

Questioning Scenarios

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Not Worth the Effort

With a lead article from Graham Molitor, this symposium on scenario planning brings together scenario planning practitioners and theorists to debate the question: Is scenario planning worth the effort?

Molitor, with his fifty years of experience as a futurist argues that scenario planning is not worth the effort. He writes: "I can't recall any personal experience with scenario exercises that was worth the time and effort spent. Among major companies, business groups, and government offices I never saw scenarios make any major contribution or breakthrough ...despite what some colleagues brag about." ¹

Worse, for Molitor, scenarios reinforce the present, thus defeating the purpose of most futuristic projects, which is to create a distance from the present so the present and thereby future (and even the interpretation of the past) can be transformed. He writes: "At best, most scenarios merely reinforce and regird what participants already basically knew."

Action Learning and Strategic Conversations

Fabrice Roubelat, Associate Professor/Futurist at the University of Poitiers in France is equally suspicious of scenarios. Given the exponential growth of scenario planning since the events of 9/11 (not to mention Gore's call to arms against climate change, SARS and the Asian Financial crisis, and now the USA debt crisis) Roubelat wonders if it is worth promoting the practice of scenario planning. However, he concludes that scenarios are worth doing provided that action learning/planning is built into the process and not as something that is done later, after the scenario planning. Moreover, he argues that scenario planning must not only use methodologies that bring in the worldviews of different stakeholders but examine how these worldviews move through time. And what moves them through time is the agency of individual actors. Scenarios thus can be overly structural forgetting the capacity of individuals to recreate the future, to recover agency.

Robert Burke, former Ceo of Century Mines and Car Lovers – that is a user of scenario planning – and now Director of Programs at Mt Eliza Executive Education, Melbourne Business School, Australia, agrees with Molitor's assessment of the limitations of scenarios. For him, the root issue is the claim of strategy. Strategic planning, for Burke, is of little value. The only real strategy is what organizations actually do. Futures studies and scenarios are of utility insofar as they create new conversations that mimic the new future that is desired. Concludes Burke, "scenarios are not about fore-

casting or even alternatives but about having deeper more effective conversations about world's we wish to create."

Jui-Kuei Chen, Chair of the Graduate Institute of Futures Studies, Tamkang University and business consultant, writes that scenario planning, when done well, can lead to organizational learning. Scenarios work best in a peer-to-peer setting where orthodoxies can be challenged, and agency affirmed over structure. However, the challenges, as Chen writes, in disobeying reality are multiple: first, scenarios need time in which to develop; second, they need skillful encouragement by futurists; third, the information gained from the scenarios must fit the issues that the organization is facing, and lastly, the results gained from scenario planning may not be immediately relevant to the organization. These challenges can be met by using other futures methods when appropriate and remembering the real goal of creating a learning organization.

Theorizing Scenarios

Angela Wilkinson, Director of Scenario Planning and Futures Research at the University of Oxford, argues that we need to better theorize the practice of scenarios. As with other writers, she argues that it is not forecasting (the most probable) but foresight (a set of the plausible) that is of import. Instead of being stuck as Homo-Deductivist (formal and quantitative) or as Homo-Constructivist (intuitive, story telling, focused on many), Wilkinson suggests Homo-Abductivist (imagination followed by causal analysis). Moving scenarios into new theoretical frameworks, Wilkinson sees as crucial if we wish to play an enhanced role in public policy and strategy development. The two frameworks she recommends are causal textures theory and sense making. Both conceptual frameworks invite depth; wherein ontological and epistemological considerations regarding time, choice and action are clarified upfront.

Peter Hayward and Rowena Morrow futurists/academics at Swinburne University find theoretical advancement coming from Wilber's integral theory. An integral approach brings in four added dimensions: a perception of the selves that perceive the situation; the actions of the selves that bring forth a desired future; the shared sense of reality that is created together; and a shared sense of the desired world that action creates together. Thus individual and collective at inner and outer levels are used to enhance the reflexivity (selves and groups reflect on their constructions of reality) of the scenario process. As with Wilkinson's framework, depth is achieved. Hayward and Morrow write that their approach works best when organizations wish to explore the interplay between the external environment and the actors who live in that environment. This interplay can lead to breakthroughs.

Andrew Curry, Futurist at The Futures Company, England, theorizes that "Futures work can be thought of as a devise for 'disturbing the present.'" Futures studies helps us see the present differently, with new identities. Scenario work, writes Curry, "is a process which is about learning and negotiation, about constructing social meaning." Scenarios are thus poor forecasting tools, but they are much better at generating foresight. Concludes Curry, "it should be our challenge, as practitioners, to turn that foresight into insight."

Gary Saliba, Futurist and Adjunct Professor at Charles Stuart University, Australia, as with other writers finds the beauty in the scenario process that of meaning making. He finds utility in scenarios in that they help us understand the deeper mental models of all the actors involved (including the consulting futurist). He writes: " a shift in our mental models can affect our sense of identity and our personal metaphor (unconscious scripts that shape the current way we live our lives)."

Most importantly, though, the scenario process makes the future real. Instead of the theoretical distance gained from scenarios, Saliba offers us futures intimacy. In one project with a resource company, one executive commented: "these stories were so compelling I was consumed by them and could feel the pressures of what could be in the future."

Exploring mental models, worldviews, instead of increased complexity and confusion, can result in clarity. Saliba quotes one CEO of a large educational institute: "After we had worked through the uncertainties I had a fundamental shift inside me that took away the fear of the complexity and the uncertainty ...I have a deep feeling that inspires me that we are on the right track and that we will be successful despite the change."

Scenarios can thus move from the challenge of the weight of structure to individual agency. And it is this, for Saliba, that makes the difference.

Decisionmaking and Meeting the Needs of Clients

Anthony Judge, formerly responsible for the online Encyclopedia of World Problems and Human Potential, as always does not just write about depth but through the use of metaphors takes us to deeper unknown places. He opens up the future by challenging all frameworks. He does this initially by challenging the "continued assumption that somehow a degree of consensus can be achieved amongst 'rational' people as to the best way forward." Scenario responses as well are rarely rational ... rather Judge remarks that the normal response is one of avoidance, sometimes overt and sometimes covert. Covert is especially challenging as a full range of definitional games (narrowing the time frame, for example) are used. This is more challenging when the scenarios are extra-systemic, across knowledge boundaries as institutions do not have the policy frameworks to implement.

For Futurist Marcus Barber, the key issue is to match futures methods with the needs of the client. Barber writes that he guides less than 10% of potential clients to the scenario process. As important, if one decides to use scenarios is which scenario method to use. For example, the quick Coffee cup method where the future of x is considered or the "Normative" Big vision which explores what the world will look like given the achievement of the vision. Time, cost, depth of inquiry, contingency planning, team building and creativity and strategic value are all factors in deciding which is the appropriate scenario model to use. Concludes Barber, "Whether the need is new insights, removing organizational blinkers, better customer relationships, team building or intellectual naval gazing, the need and process must be matched accordingly."

Jordi Serra, Futurist at Periscopi, Barcelona forcefully responds to Molitor by asserting that scenarios are worth the effort! The challenges facing futures studies are enormous: "our own brain, ill suited to deal with change and novelty; our social and cultural systems, for which change is tantamount to calamity, and; last but not least, our political systems (particularly democratic ones) that are structurally entangled with short term horizons." And scenarios can help in dealing with these challenges.

Elina Hiltunen, Futurist and Strategic Foresighting Manager at the Nokia Group, Finland, as well finds scenarios valuable tools. By helping us prepare for possible eventualities, they make the organization more flexible and more innovative. Two dimensions are critical for Hiltunen: they create a new process in the organization (new tools, different ways of thinking) and they help create new products and services. For this to happen, Hiltunen argues they must be taken seriously by the organization.

Award winning fiction writer Rosaleen Love, concludes the responses to Molitor by asking a different question: "who will be using scenario planning ten to twenty years from now? Future decision-makers will have one thing in common that will set them apart from today's groups. They will have grown up playing with scenarios in the various shared worlds of computer, video and online games" (and their future incarnations). Scenario planning thus will be not unusual but a social technology that will be part of the "collective intelligence" of the future.

Molitor rounds up the symposium by stating that if it works, use it. However, as a "pick and shovel" researcher, for Molitor the value is in mining and finding patterns of change that reveal and reinforce the trend, direction and timing of impending developments.

Concluding Comments

To these marvelous responses, I would reinforce/add the following.

First, scenarios can be usefully theorized as distancing us from the present. This conceptual distance allows us see the present or future anew ...the distance can be temporal (going back and forth in time) or can be epistemological (seeing the issue from different ways of knowing).

Second, scenarios are not just about moving from forecasting to foresight but they are useful in creating the preferred future, in the victory of agency over structure. The preferred future, can be judged against, a worst case possibility or a business as usual. It can be compelling, helping create different worlds, different possibilities. Scenarios thus open up the future and then they can help in creating the desired future.

Third, scenarios are different from Alternative Futures, which is, as Dator suggests (2008), a far broader concept, being based on historical archetypes, deep patterns that reoccur through time.

Fourth, scenarios should not be seen in isolation to futures theory and practice. They are one method, one approach amongst many. Whatever model of futures studies one uses it is clear, reliance on one method will almost always leads to problems given that we live in a differentiated complex and transforming world. For example, in my own work, I use scenarios in phase four of the futures studies process. Initially, I map the past, present and future through the futures triangle, then disturb this map through

emerging issues analysis. Following these two approaches, I explore the timing of the future – the macrohistorical patterns. This is followed by an exploration of depth – the alternative ways of knowing via causal layered analysis. Now that the past, present and future have been explored through multiple methods, I introduce scenarios. I do so not obedient to any particular model of scenario planning but rather give participants choices (single variable, double variable, archetypes, integrated, and so forth). The last part of the process is creating a desired future, backcasting from this future to the present, and concluding with action learning the next steps. Scenarios thus are a step in the process, not the entire process.

Finally, scenarios have an inner process as well. That is, as the authors have explored, scenarios need to not only account for the changing meanings of individuals in changing external worlds but as well the inner landscape of the inner maps held by selves. Scenarios can map these inner stories/metaphors. I use this approach by moving from the preferred future – the desired organizational future – to the disowned future. The disowned scenario is what is seen as outside the individual's or organization's identity horizon ...what it is pushing up against, saying it is against. The integrated future becomes the integration of the preferred and the disowned. Doing this requires not just an understanding of external events and trends, images of the future and critical uncertainties, but an inner map of the organization's psyche. As the authors in this symposium suggest, it is a broadened and deepened understanding of the construction of reality that is crucial for conversations that lead to foresight and insight (at inner and outer levels) and then action at inner and outer levels.

I wish to thank colleagues, particularly Graham Molitor, for taking time to write for this symposium. As scenarios become more popular, as digital natives age, bringing in the broader gaze of futures studies will become increasingly important to ensure that scenarios are used to their fullest capacity.

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Notes

1. All quotations from this issue of JFS.

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Scenarios: Worth the Effort?

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As a practitioner and teacher of forecasting engaged for some 50 years in the futures field, I can't recall any personal experience with scenario exercises that was worth the time and effort spent. Among major companies, business groups, and government offices I never saw scenarios make any major contribution or breakthrough. Scenarios presented to practical minded senior managers tended to be regarded as "paper bluster," typically not worthy of the time to consider. I can't recall any great success – despite what some colleagues may brag about. There are, of course, exceptions.

