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The future of foresight—A US perspective

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ABSTRACT

The growing interest in business, government, and other organizations and users of futures research in the next ten to thirty years implies that the interest is largely to promote better strategic thinking and planning. Popular in the current futures lexicon is 'strategic foresight'. This article characterizes, as best the author can, the key characteristics of strategic foresight, under whatever name it occurs, by American futurists. The most central characteristic of American futurists and their approach as practiced around the world is eclectic flexibility in methods and techniques. The American approach is illustrated by the author's own decades of work for organizational clients.

1. Introduction

This essay deals with how we achieve strategic foresight in my consultancy, which I believe is representative, in whole or in part, of the practice of other American futurists.

1.1. Nomenclature

Let us get some nomenclature straight, because the words intended to define some future state or condition change over time and acquire different uses. For example, the term 'futurology' is outdated; American futurists generally use it only in a humorous sense or as an insult.

An important distinction exists between *forecasting* and *prediction*. *Forecasting* covers many areas with different goals—stock market forecasting, scientific forecasting, weather forecasting, with different baggage connected to each. Futurists' forecasting in any long-term sense tends to get confused with prediction. The characteristics of prediction are two: first, it is quantitative and involves specific descriptive numbers, and second, it is limited to a specific future date or interval. Consider, on a grand scale, prospects for climate change. Any change depends on specific numerically measurable changes in global temperature.

If one is looking out at the long-term future, as in forecasting or in foresight as described below, it is unlikely that any prediction will be made outside the areas of demography and public health. However, the job futurists do is often confused with prediction, so it is best to avoid the term altogether, unless one is actually making predictions.

Other terms that have come into play and are used to varying extent are *futures studies*, the *study of the future*, and as a pseudo-verb for one's personal activity, *futuring*.

Let us consider, now, the term *foresight*, which is frequently misused by futurists. Some futurists unthinkingly say it is a tool; others say that it is a procedure or a process. An equivocal vocabulary just adds to the confusion for clients. Foresight, as I see it, is an image, an insight, a picture, a concept about some future state or condition. It is an end state; it is not a process for getting to that end state, and it is not a particular instrument or tool for getting there. This essay focuses on a specific form of foresight, namely,

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strategic foresight, which deals with the future five or more years beyond the present. That distinction radically shrinks the population of people viewing the future for strategic foresight. In contrast, the large number of people employed in all advanced societies looking to the future is dominated by people who are involved in short-term futures—people in the stock market, people in business forecasting, people in product forecasting, people in government agencies concerned with agricultural and industrial production and international commerce and production. For those businesses, and government agencies regulating or studying short-term futures, five years is a convenient break point between strategic and operational planning. Using an older and more general jargon, those people are primarily *forecasting*, but in the current jargon, *prediction* is a clearer term for what they do.

There are always special cases, though. Some organizations combine their short- and long-term forecasting. The short term may be on a one-, two-, three-, or five-year time horizon. Those intervals generally have little or nothing to do with strategic foresight. The foresight that goes on in the short range is largely a result of the adoption of Henri Fayol's conceptualization of management and administration, early in the twentieth century.

2. Absence of strategic foresight

To illustrate the absence of strategic foresight in many, if not most, organizations, I have an anecdote. My staff and I were eating lunch when the phone rang. I answered it, and the caller introduced himself as the vice president for planning at a Fortune 100 company. We exchanged greetings, and then he got to the point. He said, "We are in the midst of our strategic planning, and we forgot about the future." After we each laughed a bit, the rest of our conversation was a discussion of what we could do to bring them up to speed, how long it would take, what it would cost, and whether there were any boundary constraints. It turns out that the project worked out well and had virtually nothing to do with their strategic planning, which, as it is in most companies, was a look at whether the short-term plans of yesteryear had been realized, and whether there was anything coming to cause goals to change.

One of our clients in the automobile industry told us to forget about the next five years: "They are cast in concrete and could not be changed short of a national disaster." That was useful news and became a point to explore with all our clients, namely, their short-term and strategic-planning time horizons.

3. General approaches to strategic foresight

There are two broadly different ways of going about acquiring strategic foresight. First is the French concept of *la prospective*. This was the creation of a French futurist, Gaston Berger, and has been widely adopted, particularly under the urging and practice of Michel Godet. The process is one that embraces not only looking to the future, but also incorporates action consequences for the client to help create that future, or if they want, to suppress a future that is undesirable. It can involve a year or more of monthly or bi-monthly two-day meetings with the clients. To some extent, the work relies heavily on extracting information, concepts, and beliefs from the client in a tutorial process, working them over to create strategic foresight and to define appropriate actions to realize that foresight. Several of the articles in this topical issue of *Technological Foresight and Social Change* discuss the French practice in useful detail.

The closest thing to the use of the French practice of *prospective* in the United States is the work of a California group, which derives from the work of Shell Corporation, which in turn derives from the work of Berger. The central point to that, as practiced in the United States, is the necessity for futurists to work closely with their clients to draw out of the clients more and more information, beliefs, concerns, and knowledge. All this operates on the implicit assumption that the client potentially has a great amount of the information that is needed to create a foresight vision that is sound.

