NORTH-HOLLAND

A Brief Methodological Guide to Scenario Building

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ABSTRACT

This brief guide reviews the philosophical underpinnings of the prospective procedure then strives to explain the concepts and characteristics of this "intellectual undiscipline" which aims not to predict but rather to help shape the future. *La prospective* contributes to our efforts to gain foresight, an indispensable quality for anyone who wants to be an actor in a future yet to be created. The various stages of the procedure are presented, in particular the scenario method as applied by the author in local, national, and international futures projects for subjects as varied as aging populations, retirement in industrialized countries, and the impact of new technology on production. © 2000 Elsevier Science Inc.

Some Basic Concepts

La prospective[1] is not a Biblical prophecy or a prediction, and does not aim to predict the future. Rather than unveil some prefabricated future, *la prospective* offers an approach that helps us build the future. It enables us to consider tomorrow's world as something that we create, rather than something already decided, like a mystery that simply needs to be unraveled.

Note that the above statement represents a revolution in philosophical thought, since in the past the idea of a self-regulated system (or a system regulated by God) dominated according to its own logic (remember the idea of Nature as good) in which Man was merely a subject, was replaced by a philosophy in which Man became a key player, if not the master.

This is not the place to dwell upon the issue of determinism and liberty, so let us say that our fate is neither totally free nor totally predestined. However, the faith once placed in the self-regulation of systems and the individual's acquiescence to a destiny already laid out gradually gave way to the cult of the free and responsible Man. For better or for worse, Man became all the freer and more responsible as his power grew, primarily through scientific and technological progress.

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[1] The French term has a broader semantic field. *Foresight* in English comes closest, but lacks the notion of proactivity. We choose to use the French term, although sparingly.

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In sum, prospective rests upon three basic precepts that reveal a great deal about its philosophy, or at least the philosophy behind the procedure. The three precepts may be formulated as follows: (1) the future is a realm of freedom; (2) the future is a realm of power; and (3) the future is a realm of will.

Perhaps the above statements become clearer if we recall Gaston Berger's words: "Consider the future not as something already decided, something revealed bit by bit, but rather as something to be created" [1]. Indeed, Bertrand de Jouvenel [2] expressed a similar idea when he wrote "in terms of the past, Man's will is in vain; his freedom, nothing, his power, nonexistant, (. . .) The past is the place of deeds or facts that we can know" (and also interpret in many different ways!). On the other hand, "for Man, as a thinking subject, the future is uncertainty, whereas as for an active subject, the future is freedom and power."

The Future, a Realm of Freedom

In my view, the future is not already predetermined. On the contrary, it is open to many possible futures, or futuribles.

Of course if the future is not already determined, then it is essentially unknowable. There can be no "science of the future" relying upon modern investigative tools that simply replace crystal balls and tea leaves with powerful expert systems. Hence, the criticism of the term futurology, coined by Ossip Flechtheim in 1949, in an article entitled "Futurology: the New Science."

As thinking individuals, or subjects, we are disappointed by the preceding statement. Worse than disappointing, it implies that while uncertainty is growing, prospective appears ineffective in reducing anxiety.

It seems that the human race has always been preoccupied by its future. That anxiety is likely even greater today, given the rapid rate of change, the number of breakdowns (and breakthroughs), and the impression of chaos rather than well-regulated order, given the vast array of possible futures (good and bad) and the extent of uncertainty.

Mankind has always, even unwittingly, strived to reduce uncertainty. The result may be seen in: (a) our "ancestral" search for "invariables" in both the natural and social order; (b) our attachment to the old order and its reproduction (an order we know and to which we have become accustomed); and (c) our tendency to look for reassurance everywhere, for example, in others' words or in the drafting of laws and contracts.