Scenario planning can be an interesting and engaging but sometimes idle exercise. Rarely do such efforts discover mind-blowing or mind-altering results. At best, most scenarios merely reinforce what participants already basically knew. Such efforts may amount to little more than a time-consuming "parlor game" in my estimation.

One saving value is that the process gets some participants thinking in uninhibited and creative ways. Scenarios may be invoked to jog thinking, well aware that results may not be particularly useful. In short, it is hard to find much practical value in hashing and haranguing one's way through scenario development exercises. Of course, there always is some value in surveying and studying matters. The vital questions include whether scenario dynamics added anything of significant value to forecasting efforts and whether the output was worth the effort expended.

Among the growing panoply of techniques to define future developments and trends, some technique will "click" with one person, yet fail to connect with others. No single way appears to be the best for everybody. I remain skeptical of gimmicks that probe the future. Obviously, this practitioner is not the most unbiased person to seriously assess the value and use of scenarios. Despite my obvious biases, skepticism, and limited personal successes with scenarios I encourage – not discourage – any technique that may advance forecasting capabilities. The following remarks may seem obstructionist, be viewed as nit-picking, or otherwise rankle readers. I hope not. My deep and abiding interest is in advancing careful appraisal of a potentially useful tool in the forecasting arsenal. In fact, at the close of these comments, some thoughts are posed concerning how to enhance scenario exercises – should such deliberations be pursued.

Fundamental "Down to Earth" Forecasting

After a lifelong career of serious research, I remain a "pick and shovel" researcher. I've always focused on digging deeply and broadly to gather a panorama of past, present and prospective facts and then couple that with what acknowledged experts have to say. The "handwriting" always is on

the walls of history. We all build upon significant advances and stand on the shoulders of the Greats. The entire history of civilization and humanity is gripped by change as a certainty. The big problem is how to deal with it, how to accommodate it, and how best to capitalize on its potentials for doing things better, going one step further.

Comprehensive chronologies and trend-lines of history – to which I am currently dedicated – clearly reveal past and present perspectives. Carefully tabulated and paced they also delineate impending changes. Precursive events, pressures and trends always describe a long – and usually incredibly well detailed trail – from which on-going and oncoming change can be surmised. If one can't spot oncoming developments from such research, there's a simple explanation: the essential "homework" and research simply hasn't been done.

From this standpoint, the status quo isn't so much altered by impressions and techniques as it is by the steady and relentless incremental advance of scientific and social inventions. A book I have been plugging away at for decades – "The Chronology of Civilization" – vividly reveals that all hard and social sciences have very early basic roots that progress (and rarely regress) in a step-by-step continuity. Abrupt breaks with the past on careful analysis invariably amount to incremental extensions of past events (albeit at a more rapid than usual rate).

Almost without exception, every study I ever conducted (whether involving hard or soft sciences) easily traces back in time and cross-culturally at least 100 years or longer. The resulting timeline reveals the ongoing direction and pace of oncoming developments. Decades of such research reveals that roots trace back much further – in some cases millions, even billions of years, depending on the topic.

Is Scenario Planning Something New?

There is a tendency to ascribe a uniqueness and coin new terms that repackage and reintroduce timeless techniques. In practice, group deliberations and conference approaches – the crux of scenario generation – always have been a vital element in planning. Actually, bringing together a variety of outlooks and melding them into the most probable construct – which, when all is said and done, is what scenarios are all about – dates far back into ancient history.

Reduced to its most basic principle, strategic conversation of scenarios comes down to rational discussion targeting specific oncoming change(s). Hallmarks entail purposefully directed discussion embracing a rational give and take in the exchanging and challenging of ideas to help describe and define potential changes and their effects. Call it what you might – strategic conversation, scenario building, discussion, dialogue, review, study, examination – all these terms of art, despite different shades of meaning and nuance, are "birds of a feather." Each of these terms expresses ways of targeting and developing useful intellectual conclusions. Scenarios, from this perspective, amount to little more than an approach with obvious overtones and underpinnings that accompany informed rational deliberation of possibilities associated with most any topic.

Words of art describing almost anything often are quite numerous. The crux of the object or matter remains the same, but with variations in the jargon and shades of

measuring. It seems self-evident that discussions – including scenarios – that challenge, elaborate, refine, review, extend, inject, update, and so on, all fundamentally amount to the same thing. Common sense concludes that serious and informed discussion adds to understanding. Reaching back in time, I can't help imagining that the reported 10,000 court "astrologers" that Kublai Khan maintained to sort out and guide his empire's fate didn't include something approximating scenario building or strategic conversation, as some currently term the process.

Zealous pursuit of pet concepts requires care in avoiding sweeping assumptions and overstatements. When someone is on to something – whatever it may be – there is a tendency to feel that new ground is being broken, that something new is being discovered that nobody ever thought of. Tracing back through time reveals phenomena dating back hundreds, thousands of years and even much longer time spans, that involve – at least in basic principle and concept – very much the same fundamentals as scenarios. Luminaries simply learn to go one step further, do the job just a little better or somewhat differently. In the spirit of this mindset, I laud researcher enthusiasm for "breaking new ground," discovering something nobody has seen or heard of before. Sometimes, however, it turns out that the researcher is merely re-discovering or repackaging the "same old, same old."

Compiling a "Universe" of "Story-building" Approaches

Techniques that help develop and shape strategic conversations/scenarios are numerous. Story telling as a guide to the future in overall perspective, doubtless, could be traced back to the very beginnings of civilization. There is very little that is truly new – it's more likely "new wine in the same old bottle." Exercises and devices, techniques and methods that seek to draw out serious consideration of the future play a vital role in easing the way into tomorrow's possibilities. Following are a number of words that suggest some diverse aspects of "creativity" – innovating, inventing, assessing, deliberating, pondering, generating, concocting, speculating, dreaming up, spawning, envisioning, considering, proposing, and so on.

To compile a complete compilation, encompassing all the many and myriad forecasting methods that might be construed, in the broadest sense, as "story telling" (or deliberation), would provide a most useful forecaster's "toolbox." Creation of a comprehensive listing of historic antecedents to full-fledged scenario planning, as we now know it, would put many and diverse permutations and enhancements of this important technique into a useful overall context.

Disciplines ranging from psychology to business management have studied decision making in all its many and myriad details. Methodologies such as operations research and systems analysis, for example, fit within this purview. Noted author, Clayton M. Christensen, describes thinking embracing strategic management and innovation concepts. Some more precise attribution of creative thinking – including myths, legends, stories and tales of all kinds – might also be likened to scenarios as a generic class of speculative story telling. Spelling out how science fiction themes fit into stimulating thinking about distant future(s) – theoretical and theatrical – shaping the future provides further speculative dimensions to scenario building. Mining that

treasure trove and grouping the widest possible agglomeration of techniques into context embracing the full gamut of techniques would seem to be a worthy undertaking.

Just to cite a technique widely hailed just 50 years ago, serious creative exploratory thinking – termed "brainstorming" – was championed by Batten, Barton, Durston & Osborne (a prominent U.S. public relations firm). This "blunderbuss" free-association approach designed to spontaneously stir creative thinking allowed anything and everything related to the topic to be tossed onto the table. Critiquing or deliberating merits, probabilities, and the like was postponed to close of considerations when all ideas were exhausted or a time limit was reached. Akin to scenario generating techniques, this approach requires narrowly focusing on a specific topic; accumulating any and all ideas as presented; denying rebuttal or critique – at that point; and restraining explorations of implications raised by any submitted thoughts to the concluding evaluation(s).

Serious consideration of weighty matters entails give and take, presentation of various viewpoints and biases, and appropriate consideration of expectations, elaborations and refinements associated with various posed alternatives. Another important champion of exploring multiple possibilities and approaches is Edward de Bono. He characterized his methods as "lateral thinking" – what now is termed "thinking outside the box" The point here is that "many rivers all lead to the same seas."

Scenarios – and deliberative techniques of all kinds – open up competing perspectives on change. The collective wisdom and viewpoints derived from drawing together hordes of gifted experts to cast light on what lays ahead and how to contend with it is a time-proven approach. Institutions of all kinds depend on such dialogue. The missions of advisory boards, commissions and the like all can be grouped into the same genre.

In short, the essential elements of strategic conversation have always been an indispensable and integral part of projection and surmises leading to informed decision making. Chronologies and summations of myriad techniques and practices akin to scenario planning would provide practitioners with a wide range of forecasting techniques from which to choose.

As long as we're discussing and acknowledging how scenarios fit in an overarching array of similar methods, it's worth mentioning in passing, who is credited with "discovering" (or popularizing) scenarios as we have come to term the process.

A doctoral thesis written by Dennis List, an Australian futurist, warrants attention (List, 2005), warrants attention. List's nearly 500-page thesis provides a treasure trove of background and thinking about scenarios in all their varied forms and permutations. As Santayana observed, "There is very little that is new under the sun." One just needs to know where to look.

List, incidentally, aptly ascribes contemporary scenario development to legendary futurist, Herman Kahn: "*Herman Kahn is credited by Ringland (1998) and Rubin (2001) with being the inventor of scenario planning, the first of the multiplistic methods to be developed – though in principle is much older... The earliest reference I could find to multiple scenarios was by Kahn (1961)... By the end of the 20th century, scenario work had become the most widely used method for multiplistic foresight – to judge from the number of references in the OECD Future Trends data base (OECD,*

2001)"; A fitting tribute to one of the greatest futurists in our times.

Kahn's scenario techniques were developed in response to U.S. Air Force efforts to anticipate military preparedness options. Kahn founded the Hudson Institute in 1961 where he applied those – and other innovative forecasting techniques – to projects for private and public sector clients. From the outset he attributed development of scenario techniques to methodologies derived from systems analysis and operations research.

Secondary Benefits Resulting from Scenario Exercises

Many scenario planning projects wind up not being used. That, however, may not have been the point of such undertakings. Working through such exercises gird understanding and makes participants more fully aware of what needs to be done to survive and thrive. Cautionary flags as well as beacons of new opportunities help appraise carefully described arrays of alternatives and evaluate differing driving forces that shape eventual outcomes.

The planning value of scenarios may not be pursued so much for precise depiction of future developments, but rather to delineate the suggested outcomes they illuminate. Alternative scenarios developed can be likened to roadmaps for assisting the selection of better paths into the future. Anticipatory clues and signals, deep insights and varying probabilities provide a more solid (albeit conjectural) basis for responding in advantageous manner to oncoming change.

Secondary benefits of scenario deliberations inherently entail learning. Strategic discussions of deliberation, after all is said and done, provide a learning experience for participants. All things considered, strategic conversations can be as much a learning process as a problem solving device. Specific quantitative and qualitative projections of planners, decision makers, marketers, and the like reinforce the foundation for speeding up or slowing down the steady onslaught of change.

Entertainment is another aspect of scenario "intellectual" games worth mentioning. Flippant as it may sound, there is entertainment value in pursuing scenario development. Serious though the mission of fleshing out scenarios may be, the spirited fun of delving into the great unknown poses intellectual challenges that task the mind. The open and free-swinging tug and pull of ideas conjured up by the participants adds to the sheer exhilaration of engaging and striving to solve difficult problems.

Using an "almost anything goes" approach provides free-ranging discussion that is part and parcel of dynamic "strategic conversations." The "give and take" of free-wheeling "what if?" discussion goads participant thinking. The thrust and parry of ideas can help ablate the periphery and hone the core. That's what exploratory deliberation – after all and no matter how pursued – entails.