Since the French *prospective* is the only comprehensive integrated and specifically named process for doing strategic foresight, it is a convenient concept for comparison with other approaches. The big difference with the US strategy, as illustrated below, is that it assumes that the client has to be presented with a large body of new information to complement what they already know. What comes out of that necessary mix of old and new knowledge and concepts is new and useful foresight. Practitioners of *prospective* work intensely with their clients in frequent meetings.

As I see it, the expansion or contraction of strategic foresight depends on several considerations that will unfold over the next decade. First, the usefulness of strategic foresight can be determined only by the actions clients take in response to it. Second, the client base is almost sure to expand and include more of the largest corporations and be used more often by trade associations, public interest groups, foundations, and other large organizations as word gets out as to how useful strategic foresight is.

There are factors working against strategic foresight. First, there are organizations that may have used the concept and were damaged, even put out of business. This outcome is unlikely but could come about through letting the processes for creating strategic foresight fall into the hands of amateurs. Second, training in strategic foresight is primary to expanding the competence and use of futurists. The extent to which this training is now underway in several graduate school programs, in the United States and elsewhere, remains unclear. As far as I know, no one has yet looked at the curricula of these programs to see what is taught and what is not. Business schools in the United States turn out primarily MBAs (Masters of Business Administration). These schools have a near zero record of seriously training students how to think about the long-term future, a requirement for dealing with strategic foresight. However, there are always new fields coming along to which the search for strategic foresight will be appropriate. Many of these will be scientific or technological, with additional fields coming out of global affairs and politics, and social goals and objectives.

To turn now to the American style of strategic foresight, I will take my own experience as the model. I do not think that many American futurists, except as noted earlier, deviate far from the model about to be outlined.

In my thirty-five years as a consulting futurist, I have had between ten and twenty people working for the company, including myself. We usually dealt with two types of clients:

1. The single company or organization client that is concerned with either a single topic or with a wider industrial or business future.
2. Multiple clients operating the same way and working together on a project, either looking at an industry or some potential industry future.

The advantage of the multi-client project is that it brings in anywhere from twelve to thirty-five clients, each of whom has a relatively modest fee to pay, that in the aggregate allows longer and deeper digging into the future when creating reports. There are no problems of conflicts in terms of company or trade secrets being revealed; everyone knows what they may or may not say at our group meetings.

Short of a project, assignments include:

1. Briefings and a workshop exercises for clients that are beginning or already pursuing some kind of futures activity.
2. Short courses ranging from one to three days on the general future or on the future of a particular topic, with extensive Q&A.
3. Articles written on a volunteer or fee-for-service basis in order to force ourselves to keep up with a topic or to build a knowledge base and reputation in a field, such as several aspects of science and technology, human resources, or international affairs.

4. Principles and goals

4.1. Principles

Three principles underlie any study of the future, and are especially strong in developing strategic foresight:

1. We can see the future to the extent that it is useful in planning.
2. We can influence the future to make the good and the desirable more likely and the undesirable less likely.
3. The ability to anticipate and to influence creates the moral obligation to study the future.

Some people raise a semantic argument; in other words, that you cannot study the future because it does not yet exist. Consider that most of the film industry, a large percentage of television programming, and hundreds of novels published every year deal with worlds that do not yet exist. Intellectually, people have no problem with that, and, as discussed below, the constant use of plausible reasoning is what makes studying the future not only practical but absolutely crucial to successful management.

4.2. Goals

Goals in creating strategic foresight *should* be explicit, understood by the team, and receive emphasis in proportion to their significance to the client, as we understand them. The first goal below illustrates the point that goals *need not always be made explicit to the client*. Goal 1, for example, if made an explicit point, could harden the client's attitude toward necessary change.

1. To change people's minds or, more explicitly, to have them reveal to themselves their tacit assumptions about the future and change them. This goal is sometimes achieved by prodding the client with information that is uncongenial and often leads to blurting out a deep-seated belief—e.g., "Women will never…" or "The Chinese have no competence in …." If this happens in meetings, we have the opportunity to push hard with illustrations that challenge the client's obstructionist preconceptions.
2. To refrain from advocating for a specific response. Because the objective is to change the user's mind and stimulate his or her creative imagination. Were we to advocate solutions, actions, etc., our value would decline. The client would concentrate on the strengths and weaknesses of what we proposed rather than concentrating on the futures material presented, and coming to his or her own conclusions.
3. The study of the future is not and cannot be a science. It is an art form that draws on all of the arts, sciences, and humanities.