The existence of invariables in nature, exemplified in daily and seasonal cycles as well as in climates, cannot be denied. Nevertheless, meteorological research on long-term forecasts remains an embryonic science, and human activity interfers more and more in the atmosphere perhaps breaking the so-called natural rhythm. It is worth mentioning here that the greenhouse debate was already keenly foreseen by Svante Arrhenius in 1910 [3].

There are also invariables in the social order. Hence, we find the formation of long series that reveal a constant movement, either linear or cyclic. However, despite the fact that certain trends have been spotted by historians, these trends will not necessarily always repeat themselves [4]. Once again, here we see the limitations of any forecasting method based on extrapolating from past experience.

Admittedly, there may be some perennial variables that only history will be able to prove; however, much research remains to be done in this area. What I wish to stress here is that the future is far from ruled or controlled by this type of law. For the most part, it remains open and undetermined.

Unfortunately the thinking individual must learn to live with uncertainty, a difficult task in our society, which makes a cult of truth and knowledge much more than of risk or liberty!

Fortunately for the same individual, lack of determinism opens windows of opportunity for self-determination and makes room for freedom.

Of course the futurist/prospectivist is not naively claiming the anything or everything is possible. He/she must identify an array of possible futures that are constantly changing; hence, they must be monitored on a permanent basis. This is the case even for phenomena characterized by tremendous inertia. Over the centuries we may have inherited natural resources, both mineral and minable, but we have also experienced: (1) rapid progress in science and technology that enables us to detect and use sources previously ignored or unusable, even find uses for materials previously considered worthless; and (2) even faster price fluctuations that were not exclusively generated by the law of supply and demand, and exchange rates that make resources more or less attractive in very little time, even though the materials have not changed in terms of volume or quality.

In sum, we must always be watching out for change, even in areas considered fixed. Inversely, we must also be vigilant in fields where we spot rapid change so as not to neglect the factors of inertia and those that simply function as a brake, for example, socio-organizational changes and new know-how that imply the adoption of new technology.

In fact, the function of an early warning system or futures watch (similar to a vigil if we translate closely the French notion of *veille*) inevitably forms the basis of any prospective procedure. It implies permanent analysis and evaluation of heavy trends and of ideas or seed events described by Pierre Massé [5] as "miniscule in current dimensions but immense in virtual consequences."

Before rushing ahead into methodology, let us point out here that our view of reality is often blurred by (1) means of observations, or even more rudimentary, our sources of information: (2) means of measurement or quantification, for example, the GNP per capita, which tends to favor whatever is expensive over that which is not, and which occasionally overestimates what could be seen as accessory while underestimating the essential; (3) weight of the theories that we use to explain phenomena; theories that often lag behind reality. A classic example: schools continued teaching that the atom could not be split even after the bombing of Hiroshima; and (4) influence of ideologies, more broadly, dominant schools of thought that often hide reality. In fact, some ideas may be circulated with that purpose in mind as an avoidance strategy. Another classic example: explaining the economic crisis as a result of oil shocks with new technology as economic salvation. Sadly enough, this equation is too simple to be true.

These errors, largely caused by a refusal to face upsetting problems and limitations or deficiencies in our analytical capacity, lead to ill-adapted strategies. Ironically these strategies are upheld through collective myths that we create as a substitute for a painful, even conflictual, reality. An apparent consensus appears, for example, the widespread idea that we stand at the dawn of a new age of growth ("Kondratiev rising"). Spontaneously, no matter what we do, this period will see unemployment wiped out, and the average working life extended; thus, all problems related to an aging population will be solved!

The Future, a Realm of Power

The great French diplomat Talleyrand once said: "When it is urgent, it is already too late." As the rapid pace of change increases, decision makers wade through files

marked "for immediate action," classified increasingly by the degree of urgency involved. Consequently, when a problem becomes urgent, does it come up? As a result, most decision makers have little room to maneuver. Not surprisingly, executives often justify their decisions by saying that they had no choice but to act. The truth, however, is that they no longer had a choice because they allowed the situation to get out of hand.