Change can be disconcerting and dislocating. As a consequence, unknowns – like the future – often tend to be put off and ignored. Inertia and institutional perpetuation grip the immediate time and place. Everyday thinking tends to be moderated by accepting the familiar. Forcing review and reconsideration of untouchables using techniques such as scenarios helps illuminate potentials for change.

The objective of strategic conversational scenario building is not always to find

consensus. Just the contrary. The objective very well might be for the explicit purpose of providing differing conclusions, ones that are odds with one another concerning the self-same matter being examined. The thrust of differing viewpoints, challenges and tempers the credibility and probability of variant conclusions.

Scenario Output Basically Limited to Input Quality

Competency of participants engaging in strategic conversation varies. Unless individuals involved are "up to speed" on topics under discussion, the results are likely to be marginal. Assembling the right cast of participants is a crucial matter. One person or a small group of persons may have sufficient understanding to range through the gamut of implications inherent in radical departures from the status quo. But not often. The obvious approach is to enlist participation with the most knowledgeable persons familiar with the discussion topic(s).

Practitioners steeped in and familiar with all the facets of scenarios may assume that everybody is "on the same page." Some participants may not be so positioned. To overcome such limitations, preparatory documents and discussions explaining the ins and outs to the less informed helps bring them "up to speed."

When successes involving scenarios are achieved, it often wasn't so much the technique and methodology employed, but rather the expertise and competence of the participants that made a difference. The adage of GIGO (garbage in – garbage out) applies.

An acknowledged authority on scenarios, Peter Schwartz (1996), is quick to point out a fundamental requirement for truly meaningful and useful scenario planning efforts: "...planning efforts on balance, he has admitted that success in planning may have more to do with senior management's exceptional capabilities as managers than with any 'magic' from a new technique." Acknowledging the importance of savvy participants and decision makers in scenario planning deserves underscoring.

Expert input will greatly enhance outcomes. Expert insights and spirited comments invariably tend to "rev up" and get the creative energies of other less informed participants flowing. "Elitism," competency or knowledgeability – at least among a few key participants – helps assure successful outcomes. Dialogue among experts leads to different perspectives and better output than dialogue among fools. Not everyone is up to the task of being a valuable contributor to strategic conversations.

Selecting scenario discussants/developers may require engaging various levels of expertise involving a given matter. Participants must be "on the same page" or have an equal footing regarding knowledgeability. R&D scientists are on one wave length. The engineers responsible for building a new production plant are on another. The marketing professionals are on yet another page. The sales force and consumer experts bring other echelons of experience to the table. Participation need not be limited only to those responsible for outcomes, although most results oriented efforts will be structured that way.

There is no one way of addressing matters when the "future of" is under consideration. The value of conflicting views is most useful for zoning in on the realm of the possible and sorting out the most probable outcomes. Results and conclusions gather

texture by varied perspectives that contribute to the overall collaborative effort. Different slants and perspectives may be essential to hammering out the best possible conclusions.

Coming in "cold" to strategic conversation shortchanges potential results. Impromptu scenario building exercises typically fall short of hopes and expectations. Scenarios are not "spur of the moment" efforts. Useful scenario exercises tend to be quite time-consuming. Rarely have they been effectively used to set specific goals coupled with action plans involving how to implement "desired" outcomes.

Enticing as it may seem to invite participants to engage in a "free for all" discussion, serious and careful preparation of participants is imperative; some previous preparation, including written notes, commentaries and lines of discussion to be pursued, help to fortify and gird serious contemplative efforts. If the preparation is thorough and well grounded results are more likely to be useful.

Setting Timeframes and Limitations

Timeframes of consideration(s) encompassing the subject(s) under discussion involve other important considerations. Defining the horizon involves setting time limits pertinent to the task at hand. How long a timeframe is required to focus on "strategic" aspects of decision making? Rarely would it be the next quarter or year. Time spans vary accordingly with the nature of targeted topic(s). Most institutions, whether business or government, public or private sectors, tend to be quite conservative (short term) in their "long-range" planning. For many organizations two years is considered a long range plan. Plans looking out 5-10 years sometimes are developed. Long range efforts may be fated to gather dust. Immediate results are what tend to loom large.

Certain enterprises or undertakings, however, do require long range perspectives. Forest management (and allied products) typically requires planning ahead 100 years or more. Nuclear power plant planning, approval, construction and start up (in the U.S.) entail 25 years or more. Pharmaceutical development from R&D to market launch requires a 10 year minimum, often considerably more. Mining and prospecting perspectives entail resource depletion estimates sometimes spanning hundreds to thousands of years. Astronomers and cosmologists project many developments billions of years into the future. Geologists also ponder timeframes spanning millions and billions of years. The list could go on. The point is that "long range" planning does have timeframes. For practical purposes most foresight efforts rarely entail seriously thinking ahead as much as 10 years. Stretching time horizons, the Foundation For the Future audaciously focuses on the next 1000 years. Vast scale undertakings, especially those involving emerging state of art technological and scientific efforts, fit nicely into such long-term speculation(s).

Keeping scenarios within bounds: the number may be limited to best vs. worst case, high-medium and low estimates, capping alternatives to a manageable few (3-5, for example), and so on. Limiting the scope helps to simplify the task. Limiting consideration also helps to keep deliberations within manageable bounds. It also reduces considering other broad-ranging textures of potential developments. In some situa-

tions, maximizing output and texture of intellectual jousts is a vital objective. Setting goals requires many carefully balanced considerations.

"Ironclad givens" may be set to keep the discussion within manageable bounds. Scenario planners often insist upon the necessity of "ironclad givens." Important as that limitation may be, it does smack of overly confident determinism. Years ago, the popular nomenclature for "setting the stage" with a fixed set of constructs describing existing/forthcoming parameters of any system was termed a "paradigm." Such frameworks set a mindset for contemplating and fundamental foundation for exploring a situation/context. In short, a defined model, a lens for restricting or confining viewing a given environment or situation.

Limiting truly relevant benchmark developments may actually assist rather than constrict and confound deliberations. Capping the number of alternative scenarios is one solution, albeit a poor one. The major difficulty of speculative tilting on most any topic is the sheer enormity of possible inputs. Virtually every thing can impose itself and impact a given set of conditions and circumstances. The trick is paring the number down to the essential or domineering forces that figure pivotally into the calculus of change.

Some intellectual jousting is good. Too much of it can impair the mission. Intellectual exercises sometimes get carried away. When discussions are "hot and heavy" thoughts often cascade in ad hoc, random and wandering ways. Thoughts may skitter and scatter all over a boundless setting. Without such a limitation, extemporaneous diatribes detracting from fruitful consideration may interfere with constructive deliberations. Outputs also may become excessively conjectural, hypothetical, tangential, non germane and unrealistic. Moderating discussion by utilizing leaders/facilitators may be used to keep commentary and conclusions within manageable bounds.

Scenarios involve a tendency to overstatement and a failure to constrain words and hone them to exacting meanings. As with any widely ranging overviews, simple qualification, tempering, constraining and limiting words and phrases may be required to polish and enhance the finished effort.

Inhibiting effects of overbearing superiors, disapproving bosses or other overshadowing figures may stifle and stymie free association deliberations. Discouraging or suppressing open discussion requires careful management lest marks of disapproval deter open and free discussion. The "no holds barred" kind of exchange helps encourage the free flow of points of view in all their myriad nuances.

Limiting or cutting back the size of the final report to make results manageable may detract from the overall value of the process. At another level – reporting results – minimizing results into a condensed version renders it readable/useful. "Readable size," however, can adversely restrict the texture of answers and eliminate valuable details.

Summarizing findings and comments can be decisive in determining the utility and value of inputs. Persons selected to transcribe or record the summary and synthesis of what has been generated by the participants also may consciously or unconsciously intrude personal biases into the team results. Neutrality (or acknowledged advocacy) provides differing approaches. Providing opportunities for individual participant review and edit of final results helps assure balanced consideration.

Facilitating Deliberations

If participants are bound and determined to take the time and effort to generate useful scenario conclusions and reports, guiding discussion may help enhance outputs.

Groups engaged in scenario development vary enormously. Sometimes it takes a great amount of prodding and pulling to get the group going. In other situations there may be a domineering few that will hog the forum as timid participants remain passive. Facilitators leading and moderating "free flowing" inputs help overcome these situations. Gifted facilitators draw out recalcitrants and subdue overwrought enthusiasm (without stifling it). Facilitators play a deft role crucial to guiding discussions and keeping comments within reasonable bounds. As in "brainstorming" (technique in vogue during the 1950s), the touch must be deft so as not to intimidate and squelch useful wild cards. All of this is easier saying than doing.

Techniques for recording the torrent of ideas (at least the pith of them) as they come streaming along are worth emphasizing. The process of recording concepts as they emerge can be daunting. Capturing participant's contributions before they slip away and memory fails requires an adept reporting system.

Spirited scenario deliberation may occur so rapidly that it may become difficult to capture the often overwhelming pace of ideas likely to pour forth. Skilled chart makers may be enlisted to post results on large poster-paper plastered on walls or easels positioned around the discussion area. Organizing these lists into relevant categories serves to isolate and aggregate items that help prompt additional participant thoughts. As discussion progresses, blocs of charts can be rearranged to link them with related concepts to help portray cross impacts and integration of results.

Graphic rendering of "trains of thought" as they are presented may help enhance the quality of deliberative efforts. A particularly useful approach enlists artistic talents of accomplished graphic artists. Instead of merely jotting down long "laundry lists" of matters to be considered, the concepts, as adduced, are graphically portrayed in fanciful artistic sketches. Created on the spot in response to commentaries, panoramic pictures are stylistically created that depict interactions, relative importance of principles, and so on. Symbolizing the turbulent pathways to an end goal, for example, might utilize a river with many branches, rapids, waterfalls, quiet pools, meandering twists and turns. Each graphic feature in such an exercise symbolizes the flow or blockage/side-tracking of concepts as they move along to the sea (the end goal). Visual features of these "works in progress" are tagged with a few words that help to "visualize" how component concepts fit into the overarching whole. This approach also reinforces the evolutionary nature of fashioning projected futures.

Scenario: Origin and Successes

There are a few notable exceptions to purportedly successful scenario based forecasts. One or a few successes do not make a compelling case for the value of engaging in scenario deliberations. Perhaps, there are numerous success stories, and maybe many never get openly revealed or discussed.

Pierre Wack's scenarios reportedly anticipating impending oil shock during the early-1970s provided Royal Dutch/Shell a decisive adaptive lead over other competi-

tors. His following commentary is worthy of noting: "Scenario planning is a discipline for rediscovering the original entrepreneurial power of creative foresight context of accelerated change, greater complexity, and genuine uncertainty." The operative inducement for scenarios involves more fully understanding "uncertainty." If nothing else, Wack's terse observations clearly highlight the extraordinary importance of increasing complexity and accelerating change that perturb ability to judge the future with certainty.

Several other practitioners are prominently mentioned in connection with this acclaimed success story. Among them is Peter Schwartz. After working five years at Shell in developing and applying scenario planning, Schwartz went on to popularize and to advance the art of scenario strategic planning to a new high. Schwartz's *Art of the Long View* reviews the following key elements to successful scenario efforts: Uncovering the decision; Information-hunting and information – gathering; Identifying the driving forces of a scenario; Uncovering the predetermined elements; Identifying critical uncertainties; Composing scenarios; Analysis of implication of the decisions according to scenarios; Selection of leading indicators and signposts (Schwartz, pp.VII, 241-48).