4.3. Operating principles

1. An exploratory principle—every subject whose future is worth studying is a "system."
2. Good futures work is public; that is, people have the right to know what was done, how it was done, and hopefully feel that they understood that well enough, that with time and patience, they could study the future and come to similar conclusions. In institutional, particularly business and government areas, traditional concerns for security and confidentiality narrow the concept of 'public', to the users within those institutions. No black boxes or crystal balls.
3. The best work does not attempt to define the future, because there are so many forces at play in a complex system, and such a broad range of potential outcomes. Instead, good futures work discusses 'alternative futures', where each of those alternatives is rich in policy implications for the clients.

5. Uses of strategic foresight

There are numerous uses for strategic foresight and other futures studies, for example, to:

- Extend traditional planning horizons, and even draw the client into ten, twenty, or more years of strategic foresight and planning.
- Cope with the unexpected (a common occurrence in business and trade associations). To understand the implications of the unanticipated situation, one may need a narrowly targeted futures study, or one as large as the whole company or the whole industry or business sector.
- React—a specific form of coping, which implies relatively rapid response. The French *prospective* makes an interesting and possibly useful distinction between *preact*, that is, preparing for expected changes, and *proact*, acting on the desired outcome; *proact* implies acting to deal with external changes that are imminent or likely, and represents a kind of anticipatory coping.
- Stimulate creative thinking. This may be the specific basis for a futures study emphasizing strategic foresight. On the other hand, almost any good futures study will stimulate creative thinking, as an indirect benefit.
- Widen alternatives by shaking the assumptions underlying an enterprise. This is a highly probable outcome of a good futures study, whether or not directed at strategic foresight.

Useful futures work can be performed on any scale, with any time dimension, and for any purpose. Consequently it does not imply, as *la prospective* does, grand planning, including management actions. The French tradition can be looked at as a metaconcept that goes beyond the materials highlighted in this essay to include the needs for intimate and extensive client involvement and the preparation of an action plan. In the United States, the general process, as exemplified by this essay, does not use any rigid plan for achieving strategic foresight.

To study the future, we must have a team or a single person with enough time and a plan or strategy to go through the stages of work defined in Fig. 1, How to do a future study. It is comprehensive enough to be the work plan for the study of the future of any topic. The convenient first step, even though one could start anywhere, is to describe the system to be studied.

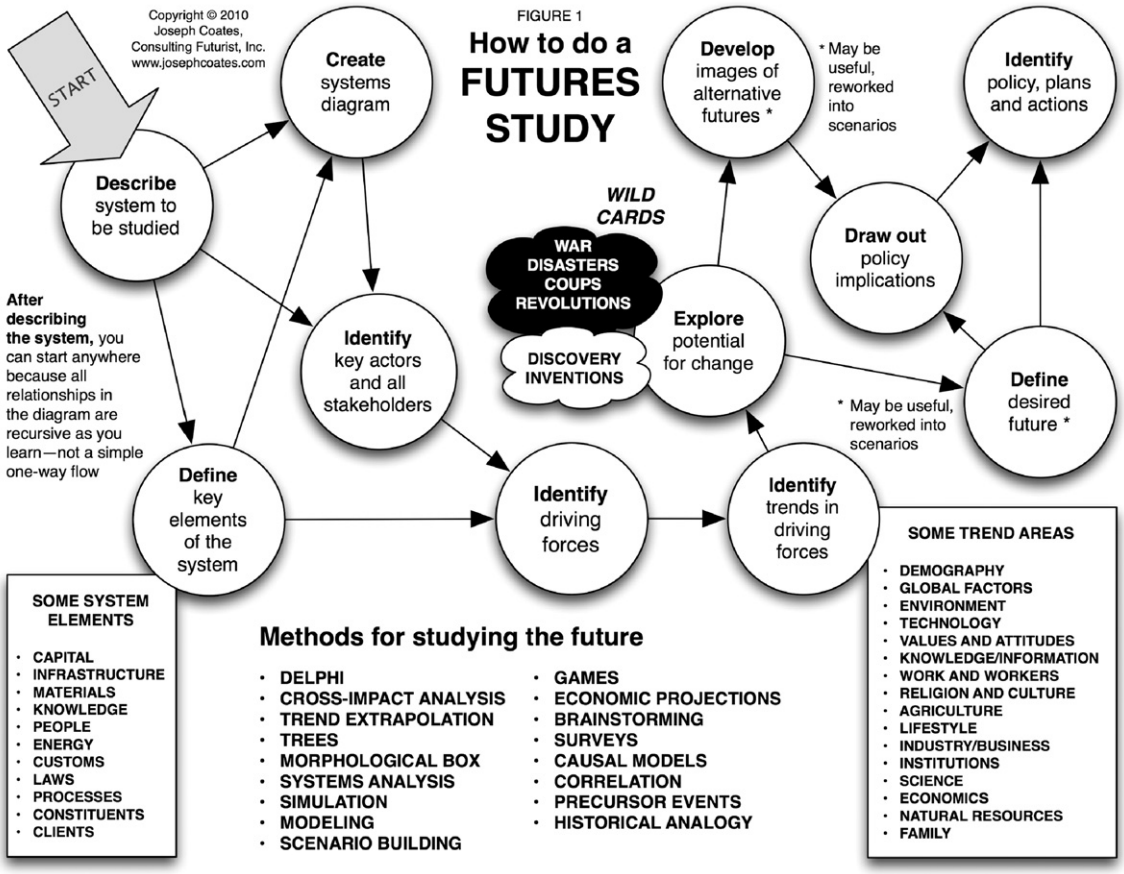

Fig. 1. How to do a futures study. Copyright ©2010 Joseph Coates, Consulting Futurist, Inc.