Necessity is nothing more than the result of a lack of foresight. The way to avoid this bind is to become aware of situations as they are taking shape and may still be molded rather than after they have already become a limitation. In plain terms, without any anticipation, there can be no freedom in making a decision. Those responsible for making decisions are up against the wall, busy "putting out fires" so they have little liberty whatsoever.

Indeed, foresight is needed to avoid constantly being forced to manage emergencies, but the rate of change makes looking ahead all the more necessary. Gaston Berger's [6] car headlight metaphor sums the idea up graphically: "If driving on a known route at night, a driver can go slowly while making do with one light only. On the other hand, the car speeding through an unknown region must be equipped with powerful headbeams. Driving fast without headlights would thus be foolhardy."

Fast, and increasingly unpredictable, change has led to the rise of theories like reactivity, which may be glossed as "if we cannot see ahead very well, let's be adaptable." Although attractive, instant adaptability is an enormous illusion for anyone in charge of an organisation or a team whose know-how cannot be renewed instantly and whose existence implies a minimum number of projects over time.

At this point, the long-term is the only horizon line possible for real indepth action to take place that involves new infrastructures, training, or different ways of thinking and behaving. In practical terms, a horizon line of a few months, or even 3 to 5 years, leaves very little room to maneuver.

Here, everything depends on how we see ourselves. Are we putting out fires or starting them? Michel Godet sets out four attitudes toward uncertainty and potential futures: passive (submit to change); reactive (await change to react); prospective in a twofold sense of both pre- and proactiveness. Preactivity requires that one prepares for an anticipated change; whereas proactivity requires action to provoke a desired change [7].

The future may indeed be a realm of power, but that power is not necessarily complete. There is also the problem of sets and subsets inherent to the coexistence of various actors who exercise different powers—some conflictual—simultaneously. Indeed, this is the actor–system relationship analyzed by Michel Crozier [8], who considered not only the set of factors but also the actors as essential to any futures-thinking exercise.

All the actors have some individual power enabling them to act. However, each one must make a forecast for information purposes (always uncertain information) on the movement started by the dynamic of that particular system and, hence, of others.

Let us use a classic maritime analogy to express the situation clearly. A navigator strives to gauge the wind, the reefs, the charts of other ships sailing nearby (anticipate the strategic environment, perhaps a form of monitoring or vigilance), and to act appropriately given the strengths and weaknesses of crew and craft so that the vessel arrives safely to shore. Reaching port is the navigator's project. As such, it is a project that requires planning, or even programming, for a strategy to be implemented through steering.

Anticipation and action imply a permanent dialectic that relies upon two different, yet complementary, kinds of logic that can be summed up as two questions: *What can happen? What can I do?*

Of course, the power of the various actors is unequal. The very distribution and growth of that power are at stake as well as strategies of alliance and conflict. The use of game theory concepts in futures studies should, therefore, come as no surprise; however, unlike the usual chess match, an extreme complication may arise but on a "chessboard" likely to shift as the pieces and even the rules constantly change.

The Future as a Realm of Will

Seneca said that "a fair wind blows only for the man who knows where he is heading." This classic aphorism points out the importance of an early warning function and of anticipation (*veille prospective*), which has a purpose only if there is a set of ideas or values that enable us to define a goal and to conceive of a desirable future.

Here, the idea of project as an expression of will comes into play. That will or desire must necessarily be included in the duration that may be all the longer when implementing a project that requires a break in the existing order and the mobilization of means that we do not automatically have. Therein lies the subtle balance of dream and logic. The dream gives us vision that we shape into a better tomorrow which, once sifted through reason—some might speak of feasibility studies—becomes the driving force behind our actions.

Intention is different from opinion, which is very much the result of a reaction, often fleeting, to an event. Hence, the main problem in futures studies or prospective remains revealing the actors' deep motivations beyond whatever they admit in surveys, which are rarely repeated regularly enough.