Shell's successes during the 1970s also benefited from Ian I. Mitroff's uncertainty-importance grid. "Weighting" of variable factors, of course, typically is a key feature of speculative contemplation. This tool assists in assessing the validity of generated scenarios. Ladder scales or relative weighting of probabilities, relative quality of input sources also can dramatically influence assessing inputs. Most important, the calibrated results add immensely to the value of conclusions and output. Likelihoods or possibilities, trend patterns – including their verve, momentum and timing – are, of course, critical to output accuracy.

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Scenarios in Action: Comments and New Directions

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When scenarios become so fashionable that their use in corporate strategy becomes almost common place, witness the dramatic expansion of scenario planning since September 11 (Rigby & Bilodeau, 2007), it is for a futurist a particularly good occasion to wonder if it is worth to promote and to practice scenario planning, as to do research in the field.

As a researcher and practitioner who has based on scenario planning a major part of his works and papers for the last two decades, it seems to me that scenarios remain a subject of inquiry on two major issues concerning:

- their real functions, as their dysfunctions, to provide a framework to understand why scenario planning practices can be successful or on the contrary be a cause of disappointment,
- their interactions in action processes, to pay attention on the way scenarios can follow one another, on the oscillations that can occur between two or more scenarios and on the possibility for scenarios to be played simultaneously.

Scenario Planning as a Networking Process: Functions and Dysfunctions

As a networking process helping organizations to explore new views of environment and corporate futures (Roubelat, 2000 & 2006), scenario planning provides the occasion to connect a large range of actors – top and middle managers, academics, public policy makers, NGO members... – in questioning their individual and collective world views – in the German meaning of *Weltanschauung*. In such a process, the ideological function of scenario planning became as important as its analytic one: the major issue is not only to serve as a decision support system but also to challenge the strategic paradigms of organizations, to rethink their internal and external borders, i.e. to assess how they can change and move.

In its analytic function, scenario planning will try to bring some "scientific" evidence from analyzing trends and emphasizing uncertainties in models, so that world views can be challenged or strengthened. This function will mainly use experts, e.g. people having a scientific knowledge or a staff positions in organizations. In its ideological function, scenario planning will also focus on beliefs about the future from actors such as policy and decision makers, either top or middle managers, NGO members... to question organizations' strategies, emerging ways of seeing the world, or even utopias.

In a scenario planning process, the most critical management issue is to produce a mix of these two functions to pay attention on long range processes as on innovating views of the world. During the process many risks will be faced to avoid disappointment, as participants will ask if it was worth to do scenarios that are not so new. Among these risks, leadership and groupthink are the main dysfunctions which are often connected with a lack of heterogeneity of the people who participate in the process, so that either a leader or the group itself will reduce the range of possible futures. Thus, the usefulness of scenario planning will rely on "structural holes" (Burt, 2000) to increase the benefits of scenario planning from connecting non-redundant world viewers and accessing new fields of thought to break the "network closure" that often characterize shared visions in organizations, institutions and industrial communities.

However, case studies show that it is not always easy to avoid such pitfalls even in companies which have practiced for a long time scenario planning, like energy ones, often presented as success stories of scenario practices. One can easily understand that members of a company engaged in a risky business and whose main competences cope with managing risks will resist to question the competences which made the company success. In other cases, dealing for example with deregulation issues, some dystopian scenarios could be considered as self-fulfilling prophecies, so that it can be difficult to face this first step to go beyond dystopia to use Richard Slaughter's phrase (Slaughter, 2004). Such a case is not new as a study of foresight practices during the sixties shows that some actors had anticipated a prospective major change in the oil industry but did not want to accelerate their occurrences by communicating on it. This time gap between the perception of changes and its emergence as a strategic issue for organizations often explain the separation that is made between scenarios and strategies, as well as inertia in strategic decision making (Wright, Van der Heijden, Burt, Bradfield, & Cairns, 2008). Such a separation is connected with two strategic questions. Why would companies challenge successful strategies because of prospective scenarios? And why would not companies build strategies that would be either robust or flexible to be ready for all plausible futures? In both cases, one could wonder if it is worth to do scenarios, as it would be more efficient to be myopic and interactive. Another answer could be to question the time gaps and the related strategic issues by merging scenarios and strategies, as even flexible organizations such as networks know major changes when they are studied in a long range perspective (Marchais-Roubelat & Roubelat, 2009).

Playing Interacting Scenarios: Exploring Time Gaps Through Action Processes

Although scenarios have become a paradigm of futures studies (Mannermaa, 1991) the needs expressed by Mannermaa for an evolutionary paradigm shows how crucial the question of time is. Excepting work based on operations research, time processes do not really frame scenario planning, so that futurists are experiencing the paradox of timeless scenarios as time horizons and scenario dynamics are often forgotten to be replaced by alternative world views.

To go further and to study the issue of the transformation of scenarios in time, we suggest to introduce action processes into scenarios using a phenomenological approach which was implemented and developed from various experiences such as Euromediterranean futures or risk scenarios to 2020 (Marchais-Roubelat & Roubelat, 2008).

To design models of action processes, this phenomenological approach is primarily based on the longitudinal study of the social construction of events in their inner and outer contexts to induce rules to anticipate possible futures. In this approach, scenario design is the result of the combination of four main steps:

- Making sense through an action rule: the rule structuring an action process during a scenario is the key element insofar as it shapes the context of the environment, as well as it makes sense to the actors' strategies. As this rule changes, the context moves from one shape to another, and actors enter a new scenario in which their former behaviors can no more play efficiently the new game.
- Shaping the context of the action: in a scenario, the context of the action process is summed up by sub-systems - e.g. political, economic, social...-, also called environment dimensions, which are selected through their ways of evolution, described by trends of variables implementing the rule and by speeds of implementation of the rule. The evolutions of these dimensions as their interactions make sense for actors which will evolve in these dimensions and use them to assess their strategies.
- Assessing actors' strategies around the action rule within the context : actors' strategies have to be assessed according to the action rule and to their abilities to play a role in the game. That explains that institutions or companies have in some scenarios to be split into departments or offices when they do not have the same position towards the scenario rule. The various actors - transnational institutions such as European ones, nongovernmental organisations, corporations - act within the dimensions of the context. In some scenarios, actors can emerge or disappear.
- Exploring rule shift patterns and gaps: the shifts may create huge complexity and different patterns for possible futures. First, several different rules can simultaneously emerge so that actors may have to play different scenarios either on different areas or on different dimensions of the environment. As the rules don't follow the same rhythms, gaps may occur when an actor plays the old rule when another one plays a challenging new one. Oscillations may also occur when two rules are alternatively played, so that the patterns remain the same, as issues and actors could have moved and changed.

For example, in the risk scenarios study, the working group came to scenario planning from a trend based and dystopian scenario named the *Old maid*, by analogy with the card game. The members of the working group did not seem to like such a scenario that much, even if the *Old Maid* could seem a rather convenient way to manage local risks (e.g. industrial accidents, waste management, social protests). In the *Old maid* scenario, responsibility is never definitively assumed by any actor, but as the old maid card is transmitted from an actor to another one, pictures of the future seem to be different as various risks may occur when the rule – i.e. the scenario - remains the same.

To manage risks in different ways, the group challenged the *Old maid* with new rules as in the *Happy Families* scenario where local authorities specialize in the management of risky businesses, such as managing polluting industries, research and industry in highly contagious diseases, for which they developed core competences. In the *Tarot* scenario, local authorities create participative democracy systems to manage new risky projects with all stakeholders, including NGOs. But when local authorities fail to coordinate stakeholders or to assess the risk, these local management based scenarios may shift to the *Meccano* one, in which the National state manages risks by making decisions in a educative low participatory process. As during a shift actors often do not play the same rules, dysfunctions and misunderstandings increase. Thus, according to the different ways actors assess the risks, scenarios may for example oscillate between the *Old maid* and the *Meccano*. On the one hand, the national state may choose to transmit the Old maid card thanks to long legal procedures. On the other hand, it can keep the old maid card and thus enter the *Meccano* scenario when the urgency and/or the impact of a risk needs a strong dominating actor. Then, it can either sell the risk to private companies to enter a *Monopoly* scenario or share it to play simultaneously all other scenarios.

Further Directions: Futurizing Shifts in Historical Processes

Considered as action processes, scenarios have to be more than alternative futures but have to be explored through shifts connecting them together. In such an approach, scenario planning goes beyond worldviews and explores how these worldviews move in time, as in the fragmented world of globalisation, actors have to play, sometimes simultaneously, sometimes alternatively, sometimes lonely different former and new rules, with players who can be former or new ones, but who move and change.

Through these moving interactions, scenarios can be viewed as the result of an action process, rather than a structure or a situation. Such an action process draws a historical process during which one or more actors make choices, use and sometimes create rule shifts. Considering scenarios in an action based approach attempts to replace them in a longitudinal perspective and thus to provide also an exploratory framework to develop the relationships between history and futures studies (Flechtheim, 1966; Inayatullah, 1998).

Such research will not have the objective to find historical analogies to be applied to futures research which would risk anachronism, but to propose models of analysis to support scenario planning as its critical issues remain to understand how shifts occur and may be thought, as to question the future models of thought of action players. This would help scenarios planners to think new games where rules always change as the number and properties of pieces, to use Berger's metaphor (Berger, 1957). This would also question them on a missing dimension of scenario planning concerning the role of individuals in action processes. As scenarios draw patterns for future history, they are actually based on a structuralist point of view, forgetting that individuals can contribute to shape action processes.

When imagining future organizations, we maybe have to imagine future leaders too. As an evolving field, scenario planning could thus have a look on the lessons

from history to include individual projects and behaviors, to discuss some of its too fashionable scenarios and to avoid anachronism in the way futures are built and read.

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From Strategic Foresight to Conversations about Alternative and Desired Futures Using Scenarios to Transform the Present

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My reactions to Graham Molitor's article 'Scenarios: Worth the effort?' is one of largely being in agreement with his argument. Indeed I argue that not only has scenario planning shown at times to be of little long term value but it appears that strategic planning is also of little value – indeed, it is estimated that only 5-10% of strategic plans are ever implemented, according to Tom Peters (Napier, Sidle, & Sanaghan, 1997, p.13).

Complexity theorist Ralph Stacey (2001) claims this is because most organizational planning of any sort is done as a social defence against anxiety. This view is supported by Ron Heifetz from Harvard University, John F. Kennedy School, who is a highly respected academic teaching leadership (Heifetz & Laurie, 1988). He claims that most learning occurs when there is a productive level of stress, but people are hesitant to go to that space so end up in work avoidance or trying to fit technical solutions to what is in fact an adaptive challenge. The classic error being treating Adaptive Challenges as if they were Technical Problems, Technical problems (even though they may be complex) can be solved with knowledge and procedures already in hand. *Adaptive challenges* require new learning, innovation, and new patterns of behaviour (Heifetz, 2007).

For me, strategy is what you actually do in the here-and-now as it emerges. It cannot be anything else. The rest, including scenario planning and strategic planning, is just espoused. It is not real; the only real strategy is the strategy of actuality. From this viewpoint it is the thinking and feeling (emotions) that are important, the conversations that are created in the here-and-now.

Many people believe that emotions stand in opposition to rational thought, but scientific evidence suggests the opposite. While emotions can overwhelm your rationality, you cannot be rational without being emotional. Emotions predate thoughts in the evolution of the human species and our personal development.... Emotion can disrupt reasoning in certain circumstances, but without it there is no reasoning at all. Traditional cognitive models don't understand that reduction in emotion may constitute an equally important source of irrational behaviour (Damasio, 1994).