6. Doing a futures study

What looks like a simple straightforward effort is actually quite difficult. If the client has asked for a study of a particular topic, it is likely to be a piece of a larger system. If the study is limited to the client's requests, it may miss sources of stabilities, instabilities, and creativity. The project must define the system, using a system's diagram.

A good example is illustrated in Fig. 2, The packaging system. Preparing that system's diagram was an extended activity, modified throughout the project as the team learned more and more. As far as we know, that packaging-system diagram is part of the first study ever done of the total packaging system from raw materials to ultimate waste disposal. Moreover, it was international in scope. Completion of what appears in Fig. 2, from first draft to the final working version, took about a week, with several people contributing. Fig. 2 became the centerpiece of the work, because it amounts to being a checklist of what things and relationships are to be covered, and whether they were. It kept the clients informed as to where we were in the project. The diagram has in opposite top corners, the most prominent sectors using packaging and the seven most common packaging materials that are all in competition with each other.

Returning to the previous diagram, Fig. 1, How to do a futures study, we identify the key actors or stakeholders. We take stakeholders to mean any group, person, or organization that affects the system or is affected by it, including labor, management, customers, stockholders, regulators, competitors, and numerous others. On the lower left of Fig. 1, we want to identify the key elements of the system. Beginning with those key elements, the largest and most important of them, we move to the right and identify the driving forces. The driving forces may be forces for change or they may be forces for stability. As we move farther to the right, we identify the trends in those driving forces. For example, in almost every subject, population and other demographic considerations are important. Sometimes they stabilize, sometimes they destabilize, and sometimes they reverse a situation. Next, we move from identifying the trends and driving forces to the circle of exploring the potential for change as the result of the individual and collective forces identified.

Then we move on to developing images of alternative futures for the topic of the study, and from there we draw one or two levels of implications. The first level is policy implications. For example, if we are studying the automobile, we might come to the conclusion that China will be the world's biggest market for automobiles and then draw out of that a policy implication that the client should begin to consider whether it should take any action. The decision may focus on opening some kind of business directly in China, manufacturing or assembling some part of the automobile.