In fact, the essentially subjective dimension inherent in any project provides a major obstacle for any analysis of the future claiming to be neutral or scientific.

There is also the problem of negotiating the short, medium, and long term, an element that cannot be dissociated from any analysis regarding the intensity of desire, the power of an idea, decision-making criteria, and judging procedures. As an illustration of the above, let us consider that the main criteria used in decision-making today favor the short over the long term. Examples abound as in: (a) economic criteria that require maximizing profits within annual budgets are standard, so that a forester should plant coniferous trees rather than broad leaved trees. (Once again, the old debate of performance rates . . .); or (b) political criteria that translate to the single question: *What do I have to do to get reelected?*

This is not the place to dwell upon how a short-term decision may curiously be judged sounder than a long-term decision, even though the second degree negative effects may be far greater than the immediate benefits. Nor is it the moment to promote the long term, because time seems to fly. Instead, we must look beyond the slavish day-to-day routine to manage change in the direction we want.

The Prospective Process

The prospective process presents three essential traits that set it apart from forecasting in general.

First, prospective uses a pluridiscipinary approach of systemic inspiration based on the principle that the problems we face cannot be correctly understood if reduced to one dimension and sliced up like a salami, as we usually see things according to distinct

TABLE 1
Two Different Approaches Towards the Future

Forecasting	Prospective
Sectoral approach	Overall approach
Quantification dominates	Quantification and qualification
Principle of Continuity	Attention paid to breakdowns
GIGO[a] effect	CHAOS[b] effect

[a] Garbage in garbage out forecasts, no matter how sophisticated the simulation model, never can surpass the hypotheses used.

[b] By always saying that "everything is everywhere" and using the conditional tense (IF, THEN), the decision maker risks being overwhelmed by the logical process.

academic disciplines. Instead, prospective provides an approach that captures realities in their totality with all the variables that act upon them, regardless of the type of variable.

Borrowing heavily from systems analysis, prospective invites us to consider phenomena on the basis of a study of all the factors and their interrelations.

The prospective procedure integrates the long-term dimension, past and future, because: (a) in any system there coexist variables of great inertia, for example, variables related to the ecosystem or demographic change, along with others that follow increasingly short time scales, for example, technological innovations and foreign exchange rates; (b) only analysis over the long term allows us to eliminate "periodic effects" and to grasp the deep dynamics of the systems so that we may then analyze the real roots of systemic change with some distance; and (c) only the medium term and long term give us enough margin to initiate real transformation.

Prospective is a procedure that integrates breakdowns, thus rather than hypothesize that change is permanent, for example, tomorrow will be different from today just as today is different from yesterday, it strives to take into account the phenomena of breakdowns or breakthroughs, suffered or sought after, and the consequences of factors as diverse as (a) ceiling effects; (b) technological breakthroughs of all kinds and "habit breaking" actors; and (c) human desire to change the rules of the game (Table 1).

Basically, there are five stages in the prospective procedure: (1) defining the problem and choosing the horizon; (2) constructing the system and identifying key variables; (3) gathering data and drafting of hypotheses; (4) exploring possible futures, often with the help of tree structures; and (5) outlining strategic choices.

Defining the Problem and Choosing the Horizon

It seems basic, but stating the problem properly remains crucial so that the question is clear and the terrain well mapped out.

What is the correct timeline, or horizon? Some say that a good horizon line is that of break points, but this rule of thumb leads us into a vicious circle because it would require the study itself to determine those points. Moreover, there often is no sudden, clearly delineated breakdown, but rather a series of small ones which lead to a new dynamic.

In actual fact, a horizon may be chosen through approximation according to the following characteristics: (1) the inertia of the system and the need to blur the periodic effects that generate turbulence that could harm the correct understanding of the system; (2) the schedule of decisions to be made, the power to decide, and the means to be taken (note that drafting a strategy is useless if the means to implement it are unavailable); (3) degree of rigidity and motivation in the actors.