Education is, after all, about enquiry, not performance; but we have seen this largely eroded over the past couple of decades as politicians have 'organizationalised' education so that it has become about performance. Does your program, course, lecture etc make for a good business case? This is bad news.

So from my point of view it is the dialogue, the conversations that emerge through futures thinking that is important, the process to the plan, not the plan itself, as any plan to be effective has to be dynamic in response to the now. Indeed, all planning is about the future so futures thinking tools/methodologies are therefore navigational tools and methodologies largely to help counteract the anxiety and stress disequilibrium (change) evokes. This, I believe, they do very well. Finally, conversations cannot be strategic, as participants will feel they are being controlled; conversations need to be authentic about needs and desires for preferred futures, and not about strategic futures which seeks to enhance one's position by beating the rival.

We saw in 1989 the collapse of the Berlin Wall and the fundamentalist 'Centralized Plan' concept for the global economy and we are currently witnessing the collapse of the global fundamentalist 'Decentralized Market Forces' concept for the global economy. What is evident from the current world financial crisis is that it is no longer sensible to talk about capitalism versus socialism as an either/or debate. It is evident that what is needed now is adjustments to our global business/financial system which involves mutual dialogue that executive futures education can provide. We have witnessed how rampant greedy capitalism from some quarters, particularly the risk management of particular financial-services institutions, has failed us and it is only the financial bale-outs that promise any chance of hope. These financial bale-outs are in fact socialism at its best – elected governments looking after society in its hour of need. So, in a positive vein, perhaps now we can start to rewrite the business models that prove to be dysfunctional, to embrace wellbeing through economic humanism and conscientious consumerism (Burke, 2008).

Like chainsaw Al Dunlap who drove Sunbeam into the ground, some former heroes are now villains including the once celebrated Alan Greenspan who did nothing about low interest rates even though he was made aware that today's consequences were probable if he did nothing. Paul Krugman, the 2008 Nobel economics laureate, is one of many economists who have singled out Greenspan for his mishandling of the financial environment. Greenspan himself blamed his own limited 'worldview'. Futures thinking tools, such as Causal Layered Analysis helps us to address the possibility that our worldview is part of any problem as well as being part of any solution to that problem (Inayatullah, 2004 & 2007).

What Can We Do?

I feel there is almost a sense in many business leaders, albeit unconscious, of 'relief' – its almost audible - with the current economic crisis. By that I mean that many of those in leadership positions can escape from their leadership challenges and revert to so-called 'risk-management' – adopting technical management solutions to avoid the adaptive leadership challenges we desperately need our leaders to engage with. We will witness what I term 'Yuletide Redundancies'¹ as a technical solution, a

step far from what is needed in these times – the culling of loyal conscientious employees, instead of engaging with them to co-evolve the future. They now have so many other factors to blame if things go wrong, not least of which is the global economic 'meltdown' that business leaders can hide effectively from the hard and often dangerous work of effective leadership. What is needed is collective creativity, real leadership, co-creating the new. So, as futurists, how do we go about changing this mindset?

Why We Need Futures Education Now More Than Ever?

What might be the challenges or opportunities for organisations that could evoke a significant mindset change in order to sustain a profitable future and not have a repeat of our current world events? Organisations are increasingly turning to executive futures education to address this question.

At Mt Eliza, we have created an executive education program called 'Futures Thinking and Strategy Development'. This program contains methodologies that can be useful as navigation tools for the anxiety this question provokes leading to innovative strategies that may actually work.

In part we do this by:

1. Providing participants with data that is relevant and identifying potential issues or trends that haven't been considered.
2. Challenging the assumptions that they are currently using and where these may break down.
3. Understanding the underlying metaphors that define the culture of their organisations yet aren't necessarily apparent to the organisation.
4. Developing a strategy and a story or a narrative that incorporates a new way of thinking, of helping the business move to where it needs to be in the future.
5. Leadership that connects to the source of inspiration and will allow new knowledge to emerge
6. Facilitating this new knowledge into action.

The business case for Futures Thinking and Strategy Development is that the futures tools and methodologies not only are challenging conventional business assumptions but they are also challenging the myths and metaphors that created these worldviews in the first place. This allows new thinking, whilst not necessarily an easy experience, to emerge which holds tremendous potential for forward thinking organisations to significantly increase their innovation, through dialogue, to co-evolve a desired emerging future as it occurs in the here-and-now as the 'new' strategy.

In conclusion, scenarios are not about forecasting or even alternatives but about having deeper more effective conversations about world's we wish to create. Futures thinking is about being able to connect to preferred future possibilities while serving that possibility in the now. Otto Scharmer (2007) refers to it as 'Presencing', which is about healing between elements that have been separate. These once separate elements now begin to connect to each other – with leaders seeing that we are part of a larger whole – becoming a social technology of freedom. That's worth the effort.

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Notes

1. 'Yuletide Redundancies' refers to redundancies that usually take place close to the Australian Christmas holidays and before the end of the year. I suspect the reason for the redundancies being made at this time is psychological in that organizations believe that they can start afresh in the New Year with their "problems" solved. My concern is that these redundancies often involve honest conscientious employees who through no fault of their own fall victim to the bad business planning and poor strategic planning that management have carried out and I believe this supports the notion that often scenario and strategic planning are done as social defenses against anxiety as argued in this paper.

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Utility and Drawbacks of Scenario Planning in Taiwan and China

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"Scenario planning" has contributions to discover potential problems and to draw pictures regarding possible futures. I've learned this from teaching experiences during the past of 28 years, in serving as a faculty member, and of 18 years serving as a consultant and a trainer in over 1500 cross national, large-sized, and small and medium-sized companies in Taiwan and China.

Whenever a discussion or a speech related to future trends and future strategies, classes in my university and companies alike, I try and use "Scenario planning". However, I can't confirm that all of such activities are successful though in my normal life experience I find it works. As well, I have found it has drawbacks and limitations sometimes.

Scenario Planning in Taiwanese Life Insurance Companies

I used to conduct training for management in one of the top five Taiwanese life insurance companies by using "Scenario Planning" to try to explore their core value as well as their possible developmental strategy in the future. Before above activities, I spent some times to search for and grasp the background, capabilities, and performance of this company; then, plan the issues, problematiques, and ways of discussion. During the procedure, they are separated into groups and there are seven members in each group. Members who currently served as the top level managers representing group leaders are not allowed in the group to make sure that no one feels pressure from hierarchy. I ask them to think every possible ignored factors and thought and opinion that being seen as impossible occurred. The beginning is the most difficult stage.

The reasons are that, first, they are stuck in their past experience; second, they may ask top managers to provide opinions; and third, they will refuse their own innovative opinions unconsciously. Thus, scenario planning works better in a peer to peer structure. I always play as a promoter and provocateur to encourage them to keep thinking and to compliment their ideas without telling them what is wrong or right; moreover, I ask them to put new ideas upon their thinking. After continuous encouragement, they finally open their mind and conduct later discussions freely. As I mentioned before, I try and be a guide and a promoter. Last, they finally come out with the future possible development of life insurance industry. They found that some problems which being ignored are that of being seen as impossible occurred; in addition, in such open-minded discussion, they share personal opinions, thinking, and information that benefit for developing future images, with each

other. Importantly, they thought that it is an interesting and meaningful approach to explore and discover potential problems and future trend and can be seen as a kind of organization learning.

Such "Scenario Planning" workshops have been used as well in Taiwanese financial industry, automobile industry, and Taiwanese traditional manufacturing industry in China (most of participants are Chinese managers and engineers); and the ending are quite similar.

In classes of university, "Scenario Planning" I try to construct school vision based on students' opinions. I found that there are so many unique opinions and findings toward school possible environmental trends, opportunities, threats, in the future, and future positioning from students. Both students and I learn a lot from such activities.

Drawbacks in Disobeying Reality

Although above are successful cases, seemingly "Scenario Planning" as the most workable tool for facing future environments in decision making may disobey reality. The reasons are as followed:

First, it needs time to prepare and manipulate. In companies, several days at least and all participant involved are required. Such excludes pre-information and issues preparing. In classes, twelve hours at least and students must spend time to gather information and to discuss their own opinions are required.

Second, it needs skillful encouragement. The performance of motivation from a guide is a critical factor. The key point of motivation is to get rid of their experience based thinking style and to open their mind to think. The above is difficult to conduct and time and skills are needed.

Third, the integration and utilization of information needs to fit the issues. Some information is incomplete and that are difficult to tell which is meaningful as well as how to integrate and to use information for those participant who are not good at "Scenario Planning".

Fourth, the result discovered is not always useful. A certain future, an effective decision making, and a useful strategy are needed for most of enterprises. "Scenario Planning" can offer alternative scenarios but, it doesn't represent that the result can immediately used in making profit. For decision makers, they may become more confused and hesitated because they have no idea how to command subordinates and to make orders. Entrepreneurs must develop their future strategy further.

Based on the above, "Scenario Planning" is useful in discovering potential problems and the possible development of futures. It also promotes organizational learning; it, nevertheless, is not the only one way to solve future problems.

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Scenarios Practices: In Search of Theory

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Graham Molitor's article provides a timely prompt for reflecting on the value of scenario practices, especially given several data sources indicating their usage has increased significantly since 2001 (e.g. Ramirez, Selsky, & van der Heijden, 2008, p.9).

Molitor is not alone in his struggle to clarify the effectiveness of scenario practices. Others, including myself, are endeavouring to address similar questions: how to judge effectiveness and what do we mean by 'effectiveness' when referring to such practices? As he implicitly suggests, his critique does not imply that we should throw the scenario 'baby out with the bathwater'.

It is all too easy to agree with some of the criticisms of scenarios raised by Molitor. Three aspects are particularly relevant:

The first is that futures work seems to be characterised by highly personalised practices. Such practices can be introduced by someone who thought it was "a good idea" but who failed to fully reflect on the complexity of the situation and bases their choice of techniques on sound theoretical principles. Secondly, as much of scenario work is secret – particularly in military and corporate sectors- and/or difficult to assess, it is very hard to engage in comparative research. Thirdly, common to other practitioner-led fields, scenario practices are blessed with a high degree of innovation and entrepreneurship and cursed by a lack of reliable accounts that render explicitly what has worked and what has not, why and for whom in different settings.

In the limited space available, however, I would like to raise three areas that I feel are worthy of further reflection:

1. Scenarios Are Not Forecasts

By implicating scenarios with "*any technique that may advance forecasting capabilities*", Molitor contributes to the already considerable methodological confusion that characterises the futures field, in general, and scenario practices in particular. In fact, scenarios – i.e. many futures - and forecasting – one future - have different ontological and epistemological underpinnings.

a) Knowledge and ignorance

In forecasting, the emphasis of attention is on what is knowable in advance from evidence of the past. Uncertainty is treated as a 'lack of knowledge'.

In periods characterised by rapid and stable growth, forecasting has proved to be a reliable approach to predicting the future. In situations characterised by complexity, turbulence and ambigu-

ity, over-reliance on forecasting can be a fatal error.

Part of the trick, as Molitor puts it, of "*paring the number down to the essential or domineering forces that figure pivotally in the calculus of change*", can so easily become the problem. If paring down is based solely on Ian Mitroff's uncertainty-importance grid, which Molitor references as a tool to assist in assessing the validity of generated scenarios, the agreement of uncertainty is usually achieved without attention to ignorance. Agreement using this tool can also overlook implicitly held world-views and the social construction of ignorance, which goes hand-in-hand with organising in every firm or public sector agency.