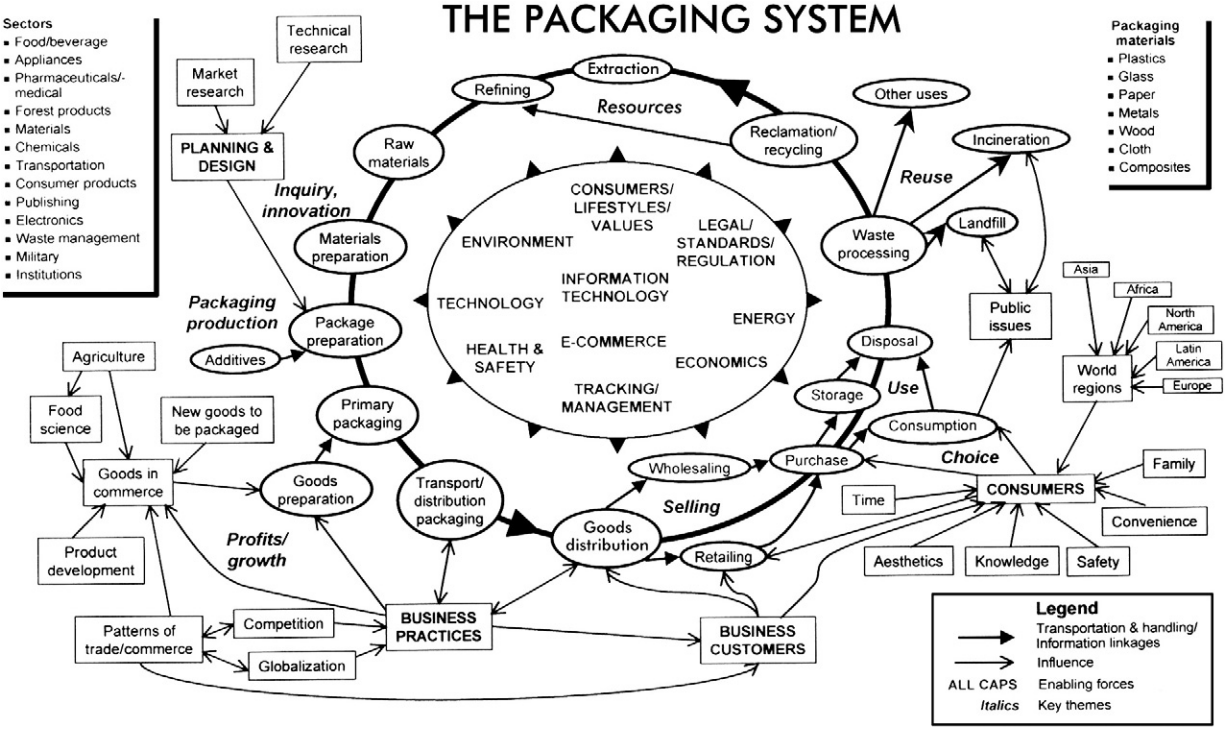

Fig. 2. The packaging system Copyright ©2010 Joseph Coates, Consulting Futurist, Inc. The packaging system is a typical systems diagram in that it pulls together all the elements comprising a system, including the trend areas affecting it, and the organizational units making it up, which feed into and flow out of the central activities of the enterprise. Key themes (activity clusters) such as Choice, Reuse, Resources, Inquiry, and Profits/Growth are also indicated. The diagram is prepared early in a project to guide the detailed study, and often it changes as the work identifies new elements or relationships. A systems diagram for another topic would differ in the system components and the trends.

We then move up to the second level of policy, namely, what in the short run should be done. Again, in the automobile case, the client might consider hiring some consultants specialized in China or evaluating the quality of Chinese material and the country's capability for manufacturing vehicles. There are a large number of other nitty-gritty questions to consider, which flesh out basic policy implications.

As noted earlier, alternative futures are a central recurring concept in US futures work. It is realistic and useful to draw out four to six futures that are plausible, but more importantly, policy-rich.

Sometimes our clients are not interested in our drawing out the policy implications or the policy actions. They would much rather prefer to hold their cards close to their chest, and do the policy implications themselves. Sometimes the client would like us to present a desired future for the client's organization.

At this point, the question of scenarios comes up. In our work, scenarios are solely a tool of presentation. They are not a tool for generating ideas and concepts. This is in sharp contrast with the work coming out of the French school and out of the Shell Corporation's planning. It is an important distinction because we do scenarios usually at the end of a project to illustrate various alternative futures. American clients, whether in business or other institutions or government, tend to break into two groups with regard to scenarios: Those who hate them, or those who really become quite fond them, even addicted. Consequently, in our work, we always present conclusions in straightforward text form so that if readers do not care for scenarios, they do not have to work their way through them. For those who find scenarios particularly compelling, the scenarios cover the same materials as the text.

If we look at the center of Fig. 1, we find that some of the 'wildcards, or unexpected events, are listed. These include war, disasters, coups, revolutions, discoveries, inventions or diseases. What other wildcards could there be and how might they affect the work that has been developed so far? It is not uncommon to have a list of wildcards that runs to 60 or 70 items. Once we had a list for one client that went to 125 items. We tend to treat them as perturbations on the basic analysis. We cluster them together in terms of what their common effects could be. For example, a number of wild cards may lead to reduced discretionary income on the part of many people. We then do brief pieces on what the wild cards or their clusters imply for the overall strategic foresight.

Two of the boxes on Fig. 1 are reminders—one of some recurrent systems elements; the other, of generally important trend areas. The lower center of Fig. 1 lists frequently used tools and methods for studying the future, especially useful in developing strategic foresight.

6.1. The study schedule

Doing a strategic foresight study usually takes nine to fifteen months; we prefer to take the shorter time because the team tends to get tired of or almost bored with a project that runs too long. In any case, we make arrangements so that we will meet with the client three to four times, usually for an evening and one or two full days, in which whatever work we have done is presented to them for comment and discussion. The evening before meeting, we have dinner with them. If it is a multi-client study, we interrupt the dinner just before dessert and have half the people in the room change tables. That way, each of the clients has an opportunity to spend some conversational time with colleagues or acquaintances with whom he/she rarely has an opportunity to spend time.

In terms of the cycle of work, we often do a foresight project three times. We do the whole study in one to two weeks. The function of the study is to delineate what we know fairly well and what we do not know well enough from our systems diagram. We then assign different portions of the work to different staff members. The team does not meet according to any fixed schedule, but we do meet when someone has something worth discussing.

As the project draws to a close, we prepare a full final draft of the report, which goes to the client in whatever number of copies they wish. It is understood that that is for a briefing, and a review on their part. We then conduct the briefing for the client at their facility. If it is a multi-client project, the briefing will be at one of our regular meeting places. In any event, we leave the report copies with clients for however long it takes them to do their internal reviews and commentary. We then modify the draft report to answer their questions and clarify either uncertainties or our unclear writing. That final report is provided in a small number of hard copies (six to ten) and a CD from which the client is able to make as many copies as needed for dissemination.

Every bit of work is not only a product to be disseminated to our clients but is also an educational experience for the staff. As the report is produced, it is reviewed by all the other members of the team and by anyone else in the office who would like to read it. Then there is a sit-down discussion. Aside from the team, other members of our staff are encouraged to attend client meetings and client dinners.