In the end, there is no secret recipe. Only a heavy dose of common sense and pragmatism are needed to choose the optimal horizon line.

Building the System and Identifying the Key Variables

The first step consists of identifying all kinds of variables that do or may influence the problem under study. A list should then be drawn up of the variables noted, with some consistency, for example, do not mix up run-of-the-mill variables with highly specific ones, and with as accurate a definition as possible.

This list can be drafted by one person; however, to avoid excessive subjectivity, it is usually compiled by a pluridisciplinary working committee made up of actors and experts. The list may lead to further documentation, interviews with experts, and various other consultations.

The second step consists of analyzing the relations among variables often with the help of a crossimpact matrix in which the variables are aligned and placed in columns.

The task now is to see whether variable A implies variables B, C, D, or E, and whether there is a direct link of causality (actual or potential) and how strong the link is in terms of coefficients, for example, 1 for weak, 2 for average, 3 for strong.

The quality of the diagnosis will determine the result so the arrow of causality must be clear. In other words, no confusion between A–to→B direct causality and, A←to–B inverse causality and, A→C→B indirect causality.

The painstaking task of filling out this type of matrix is always a burden, whether carried out as a working committee, experts in interviews, in documentary research, or even in specialized studies. Yet the benefit of this exercise is twofold: first, it lends the group a common culture and approach in terms of the problem being studied; and second, it ensures a certain quality in the results stemming from the matrix once it has been processed.

Processing itself may be direct, for example, addition of lines per column of the coefficients per variable. The results would be as follows: an influence index that measures the intensity with which a variable acts upon the system; and a dependency index that measures the intensity with which each variable is affected by the system.

A second processing phase may be carried out to increase the matrix to the power of 2, 3, 4, 5; however, experience shows that a stable level is reached quickly, thus revealing interdependencies at the second, third, fourth, and fifth degrees [9]. We can then deduce new influence and dependency indices to see which variables are the driving variables in the system being studied.

One option to consider is whether or not to integrate the actors in the list of variables. If not integrated, at the least the most determining ones will be listed on a graph, variable by variable, actor by actor. The power of each actor on each variable with respective strengths and weaknesses can thus be seen. Possible alliances or conflicts are also examined.

At the end of this stage, we have a fairly good idea of the key variables and main actors that determine how the system develops so we can move on to the next stage.

At this point, the question is whether to work variable by variable or in groupings, for example, by breaking down the system into subsystems (often called fields, domains, or main components) to explore the possible development of each subsystem. Note that this development is characterized in the microscenarios that are then examined in various combinations.

Breaking the subject down into subsystems, a technique honed with the help of François Bourse (Cnam), proved particularly useful during the study that I led in

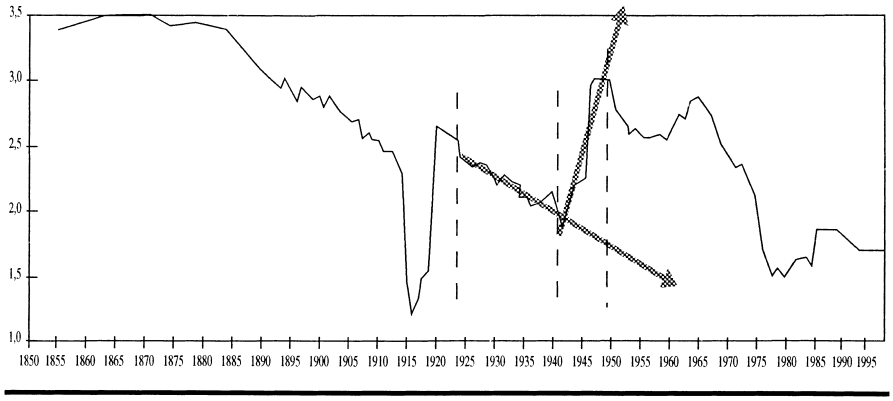

Fig. 1. As this graph showing French fertility rates (1850–1995) reveals, the time period selected changes the perspective.

