, is the overall process or set of analytical activities, which creates and improves on the understanding and appreciation of information generated by “looking ahead”. This process, or activity, tantamount to analytical forecasting, includes quantitative as well as qualitative means for monitoring signals, clues, and indicators of evolving trends, or - perhaps more importantly - discontinuities, as well as other developments.

Foresight, as a formal activity when direct results are sought, may be most useful when linked to the analysis of specific policy implications. An important concern, however, is how *directly* linked this activity should be. An important counter argument, to examine closely, is the need for positioning at least part of the foresight function at a certain distance from the intrusiveness of day-to-day politics and administrative interference. The former obstacle may not at least at present pose particular problems for universities as they are currently constituted, compared to say more tightly government run or controlled organizations. The future prospect for either type of organization seems much murkier.

Decision-makers and key “actors” should be involved in the foresight process early on. This allows the establishment of a direct interest, or stake in what goes into (and comes out of) the process. Based on considerable personal experience I would argue that, if done in a mutually beneficial, hence supportive and acceptable manner, this approach allows for optimal co-operation between analysts and decision-makers directly involved in specific tasks. It also widens the issue areas. In most cases this approach also leads to a greater understanding of the larger external context. What foresight (in government) cannot and should not do is to **define** policy. What it should attempt to do, is to help condition policies, to make them flexible or robust, whichever the situation demands. Furthermore, foresight is not planning. It may be, and often is, a step in a rational planning process. Whereas it ought to be seen as a necessary precondition for any such activity, it is often - for a variety of reasons which have been examined in this paper - not always found where it could be most usefully applied.

CONCLUSION

Which further lessons may be learned from all of this? One remaining problem i.e. that of the “disappearing decision” should be tackled by someone, preferably a group with sufficient knowledge of global trends and problems, fully computer-literate researchers who care to include futures techniques and prospective analysis in their work, sooner rather than later. Otherwise, could it be that, as Jay Forrester among others argues, the human mind is unadapted at interpreting the behaviour of social systems? (Kaye and Solem 1992). This would indeed be a dismal conclusion. Until now it has not been necessary for humanity to understand these systems, at least in any great detail. Our evolutionary processes have seemingly failed to equip us with the required skills to deal with systemic, interactive behaviour. However, this is no longer the case. Things have changed massively.

We must “learn to unlearn”. A second lesson is that of not “discounting the future”. Whereas short-term thinking appears to have gained the upper hand in many decision-making circles, at least for the time being; there are some hopeful signs that the tide may now be turning. Since we live in what the Chinese call “interesting times”, it is becoming quite clear that something much more profound and solidly rooted than expediency and cost-cutting is needed.

People who study strategic behaviour tend to use a variety of related adjectives to describe what now seems to occur in organisations acting in new, strategic and innovative ways. These include terms such as “hyper-change”, “quantum-leaps”, “radical innovation”, “strategic discontinuities”, “cultural transformation” and “paradigm shifts” (Solem 1980, 2002, Rejeski 1994). Whereas the forces behind such changes are often described as “entrepreneurship”, “vision”, or and strategic leadership, the process itself should not simply be reduced to recipes and the use of analytical tools. It clearly needs *both* an appropriate context and a comprehensive way of understanding the totality of both system and process. This is a major task for communication and information experts, computer scientists and other strategic thinkers alike.

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