Trend areas common to most topics considered in developing strategic foresight are listed on Fig. 1. Several of them are so close to universal in their effects that we have built quite a library and a knowledge base just from repeated explorations for numerous studies. The most common general trend areas are demographics, social change and social values, information technology, science and technology in many different areas, business functions, and international and global factors. With practice, the staff becomes increasingly competent at finding, identifying, developing, and interpreting those trend areas for a project.

6.2. Stable generalizations

Stable generalizations of many kinds ought to be sought out and incorporated into the work leading to strategic foresight. As mentioned above, a stable generalization came out of one of our automobile-industry clients: "The next five years are frozen, do

not worry about them." There are numerous other kinds of generalizations that are helpful and ought to be sought out, depending on the subject and the client. Here are two examples:

1. As developing countries prosper, their people want four things:
   - More meat in their diet;
   - Automotive transportation;
   - Infotechnology;
   - Travel/tourism.
2. There is a strong linkage between work and leisure/recreation.

The American method of futures work, in contrast to the French (*la prospective*), is more freeform and draws on an indeterminately large number of areas and factors. The work can be broken down into modular components which allow one or two people to pursue a module. The most important factor, however, is that the client is involved, if at all, in a radically different way from the European-*prospective* model. Our clients do not do the futures work. Our clients receive, review, evaluate, comment, accept, and use our futures work. We usually develop the policy implications at two levels, or our clients do this at their discretion. However, in the French practice, the client plays a central role in identifying the policy options. The difference is we put our best thinking in front of the clients, and they sort, collect, and build on it and integrate it into their best thinking as the work unfolds.

The fundamental difference between the US method, as I have described it, and that of *prospective* and its international and US disciples, lies in two key points. First, in the *prospective* process the team works strenuously with the client's executives on what the future forces, issues, and options are. We reject that approach, and find that the clients need a substantial, cogent injection of information, and its interpretation, in order to increase their relevant knowledge, enhance their judgment, and come to better conclusions.

Second, the adopters and adapters of the French tradition have a more formal range of methods and techniques, whereas the American approach is eclectic (see Fig. 1), fitting the techniques to time, budget, topic, and reliability.

A third point, less clear at this writing, is that futuring in American practice is often done on a small scale—lectures, briefings, seminars, and journal articles—without explicit involvement of everything on Fig. 1. Clients, particularly those new to the study of the future, often want to have an introductory or trial sample of futures work.

7. Government as client

Government is an important client for futurists because it has the greatest sweep of influence. My firm has done strategic foresight projects for numerous government agencies—Department of Agriculture, the Environmental Protection Agency, the Forest Service, the Bureau of Reclamation, the Corps of Engineers, the CIA, the Census Bureau, Housing and Urban Development, the National Security Agency, and the National Weather Service. The important characteristic of each of these is that they were not wide open studies of the whole organization and its mission, but were generally framed around specific topics or problems. When the work is completed, it is usually briefed once or twice, sometimes more often, and then written reports are rendered. In general, it is unclear what kind of actions resulted from a study of the future for these agencies, because a study is only one of many of forces operating on the agencies, including constituents, the Congress, the White House, and various public interest groups. The agency-related work is often extremely interesting and a great pleasure to do, but the dissatisfaction is in not knowing what the action consequences are or will be.

7.1. The OTA (Office of Technology Assessment)

Sometimes an event of great importance occurs. One of those was the formation of the Office of Technology Assessment (OTA), in 1972 by the US Congress. The Congress had until then never had an organization of its own that could pursue any kind of issue in-depth and be oriented toward the longer-term future.

The Office of Technology Assessment (OTA) was set up in the era of fierce public concern over environmental pollution, with the mission of alerting Congress to possible future consequences of new, expanding, or changing technology. The OTA was structured to be responsive to both bodies, or Houses of the Congress, and to both parties. Its governing board consisted of six Senators and six Representatives, with an equal number from each of the two political parties, regardless of their party's number of seats in Congress.

In practice, OTA studies were undertaken in response to requests from congressional committee chairs. Therein was the double vulnerability that finally killed the agency (in 1995).

OTA's studies came to be highly regarded, nationally and internationally, as the most thorough, sound, and balanced policy studies available to Congress and to the public. The method was one of repetitive outreach to experts and to real and potential "stakeholders" on the issue being studied, through advisory panels, public workshops, and scores of telephone and personal interviews. (The Web and browsers were not yet available.) Each project's draft report went to scores of reviewers, and the reports were rewritten repeatedly. The thoroughness of the OTA method meant that by the time a study was completed—usually they took one or even two years—the Congress had often acted on the issue being studied, or the requesting committee had moved on to other more pressing concerns. Some OTA reports nevertheless were influential in congressional deliberations, and nearly all were useful to special interest groups and stakeholder constituencies that in turn were listened to by Congress.