Unlike forecasting, certain scenario practices, e.g. the Shell tradition which is the foundation of my practice, can encourage attention to the social construction of ignorance by individuals (i.e. the microcosm of the manager's mind), groups and organisations, as well as other collective knowledge-based biases that stem from disciplined expertise and group-think (Schoemaker, 1993).

b) Attention to vocabulary and units of analysis

In inter-organisational settings, forecasting does not enable groups and organisations to appreciate and address their significant challenges, which are variously characterised as systemic and emergent risk, socially messy or wicked problems or puzzling and seemingly intractable situations.

Common to these characterisations is the idea of irreducible complexities. These are social (e.g. multiple and contested worldviews); dynamic (variables and linkages?), structural (which system?) and temporal (which time horizons really matter?). Ironically, such challenges involve high decision stakes but are often oversimplified to avoid paralysis and remain politically gridlocked or overlooked, ignored and denied.

In such cases, the language of forecasting and analysis can be problematic. Any assessment of the future (or past) is not neutral, and is rarely objective. Furthermore, the future of these challenges and puzzling situations cannot be seen or understood from a study of the past or past dynamics alone.

In forecasting, the units and language of analysis are assumed to be given, neutral and descriptive. Scenario practices, on the other hand, can help forge a new common vocabulary and encourage a rethink of the units of analysis.

c) Deeper understanding

Scenario practices and forecasting direct attention to different flows of time and different forms of systemic and cultural depth. In forecasting, the flow of time is linear: past to present to future. In scenario practices, by contrast, the flow is multi-directional (e.g. past and future into the present) and iterative.

Scenario practices can also be designed to help groups and organisations attend to different forms of 'depth', e.g. structural drivers of change and/or cultural perspectives. The latter is essential when scenarios are developed for collective sense-making purposes as a means to establish common ground and forge the new and shared vocabulary for more inclusive strategic conversation.

In forecasting there is attention to structural dynamics within the 'cone of uncertainty' but not beyond it – and it is blind to cultural depth – to the deeper myths and

beliefs in play.

Some scholars and practitioners are already suggesting that these different forms of depth and the triad of time (past, present and future) can be incorporated within the ongoing evolution of scenario practices. For example, Inayatullah (2008) demonstrates the role for causal layered analysis for transformative futures thinking and Wilkinson and Eidinow (2008) highlight RIMA – a reflective, interventionist multi-agent based approach to scenario practices.

d) Sustaining constructive disagreement

Scenarios practices can also enable constructive disagreement to be sustained, e.g. by coupling scenarios to ongoing tracking or early warning systems. Forecasting, on the other hand, drives consensus and attention to a single – sensitivity bounded or probable - future.

e) Plausibility vs. Probable Futures

In the so-called Shell tradition of scenario practices the emphasis is on creating and maintaining a set of *plausible* futures rather than, as Molitor emphasises throughout his piece, determining the *most probable* future, which is more common to forecasting.

Some scenario practices, e.g. the Probabilistic Modified Trends Model (Bradfield, Wright, Burt, Cairns, & van der Heijden, 2005), are more in the forecasting camp, underpinned by assumptions of deductive logics, a concept of an objective 'environment', i.e. independent of any 'client' (Wilkinson & Eidinow, 2008) and associated with more positivist metrics of effectiveness (Walton, 2008).

Of course, these above crucial differences between forecasting and some scenario practices are not just blurred by Molitor. For example, Saffo (2007) in his article on six rules for more effective forecasting, offers the goal of forecasting as "*not to predict the future but to tell you what you need to know to take meaningful action in the present*" and positions himself as a forecaster as an "observer trying to understand and bound the uncertainties generated by events and trying to frame the choices that might influence the outcomes". Many scenario practitioners would say the same of themselves.

However, I suggest it is more helpful to clarify that scenarios and forecasting are different approaches to futures thinking and encourage attention to how they might be related to better effect, i.e. deployed in combination by groups and organisations to achieve better future-mindedness, that is action with the future in mind.

This brings me to my second point. In asking whether scenario practices are worth the effort, Molitor draws attention to the lack of agreement on 'effectiveness'.

2. An Agreement on What Is Meant by 'Effectiveness' Is Limited by Lack of Attention to Theory

Secrecy in scenario planning practices aside, it is easier to get money to conduct research using futures methods than it is to study futures methods and the effectiveness of interventions in practice. Funding for the production of studies of the future

(i.e. for research 'using' futures methods) exceeds that for research into futures practices and the study of 'consumption' and effectiveness in engagement, use and implementation!

Some grounded theories for scenario practices exist (see Schoemaker, 1993 and van der Heijden, 2005). In addition, approaches for theory building (Chermack, 2004) and theories of effectiveness from other walks of life, such as social ecology (Ramirez et al., 2008) are also emerging.

However, it is also important to avoid premature foreclosure of these highly innovative theoretical developments. At least one recent paper (Lang, 2008) suggests that, based on an analysis of the scenario literature, many more framings of effectiveness are possible depending on organisational metaphors in play.

The lack of systematic and scholarly study into futures practices, in general, and scenario practices in particular, means it is not possible to confirm or reject, on any statistically valid or otherwise basis, Molitor's statement that "*no major contribution or breakthrough*" is possible with scenarios.

Molitor rightly notes that '*one or a few cases do not make a compelling case for the value of engaging in scenarios deliberations.*' Indeed, the case evidence and literature on scenarios provides, at best, learning from second hand experience and, at worst, post-rationalised accounts of success.

Furthermore, there is limited evidence of limitations and failings from which to enable learning. Perhaps this is what also concerns Molitor when he refers to "*what some colleagues might brag about*"! (For a notable exception of this situation see the discussion between Richard Whittington (2006), Gerard Hodgkinson and George Wright (2006) as to why a scenario-based intervention by the latter two authors failed.)

Respecting different traditions in scenario practices

Attempts to clarify the general methodological confusion about scenario practices – practices which encompass probable, plausible or possible futures – is already evident, e.g. Bradfield et al. (2005) and Ramirez et al. (2008) each trace the multiple origins of scenario practices. Bradfield et al. also note three different models in practice.

Clarification of the confusion in scenario practices is also being tackled through the development of different typologies of scenario practices (Borjeson, 2006) and other futures practices (Inayatullah, 2002).

Walton (2008) highlights the challenge of determining the effectiveness of scenario practices given the reality of different ontological and epistemological foundations and suggests pragmatism as a method for developing criteria.

Communities in conflict?

It is perhaps less comforting to reflect that the methodological confusion might also stem, from the conflict – or at least lack of respect – between different communities of scenario practices and perhaps even individual practitioners.

On the one side there is 'Homo-Deductivist', the formal-expertise focussed, qualitative – evidence led, computer-modelling based, often probabilistic scenarios folks and on the other side is 'Homo-Constructivist' (the qualitative – evidence led, intuitive

causal logics, storytelling, plausible or possible but certainly not probable futures, scenario folks.

Influencing both sides, developments in sciences (social and natural) and technology are forging a new paradigm and furnishing new tools, e.g. agent-based modelling, in which quantitative and qualitative approaches relate differently to each other than they have so far. Standing in the sidelines is 'Homo Abductivist' (imagination followed by causal analysis) - a practice of scenarios that hopefully and helpfully bridges the quant-qual, expert-stakeholder, model-story divides of old.

3. Exciting New Developments Are Emerging Concerning Theoretically – Derived Understanding of Scenario Practices

Molitor's article could be interpreted as suggesting that scenarios are nothing new. But is this right?

Recently, work at the University of Oxford has characterized scenarios according to two well recognised social science theoretical frameworks – causal textures theory (Emery & Trist, 1965) and, most recently, sensemaking (Weick, 1995).

This undertaking to reveal and clarify theory in scenario practices is rare, but it is a necessary step if the field is to secure the quality control and intellectual rigour required for it to be more fully recognised. This attention to theory is needed for scenarios to realise their potential contribution as a rigorous activity within the domain of public policy and strategy development.

Ramirez, Selsky and van der Heijden (2008) assembled the work of the 2005 Oxford Futures Forum (www.oxfordfuturesforum.org.uk) to consider scenarios practices in light of causal textures theory. Causal textures theory is employed by the co-editors of the book to explain why scenario work increases in times of crisis (whether it was the 1973 crisis, 9/11 in 2001, or – as can be expected- the 2008-9 financial crisis).

Their work suggests that scenario work is not of value when non-turbulent environmental conditions are in place. Instead scenario thinking helps decision-makers increase their perceived adaptive capabilities when facing turbulent conditions. It provides the first contingency theory for the use of scenarios.

These authors explain how scenarios can enable organisations in turbulent conditions to collaborate with each other to stabilise their immediate environments and render turbulence more distant and less relevant to their affairs (Ramirez et al., 2008).

An important conclusion from their efforts is that a theoretically sound version of scenario work – arguably more sound than its alternatives- concerns scenario work which is about the plausible futures of the context of something rather than possible futures of the something itself.

The 2008 Oxford Futures Forum (www.oxfordfuturesforum.org.uk) investigated how 'sensemaking' theories developed by Weick (1995) and Weick and Sutcliffe (2001) might help explain scenario work in an equally rigorous intellectual way.

Two important challenges became evident in doing so. The first one is that the social psychology work of Weick et al. suggests sense is made ex-post, whereas scenario practices by definition considers the world ex-ante. The other challenge has to

do with 'levels', in particular, individual versus collective sense-making.

Making sense ex-ante

Scenarios are organised efforts to imagine (some would say fabricate) possible future conditions which are used to challenge existing perspectives and or/plans (Schwartz, 1996; van der Heijden, 2005) and which can be deployed to counter group and individual decision biases (Schoemaker, 1993). In scenario practices the future is explicitly treated as a safe conceptual space, operating at a higher logical level than the present (Normann, 2001), in which it is possible to safely consider how to act from the present into the future. In other words, scenarios act as a transitional object or space (Amado and Ambrose, 2001) and the 'future' is an abstraction of the possible-in-the-actual that allows back-casting from 'there and then' to 'here and now' in ways that are consistent with the retrospective characterisation of Weickian sense-making.

The advantage of this is that it invites us to be explicit about the ontological assumptions and epistemological considerations, not only of our practices in scenario work (as Walton (2008) initiated), but also about ontological and epistemological perspectives regarding time, choice and action. In other words, what we are learning in confronting scenarios and sensemaking with each other is to give more priority to our assumptions regarding temporality, choice, and agency (as compared to methods involved in scenario work per se.)

Issues of Level

Sense-making has been studied by Weick and others mostly in terms of individuals in small groups (cockpit and air traffic controlling teams; firefighters). Scenarios work has also been studied in such terms, notably by Schoemaker (1993) in relation to decision-making biases and by Naude et al. (2000) in relation to Belbin's roles in senior executive teams. Wack's (1985) work on the 'microcosm' of the decision-maker is ambiguous in this respect – it is unclear if he addresses the individual's perspective or the common world view of a small group of executives. Van der Heijden's (2005) emphasis on conversations also suggests that scenarios contribute to groups and his idea of scenarios improving the 'quality' of strategic conversation has the advantage of selecting how the scenarios impact the sense that people have of each other and the common business idea that holds them together.

The challenge is how group-level sense-making affects the organization as a whole, and vice versa, or in public interest scenarios, large swathes of society. This we know is still problematic in social psychology: work like Maturana and Varela's (1992) suggests that minds are in any case collective, not individual constructs – which problematises how individual agency may be affected by scenario work. So the issue is both group-to-individual as well as group-to-society

Conclusion

Scenario practices are under-researched and under-theorised. The potential strengths, and limits, of scenario practices which encompass probable, plausible or possible futures thinking are unclear.