1989–1990, "The Catalan Region in the Year 2010" [10], as well as in studies as varied as the future of retirement, agriculture, or rural spaces.

The objective is to work through each subsystem individually. The dynamics of each subsystem depends upon the development of the key variables whose range of future development we attempt to track by using contrastive hypotheses.

Given that a subsystem is ruled by four essential variables, we explore the possible futures of each variable and then examine the combinations between the hypotheses that allow us to create scenarios per subsystem. These are also called micro- or miniscenarios.

Using an identical procedure, once we have the microscenarios for each subsystem, we can consider the various combinations to build macroscenarios.

Collecting the Data and Drafting the Hypotheses

Without a doubt, this is the most cumbersome stage. For each driver, or driving variable, we ask the following three questions: (a) What is the past development of this variable? (b) What is its tendencial development (logical extrapolation)? (c) What are the curves and potential breaks which could block the tendential development?

To respond to the above three questions properly, we have to deal with five major issues:

1. Which indicators are relevant for us to consider the development of the variable? For example, is the GNP per capita a good indicator of the population's standard of living? Does the number of hours worked in the formal economy take into full account the time spent working by the population? Does the number of memberships held by a sporting association correctly reflect the number of people who practice that sport?
2. Which data are available, either qualitative or quantitative? How dependable are the data and, if necessary, what type of weighting system should be applied? (Examples abound such as the full definition of house work and the rate of income distribution.)
3. Which time sequences from the past should be retained given that in an extrapolation, everything depends on the reference used as a base? Hence, we see the fertility rate in France over the past 2 centuries has witnessed diametrically opposed trends, according to the time sequence chosen (see Fig. 1).

4. How to interpret past development? In other words, what are the causes of the effects observed? The absence of causal analysis may lead to absurd extrapolations because the cause has been exhausted. As an example, the progress achieved in life expectancy rates was for a long time caused by the decrease in infant mortality rates, which had resulted in an increase in the number of children. Yet we have now reached a ceiling beyond which any progress will be minor. On the other hand, another factor has now taken over—the later age of death—hence, the opposite result, an increase in the number of very elderly people.
5. Whose opinions? Beware the idea that dictates that the past is the realm of perfectly knowable facts and events while the future is exclusively the province of completely arbitrary opinions. Analysis of the past leads to several interpretations and still often challenges sciences.

The future is not the subject of gratuitous speculations; however, it is the subject of hypotheses which, unless tested, must be buttressed by indicators, analyses, etc. Such is the case for opinions relative to the ups and downs and breaks that may come about in a given tendential development, which may be paired with probability of occurrence as attributed to the said modulations and breakdowns.

After this stage, participants have for each variable a segmentation of past development and hypotheses for future development.

Note that a system characterized by only three variables paired with four hypotheses is capable of generating dozens of scenarios—even more if certain scenarios are not excluded right away in an effort to maintain some consistency. Simulation then becomes a complicated phase; hence, the use of such tools as econometric models and scenarios.

Simulation Tools

The two main types of simulation are models and scenarios. Models are systems of equation through which we try to represent how variables interact among themselves within a subsystem that we have already isolated; i.e., equation systems, which serve to generate simulations of the future.

This system is based on observation of the past, and assumes that the way in which we represent the past is correct. More importantly, the system implies: (1) that the subsystem already isolated, its morphology and physiology, will remain unchanged, for example, (2) that there is no ceiling above which the rules of the game within the system will be modified; (3) that the subsystem functions and without any question of a variable irrupting when yesterday that variable did not exist or simply had not been identified.

Lastly, yet most importantly, even if we assume that the subsystem will continue as independent, this simulation model does not guarantee accuracy or even the scientific quality of the forecast, despite its very scientific appearance with plenty of equations. The results remain the same: arbitrary and subjective, like the “input” hypotheses.