The writing of the reports was the job of the staff, with any external support that they needed on contract or by people who were available on a voluntary basis or sometimes people seconded from an Executive agency. By the time OTA had reached its third or fourth year, it had become a highly productive and extremely well-regarded policy research group. After five years, it was without question, the finest policy research group in Washington, in or out of government. It, however, did not deal significantly with the longer-term future because its governing board had a different agenda: it wanted OTA to turn out detailed reports, dealing with the pros and the cons of all the parties with an interest (stakeholders), for those topics that would be coming before congressional committee hearings within the next year or so.

From the beginning, the OTA's outlook to the future was sharply limited. Congressional terms are limited to two years for House members and six for Senators so their driving interests, and their committee requests, were focused on problems already urgently on their agenda rather than those that might arise in the longer-term future. But because of the wide range of the studies—agriculture, education, infotech, national security, the environment, transportation, etc.—and because of their thoroughness, they continued to be quoted or cited in public policy discussions for years after OTA's demise in 1995.

OTA was so attentive to its client that as word of OTA got around the country and around the world, there was a great deal of foreign interest in whether the concept could be adopted by other countries. It was.

When the Republicans won in a presidential and congressional sweep, they had as one of their main claims that government was wasteful and dispersing too much money. Under Newt Gingrich, a leader of the Republican Party in the Congress, the young Republicans (many of whom were experiencing their first time in federal office or even in government) decided that they would show the public at large that they really were concerned about saving money, and they would show their concern by killing one of their own four support agencies. They kept three and killed the OTA.

The OTA had one fatal vulnerability: during the twenty-three years of its existence, both Houses of Congress were—except for two years—dominated by the Democratic Party. Therefore, the committees to which the OTA responded were chaired by Democrats. In 1994, the Republican Party suddenly won both Houses, and in an orgy of budget cutting and government downsizing, the OTA—tainted by its apparent too close association with the losing party—was "defunded." It can therefore be seen as a failed experiment, since Congress allowed it to be dismantled. On the other hand, it had been a model and stimulus for other countries that created policy-oriented government or nonprofit organizations to help Parliaments look to the future, e.g., the United Kingdom's Parliamentary Office of Science and Technology (POST).

8. Business as client

Business clients for the study of the future generally can be broadly categorized as either individual businesses (mostly) from the Fortune 200 companies or trade associations. Virtually every industry has one or more associations looking out for its interests. In terms of the scope of what these business clients are interested in, the associations generally have a wide view of what their interests are, namely the future of the industry or the future of the individual enterprise. Individual businesses tend to have a wider assortment of subinterests.

Frequently our research on strategic foresight is done for research and development; in other cases, it is done for human resources or for the executive suite, which is made up of the top dozen or so people in the company. It is rarely done for planners, because in most large businesses planners have no strong interest in the longer-term future. They are interested in the one-to-five-year time horizon, how effective the management of the previous plan was, and what might be done if the plan needs correction or modification. Corporate planning and thinking about the future is generally short range.

Sometimes the planning office is given the *ad hoc* responsibility by the executive suite to establish a task force to do a study of the future. We frequently have had those *ad hoc* groups as our client. These task forces are often interesting and useful. They generally consist of carefully selected people who are a mix of young and old on the staff and all characterized by being bright, engaged, and strongly pro company. They seem to have everything going for them to make the project a success. In case after case, we find the difficulty, as the outsider working with them, is that they know little about planning for the future and have little ability to speculate about areas that are not directly attached to their normal responsibilities.

It is worth noting that not all business associations are connected with the business side of business. One of our recurrent clients is a group made up of the heads of human resources in eighteen Fortune 100 and Fortune 200 companies. We have served this client several times, but again, note that the interest in the future, while widespread and intensive, was still not completely open-ended over the whole of the business enterprise. For our corporate clients who are looking for in-depth futures in specific areas, often broad areas, we have included studies in human resources, science, R&D, international affairs, creativity, the economy, materials, marketing, and the future in general. A similar list of topics applies to one- and two-day workshops or seminars on the future, for business and other institutional clients.

9. Tools and techniques

Seventeen tools and techniques for studying the future were noted on Fig. 1. The journal *Foresight*, on whose advisory board Michel Godet and I serve, is now in its eleventh year. An issue in 2008 reported on a study of foresight "style" in six world regions. Without going into the details of that in different regions, the study covered foresight methods used in the six regions from northwest Europe to southern and eastern Europe, South America, North America, and Asia. The most commonly used methods and techniques are:

- Literature review

- Expert panels
- Scenarios
- Trend extrapolation
- Future workshops
- Interviews
- Brainstorming
- Questionnaires and surveys
- Strengths, weaknesses, opportunities, and threats (SWOT) analysis
- Delphi
- Environmental scanning
- Essays
- Key technologies
- Technology road mapping
- Modeling and simulation
- Other methods

All of these techniques are used in American futures work, plus others not mentioned, such as the Morphological Box.