Some scenario practices appear to produce remarkable successes. Undoubtedly they also entail multiple failures. There needs to be more shared reporting of and learning about both aspects.

Enabling this, in part, will require that funding for research into futures practices becomes available. It will also require a clinical research tradition to be established.

I therefore welcome Molitor's reflections as a provocation towards a greater effort to discuss and research the state of the art and effectiveness of scenario planning practices from the perspective of different traditions and across the range of experiences in different sectors and world regions.

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An Integral Approach to Scenarios

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Introduction

We would not find disagreement with much of what Graham Molitor says about scenarios as a "rational discussion targeting specific oncoming change(s)" (p.1). He says that he remains unconvinced that "scenarios make any contribution or breakthrough" (p.1), and that "most scenarios merely reinforce and regird what participants already basically knew" (p.1). Apart from acting to "jog thinking" in his opinion scenarios do "not add much value".

While we would agree with much that Molitor says about scenarios as "rational" approaches to breakthroughs in thought that has not stopped us seeking ways to best employ this method. We do this because in our opinion scenarios remain a widely accessible way to bring foresight into organisations. Poor outcomes from prior scenario processes notwithstanding many decision-makers and people with power and influence seem to regard scenarios as an approach that could produce 'valid' insights and breakthroughs in thinking. While those expectations could be deluded or naïve, we still find that clients continue to ask for scenarios in our organisational engagements. The challenge, that we have accepted, is to find ways to run scenario processes that do contribute to 'breakthroughs'.

Our overall design philosophy

Our first point is an obvious one but still worth reiterating. The scenario is only one element in a foresight process. As Voros (2003) demonstrated the 'prospective' phase is both heavily dependent on, and makes a significant contribution to, the Input, Analysis, Interpretation and Output phases of a foresight process. Our discussion here will limit itself to the 'prospective' element of such a process but we would never design such a process in isolation of the other elements. All must integrate to create the opportunity for breakthrough.

Our second point turns on our particular interest in foresight processes that lead towards transformations and breakthrough in thought and action. Specifically we have sought to employ scenarios in order to change individual perspective(s) of a situation, it's context, and the actors participating in the situation. Such transformations are necessarily individual in nature whereas most, if not all, situations are social in nature. What we have sought are scenario processes that create the poten-

tial for changes to individual perception but that then lead to social understandings and then to the individual behaviours that can produce social impact. More simply stated we want scenarios that are both broad and deep and convey individual and social breakthroughs in perspective. For us Ken Wilber's 4 quadrant model (2001) has been a very useful design tool. We make no claims that our approach is 'more' than another approach that does not use a framework like Wilber's one. Rather the 4 quadrant model seemed to good fit for what we sought to achieve.

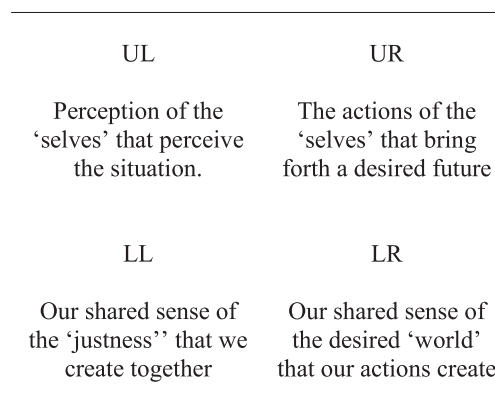


Figure 1. Integral scenario design template

Figure 1 is a summary of how our scenario approach is designed. The different elements will be elaborated in what follows. That design is not a 'cookbook' that says "do this first and then follow with this". You start at the place that it is best to start at but generally the movement of our approach is to move from the external to the internal, from the individual to the group, and from thinking to action.

The process we undertake uses a number of different frameworks to elicit information from within each quadrant. To capture information in the lower-right (LR), we use scanning techniques based on the 4 quadrants, in the LR this might be based upon STEEP, or its variations, depending on what information is required for the particular work we are doing. Most of the information we need to populate the LR quadrant during the prospection stage will have been collected during the input, analysis and interpretation phases of the foresight process and will not be discussed here.

In the upper-left quadrant (UL), we make use of Susan Cook-Greuter's work on self-stage theory (1999) that is based upon the seminal work of Jane Loevinger. These stages of the self generate actors within the final scenario narrative that bring it to life and illustrate the interplay these have in the 'real' world. When presented with a theory such as Cook-Greuter's participants become aware of the self-constructed nature of how they perceive a situation. Participants also become aware of how other 'selves', be they other people or aspects of their own nature, could perceive an agreed set of 'facts' as constituting a very different situation. The use of self-structures honours the perspective of participants while also raising the awareness of different perspectives that should also be honoured.

For the lower left quadrant (LL), we use the work of Clare Graves that was popularised by Don Beck and Chris Cowan (1996). The Graves framework of values gives a good approximation of the values that play out within societies and act as indicators as to the modal value set for a given group or society. Whereas the self-structure (UL) honours an individual perspective the values framework (LL) honours what groups share as valid and just meanings. Once again participant scan locate their own sets of shared values and they also encounter different value sets that 'others' may value. This dual process of honouring and opening up to difference is central to our approach towards scenarios. The developmental aspect of Graves work is also quite useful in the development of scenario logics, but at this stage we have used Grave's ideas as a way of conceptualising the various values that drive worldviews.

For the upper right quadrant (UR), the self-stages are mapped onto the values sets and this generates a complex interplay of options as it comes to the interactions possible in the alternative futures and how these might play out. Behaviours are indicated as these are conceived. It is this stage in the scenario process that can give the greatest breakthrough in present understanding. Scenarios processes can also be useful tools for developing greater understanding of the present and the forces that shape current issues.

The Experience

Our design approach is not suitable for short engagements or for focussing questions that are limited to possible changes in the external environment (STEEP only scenarios). Our approach works well when the organisation is interested in the interplay between the external environment and the actors who inhabit that environment. It is a constant challenge to find innovative and engaging ways to introduce 'theory' into organisational engagements, but one that we do find rewarding for the overall process if it can be successfully done.

Our design approach has another 'benefit', the mixing of actor motives, external change and shared worldview does mimic 'in casted' scenario logics that are commonly employed in scenario narratives. While we also commonly employ in casts in our scenario write-ups we also find that sometimes those 'stories' happen in the workshop as well due to the mixing of the focal domains.

In Summary

Scenarios for us are decision-making tools in so far as they allow us to 'rehearse' our decisions in relative safety before having to make them for 'real'. They allow for the wind tunnelling of new and existing strategies or the development of preferred worlds. We believe that the scenarios that have been developed through this process are rigorous and include actors that make their behavioural decisions based upon their values and self-stage which gives them depth and resonance with the readers of the narrative and those involved in the process itself. Our work in this area is still developing however our experience is that scenarios can be more than the 'party-piece' that Molitor observes scenarios normally are.

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From Foresight to Insight: Using Scenarios Well

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Some of the best moments I have had working with clients on futures projects as a consultant and a facilitator have been during scenarios workshops. By 'best', I mean those moments when a different insight emerges in the room, or a new way of interpreting the world. Even in the more everyday futures work I've never had the sense that I've been "hashing and haranguing" my way through it. Without appearing to brag, clients generally seem to feel that they have benefited. So reading Graham Molitor's piece, my first reaction was one of sadness, that such a distinguished futurist has come to find such rich work so wearisome.

His article, however, raises important questions about why, in our futures practice, we use scenarios methods at all. There are many futures techniques, after all. So what is it in scenarios methods that contributes depth or breadth to futures work? For me the answer to that question lies in the way in which organisations relate to their external environment and understand it, and how groups learn. Futures work can be thought of as a device for 'disturbing the present', to adapt Gaston Berger's famous phrase. The question is whether scenarios do this well or not.

Crossing Boundaries

The emergence of futures as a discipline was closely bound up with the development and diffusion of open systems theory, during the 1950s and the 1960s. One way to think about the role and value of scenarios is to look at them through the lens of the 'law of requisite variety', formulated by Ross Ashby (1956) in the 1950s. Ashby's law states that organisations need to match internally the variety they encounter in their external environment. They can do this by increasing (or amplifying) their own variety, or reducing (attenuating) that of the external environment.

One of the problems with much futures analysis is that if it is any good it produces far too much 'variety' for the organisation (or group of organisations) to process it effectively; that is, in a manner that creates meaning for them. Scanning, that essential tool for futures work, is a case in point; it produces so much data, much of it new, that organisations are overwhelmed by it. One of the reasons we create scenarios, therefore, is to help people interpret data in a way which allows them both to manage variety and to comprehend it.

There is more to this. Arie de Geus (1997) suggested more than a decade ago, drawing on the work of Winnicott, that scenarios could be thought of as "transitional objects", versions of the play

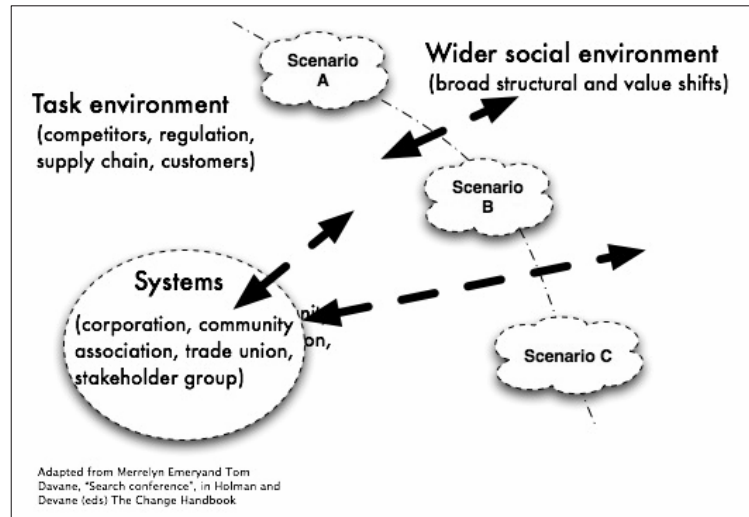


Figure 1. The future context

Note. From "Search Conference", *The Change Handbook* (pp.25-42), by Merrelyn Emery and Tom Devane (1999), in Peggy Holman and Tom Devane (Eds.), San Francisco, Berrett-Koehler.

objects which children use to as they evolve their own identities, separate from that of their parents. The idea can be extended, for Winnicott also told us that one of the important features of the transitional object is that they are made (as objects) by those who use them. Scenarios likewise. Scenarios are an object, or set of objects, which enable a structured transition between past, present and future. The idea can be extended again. Much of my work is with inter-disciplinary or multi-stakeholder groups, where scenarios enable transitions between domains of expertise and organisation boundaries. They become the 'boundary objects', in the sense imagined by Susan Leigh Star (Curry, 2007).

In other words, scenarios work is a process which is about learning and negotiation, about constructing new social meaning. It is possible to find ways to capture some of this for others who weren't involved in the process, but it requires care. On this reading, some of the expectations which are still conventionally brought to bear on scenarios work actually get in the way of the work.

Theory and Practice

One of the issues about scenarios work that emerges clearly from Graham Molitor's paper is the extent to which particular assumptions about process have become reified. Aspects of practice which developed initially because of contingent issues of practice in particular organisational or cultural environments have become inscribed as method. One of the issues for me in GBN's description of its method, for example, is in its initial emphasis on "Uncovering the decision" (Schwartz, 1996). SRI's scenarios approach, similarly, starts with the "decision focus" (Wilson, 1997).