Experience reveals, however, that economists and demographers adore this type of model, which is becoming increasingly sophisticated. Nevertheless, their input hypotheses are often very rough, arbitrary, and not well backed up.

This method, preferred primarily by economists, econometrists, statisticians, and forecasters, has long been opposed to the scenario method, which is more developed and used by futurists for one simple reason: better a rough but fair estimate than a refined yet incorrect forecast [11]. In other words, it is better to sweep wide and large to glean the macrotrends rather than forge highly sophisticated tools for segments of realities that generate quantitatively precise forecasts that are generally wrong.

A scenario comprises the following three elements: (a) the base, nothing more than the representation that we create of the current reality and of the dynamics of the system that we are studying; (b) the paths created in looking at the system according to a time scale, with the knowledge that as we advance, the questions we face will necessarily imply more hypotheses (the *if this, then, that* process). Specifying conditions each time, using deduction, we build the trees of possible futures, potential descendants of the present; (c) the last images are obtained at different periods, and according to to the horizon line of the study, the result of the paths or routes mentioned thus far.

It should be stressed that generating the final image is not more important than the paths leading to it. What is essential in this process is specifying the scale of the phenomena and the time of their occurrence (contextualization).

For example, the vision that we have of the future of the welfare state will be different if we assume that unemployment will have decreased when the problems related to an aging population arise. On the other hand, we may see unemployment continue to rise until the year 2005, while people continue to take early retirement on their own accord and at younger ages. The conjunction of these two phenomena make it almost impossible to maintain the current system at the dawn of the new millennium.

Watch out for the current practice of producing a snapshot-type image as if it were a scenario for a given year without any consideration of how the situation developed. This practice almost always artificially shrinks developments so that the year becomes 2010 or 2020 indifferently. As a result, events that may be foreseeable 5 years down the road are confused with those considered unrealistic in less than 50 years.

Approximation is useful, but we must avoid formulations like "the aging population will be a serious drain on the public purse." How much and when? Similarly, we have to beware of ambiguous statements, for example "economic growth should reach X% between 2000 and 2005, since we might conclude that it is probable that growth will reach that figure (exploratory approach) while it would be best that it be X% (normative approach)." Obviously the two statements do not have the same meaning.

Obviously, the inherent danger in the scenario method is becoming confused when faced with the complexity of the paths. Another risk is teasing out a few major options and illustrate them with the results, mixing up the possible paths by generating too many scenarios. Simplicity is the answer, because the decision maker needs to be enlightened, not overwhelmed. Some simplify by probabilizing scenarios; others make a more arbitrary choice among a few large configurations.

The scenarios described herein are exploratory. A self-evident name, because they explore the range of possibles. They are completely different from the normative scenarios, which may also be called strategic in that they start from the present and more toward the future, using a goal set in the future as a point of departure. Like a time machine, this type of scenario travels backward to find the actions or measures that must be taken to achieve the goal in question.

One clarification: the procedure usually includes two approaches. Exploratory scenarios do the groundwork of what could happen, whereas strategic scenarios explore what one could do. Because a minimum quantification can be useful, even if only to verify the validity and coherence of the exercise, scenario building and the construction of simplified simulation models are being combined more and more.

Strategic Choices

No one expects the exercise to dictate what decision makers should do. Its value lies in shedding light on the path to take or in teasing out the heavy trends, the major

zones of uncertainty, the main risks of breakdowns, the challenges that we might face, the strategies that could be adopted, and their respective advantages or disadvantages.

It is up to decision makers to place their bets, sometimes in secret, sometimes after a public debate, that will be all the richer because the prospective procedure will have been transparent and the futures-thinking exercise will have been carried out in cooperation with the actors themselves. At this point, the problem of the decisional process and the role it plays in prospective enters into play. However, therein lies another article.

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