This information results from 860 cases; 548 of which are in northwestern and southern Europe. That work on methods was conducted by the European Foresight Monitoring Network (EFMN), under the sponsorship of the European Commission GD research.

One of the most favored techniques is the Delphi, which has a magical appeal to bureaucracies and other large organizations because it results in numbers. Numbers seem to carry more credibility and weight in large organization's communications. However, doing Delphi well is difficult because all the questions asked have to be answered in quantitative terms, whether that is on a scale of importance from one to ten or is a specific time interval. As a result, learning to write a Delphi questionnaire is a significant learning challenge. Also, one needs to do a test run with a small group to see what the difficulties may be.

In looking over the decade of reports and articles in *Foresight*, it becomes clear that the global spread of good useful and affordable techniques is quite comprehensive. There is no grand premier strategy for doing futures work, much less for strategic foresight, as in *la prospective*. The approaches seem to be as eclectic as in the United States and depend on the experience and taste of the individual study group. The hope of there being a single method for foresight or single strategy for foresight seems unrealistic for the projectable future.

It remains unclear as to what the advantage would be of a universal technique. We need to look at potential new methods; for example, bringing larger numbers of people into the thinking processes in a futures study, and we need to improve the cost, content, and reliability of the ways in which futures studies can be done.

For example, a recent advance in the Delphi technique promises to be quite important. Professor Emeritus Bill Halal, at the George Washington University, set up a pool, a hundred or so people that he refers to as the experts. When he wishes to run a Delphi, he asks the members of the group if they wish to participate, presuming that they will be self-identified and selected experts. He has had interesting results. It is a technique that could well involve expansion and could lend itself, if one had suitable safeguards, to work on the Internet. Of course we must keep in mind that the reason to looking to the future, particularly for commercial and governmental organizations, is often central to their activities and, hence, a degree of confidentiality may be extremely important. Whether it would be practical to strike the balance between more participants and a lower cost by going to the Internet remains an open question.

9.1. Plausible reasoning

No mention is ever made of the single most important way in which one comes to an understanding of the future, whether that is working alone, in a team, or drawing on other people. This most important way of reaching understanding of the future is through *plausible reasoning,* that is, putting together what you know to create a path leading to one or several new states or conditions, at a distance in time. To keep exploring the future from becoming an intellectual trash heap, one must make the conceptual linkages plausible by making each step along the way non-contradictory of whatever else one knows. Unfortunately we have been unable to find any book or article that deals with plausible reasoning, but it certainly is not what is often practiced in higher education and public discourse as debate.

10. Summary and conclusions

In summary, the techniques of futures studies are widely established around the world among contemporary futurists. The methods are eclectic, in that for a particular study, one uses the set of techniques that are most appropriate and most effective for a particular topic, team and budget.

The French *prospective* was not noted among the seventeen techniques listed above, although it may have been among “others” used in the 860 cases. As I see it, the reason for it not being noted, even though it has been used in several cases in and outside of Europe, is that *la prospective* is not a method, technique, or a tool; rather it is a meta-method—that is, a method that orchestrates

the use of methods, tools, and techniques in the study of the future. Put differently, it is a method for selecting methods. Godet's books well illustrate the methods and techniques that may be subsumed under the heading of *la prospective*.

The development of a universal tool kit, while always an aspiration, seems to be quite unlikely, because time, money, and experience are primary determinants in the selection of the methods and techniques to be used. Rather, what seems to be the pattern for the next decade or more is improving the eclectic techniques and perhaps, from time to time, coming up with a fresh variation or innovation like that of Professor Halal.

In recognizing strategic foresight as a future state, we also must acknowledge that an indeterminately large number of methods and techniques may be used to reach and define that state. No particular method currently exists to optimize time and labor and tools to define that end state or states.

Fig. 1 plus the text that explains its use amount to a universal meta-method that identifies the kinds of things to which one must attend in any comprehensive futures study, particularly one directed at strategic foresight. Rather than identifying and calling for preferred tools and technique, Fig. 1 identifies the subjects or topics which must be covered, in order to be comprehensive and sound. Consequently this meta-method is open to accepting any tool or technique that will give useful insights within time and budget. It is open to addressing, as a meta-method, any futures topics such as “What is the future of…”, “What are the consequences of…?”. “What are the preferred futures, and for whom?”

Joseph F. Coates led Coates & Jarratt, Inc. through more than two decades of designing and delivering studies on the future of technology, business and government. Joe then retired from the company he founded to become a consulting futurist (Joseph Coates Consulting Futurist, Inc.). Joe has consulted with 45 of the *Fortune 500* companies, scores of professional, trade and public interest groups, and with all levels of government. His career also includes work as an analyst for a nonprofit think tank and positions with the National Science Foundation and the U.S. Congressional Office of Technology Assessment. He holds 19 patents from his first career as an industrial chemist. He is the author of more than 300 articles, chapters, papers, and publications. Joseph Coates frequently speaks on a variety of topics such as America's next thirty years and the future of the family.