This seems to me to lead to some of the difficulties Molitor describes with scenarios work in general. Donald Schon (1981) makes a valuable distinction between 'problem solving' and 'problem setting', and GBN's approach, like that of SRI, leads to a more narrow emphasis on problem solving. The effect is obvious. Asking about "the shape of the American car market in 2025" leads to a different conversation, and to different data, than "the shape of transport choices in 2025" (although asking either question might have steered the industry away from its current pit). In my experience, part of the value of scenarios work lies in those moments of re-framing which can be stimulated by a challenging problem-setting question.

Similarly, the widespread American scenarios practice – when using the 2x2 'axes of uncertainty' model – of doing the scenario-building in a two-day workshop has much to do with the way in which US companies and executives expect to think about strategy. The outcome is that the development of the axes – the most sensitive and often most difficult part of the project, in my experience – is done towards the end of the first day under acute pressures of time with a roomful of tired people. The result is often that the critical uncertainties identified are too simple to accommodate the level of richness which good futures work should generate. This creates an inevitable frustration with the process and its outcomes.

Again, much scenarios practice, referred to in Graham's paper, places undue emphasis on the role of experts. They are often the worst people at thinking about uncertainty; they typically over-emphasise the likely speed of change, and pay insufficient attention to social and other contexts. They also have most to lose from different ways of imagining the organisational landscape. In practice, most people have some knowledge of the future, provided they are involved in processes which give them the space to think and reflect on the material. Everyone (in the phrase of the late Michael Young) has the capacity to be remarkable. For this reason, diversity is usually more valuable than expertise.

Finally, many of the flaws in scenarios processes come from an over-reliance on specific methods which are expected to serve all purposes. Futures practitioners can be their own worst enemies here, since in they tend to re-use particular methods once they become familiar with them. A telling exchange between (academic-based) practitioners at this year's Oxford Futures Forum suggested that futures work generally had too little theory, and by extension, rather too much practice. While this may be a northern perspective rather than a universal view, the outcome is that there is insufficient consideration of the basis of particular methods, and therefore their appropriateness as a tool. This is true both of futures methods in general, and scenarios methods in particular.

Graham Molitor's paper, therefore, is a challenge to futures' practitioners to do better. In its review of much scenarios work, it makes us focus on what work we are doing when we use scenarios, and why we are doing it. His emphasis on the need for depth, and the value (and importance) of understanding long-term histories, is timely. Even with such care, scenarios are poor forecasting tools. They are better at generating foresight. It should be our challenge, as practitioners, to turn that foresight into insight.

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Windows for the Mind: The Use of Scenario Planning for Enhancing Decision-Making and Managing Uncertainty

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At this very moment there are people in all aspects of life ranging from multinational corporations dealing with investment and growth opportunities to governments developing policies that will support their nations, to a farmer who is contemplating whether to invest in another crop and a young student wondering what career path they will want to embark upon. All of these people share the common context of making decisions in the context of uncertainty about the future.

As humans our minds have an extraordinary capacity to deal with complexity if only we would get out of the way and allowed our mind to do its job. Many of us want to have control and to shape our thinking to get the result that we *think* we want. At times this can be a useful way of being. Because of the complexity and uncertainty that prevails in most situations, a different approach is needed to achieve desired outcomes. Part of this different approach requires stepping back a moment to understand how we make decisions.

What Is the Purpose of Scenario Planning?

In a general sense decision-making is shaped fundamentally by our mental models/worldviews, the unconscious frames of reference that act as filters and so determine what and how we perceive the world that we interact with. These perceptions provide the important data that we require to inform our decision-making. In turn our mental models and perceptions will shape the style, scope and depth of our thinking (Oka, 2000). Together these steps interplay with each other to shape the decisions we make moment by moment. So no matter who is involved in the decision-making process, the usefulness of the decision and its implementation will be strongly shaped by the nature of our mental models.

This point is illustrated by an organisation that was struggling with the decision-making of their new managing director. This person was newly appointed because of their exceptional performance. The board was not successful in working with the new managing director to highlight the issues of his decision-making. After some questioning and interviews the issue was very clear. The new man-

aging director had been promoted from the European operations of the business along with his Eurocentric view of reality. Decisions were being shaped by such a worldview that were not totally appropriate for the current operational context. Although this may seem obvious it was not to the people of this multi-national organisation.

The key result of the development and application of the scenario planning methodology is to challenge and shape mental models. When this is achieved we perceive our world differently and so receive new forms of data that will inform us and ultimately lead to more informed decisions. A shift in our mental models can affect our sense of identity and our personal metaphor (unconscious scripts that we use that shape the current way we live our lives). Such change has profound influence on our confidence to make decisions in a complex and uncertain world. This issue is elegantly reflected by:

Human beings and organisations do not act in response to reality but to an internally constructed version of reality (Kees Van Der Heijden, p.55).

Complexity and uncertainty are two issues that tend to create decision-making hiatus for many of us. There is a human desire to have issues presented simply and to be able to know all there is to know to confidently make a decision. This desire has directed a great deal of effort and resources into prediction methodology. Unfortunately we cannot predict the future and remove the uncertainty. Even if this was possible and we were given all there is to know about an issue, there is no guarantee that the decision-making will be successful if the underlying mental models, perceptions and thinking are not tuned appropriately. This is not to say that information is not important. It is only *part* of the process.

When we do not have all of the information, nor do we have an understanding of the complex interplay of forces and high degrees of uncertainty how do we make decisions? This will depend on our internally constructed version of reality. The intent behind scenario planning is to reduce the decision-making hiatus so that people are better informed about the uncertainty and complexity of the context they are operating within. This is succinctly articulated by:

...too many forces work against the possibility of getting the right forecast. The future is no longer stable; it has become a moving target. No single "right" projection can be deduced from past behaviour. The better approach I believe, is to accept uncertainty, try to understand it, and make it part of our reasoning. Uncertainty is not just an occasional temporary deviation from reasonable predictability ; it is a basic structural feature of the business environment (Pierre Wack, p.73).

In a recent exercise the executive of a resource utility were using the scenario planning methodology to inform their strategy development process. Complex and uncertain issues such as the emergent carbon trading scheme, global economic conditions, community perceptions and behaviours about climate change, the severity of climate change and technological development would all play critical roles in the direction of this business. The scenarios provided the executive group with the context to how each of these and other factors would interplay with each other to create alternate descriptions of the future. As one executive had said: *"these stories were so well*

compelling I was consumed by them and could feel the pressures of what could be in the future". The exploration of the scenarios enabled the executive group to share their experiences of what the uncertainties *meant to them and to the business*. This led to the development of a series of models that contextualised the crafting of the organisation's strategy. In this exercise the uncertainties were identified, understood in how they could manifest themselves and built into the consciousness of the decision-making.

Our ability to deal with large volumes of diverse, often contradictory and quickly changing information about our operating landscape can also become an inhibitor to useful decision-making. The purpose of scenario planning is to provide a means to capture such diversity and complexity and present it in a form that enables us to be informed about the underlying dynamics of our landscape. An awareness and understanding of the dynamic complexity of issues provides a solid foundation for the decision-making process.

Our conscious minds can deal with 7 ± 2 chunks of information at any period of time. Many of the decision-making situations we encounter in organisations usually deal with many more variables and our capacity for effective decision-making becomes overwhelmed. Decision-making can be greatly enhanced when we begin to utilise the immense processing capacity of the unconscious mind to deal with the complexity and multiplicity of variables. We witness this on almost a daily basis when for example we awake from sleep to have arrived at an answer to a problem that we had been challenging us for some time or the time honoured example of being in the shower or while exercising a flash of insight washes through us. In each of these are examples we have been open to the unconscious and we have listened to the message.

The scenario planning process provides the information and the structure that the unconscious mind requires to enable it to provide us with the insights we desire. The scenarios process can be considered as a means to perturb the unconscious mind and it is through this process that shifts in mental models are achieved. As one CEO of a large education institute recently stated in relation to the decisions about forthcoming educational reforms: *"After we had worked through the uncertainties I had a fundamental shift inside me that took away the fear of the complexity and the uncertainty... I have a deep feeling that inspires me that we are on the right track and that we will be successful despite the change"*. These are the words of a person that although has extraordinary challenges in developing their organisational internal capability, there is a deeper confidence that arises in relation to future direction.

What Is Scenario Planning?

Scenario planning is a methodology with a range of processes that provide the opportunity to challenge our mental models about the external landscape that we operate within so as to inform and enhance decision-making. The methodology assists us to identify key factors in the operating landscape that are/will create uncertainty and to understand how those factors can interplay with each other to describe plausible alternate descriptions of the operating landscape in the future. These alternate descriptions are whole stories that depending on the context provide a stimulating narrative of a

future environment. The scenario stories are like scripts to a movie. They provide the details of the future external operating landscape and describe the underlying dynamics that have created that future world.

When written well, the stories are like spells that engage us totally in that world as if we are consumed by it. Being able to see, hear, taste and smell what this world is about provides us with critical context to undertake strategic conversations. The stories are like windows for the mind. Each time we look through a window we gain an appreciation of a unique set of dynamics that will affect us differently to the view from the previous window. An excellent example of this is found by watching the movies *Blade Runner* with Harrison Ford and *Demolition Man* with Sylvester Stallone and Sandra Bullock. Each movie is a window that we can look through about Los Angeles during the period 2030-2050. As we look through each window we find a very different view into the "reality" of Los Angeles in the future.

During a scenario planning process three or four alternate windows and hence views of the future are crafted and are used solely for the purpose to engage us in an open dialogue to test and explore our beliefs and assumptions about the issue at hand. The issue may for example be about exploring the relevance of a strategic plan for an organisation or testing the robustness of a suite of policies for a government agency. Each scenario story provides a unique window or context to consider the meaning it has for the issue being considered. The key focus of the activity is to engage in exploratory dialogue as this process will lead to developments in shared meaning and the emergence of new ideas and insights that will affect decision-making. Rehearsing the future is often stated to define this process.

A memorable result of this process had occurred with a government agency that had undertaken two scenario planning processes. The first was at a divisional level and the second conducted corporately. The result of the work enabled the executive team to become alert to a radically changing political environment that had actually eventuated. Because of the rehearsal process, the shifts in mental models and development in shared meaning, this team understood the new political landscape and was able to lead the Minister and new government appropriately.

Into the Future

When facilitated with the intent to shape and challenge mental models, scenario planning is a powerful methodology for generating new ideas and insights that enhance decision-making. The process is not about prediction. It is about preparing us to understand and be accepting of uncertainty and complexity and to build these into our decision-making processes. The process is about developing our capacity to be able to navigate the external operating landscape in a responsive fashion.

A successful scenario planning process will be witnessed by enhanced confidence in decision-making, shifts in jobs and careers, enhanced flexibility in dealing with issues and in some cases a shift in personal identity. The success arises by having clarity on the intent of the process and to be aware that scenario planning is about people, how they code their reality, their understanding of how this affects decision-making and working with them to influence their mental models.

When you know this happened and people are now working differently, you have now made a major contribution to shaping the world.

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Stepping into, or through, the Mirror: Embodying Alternative Scenario Patterns

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Urgent Relevance

The symposium lead article by Graham Molitor (*Scenarios: Worth the Effort?*) is especially relevant at this time when increasing effort is being made to elicit a coherent response to major strategic challenges for which some use of scenario-building will clearly be made. The challenge is all the more evident in that it is characterized by a period of questionable credibility with respect to those from whom authoritative advice might be expected to be forthcoming, whether it be (inter)governmental authorities, academia, corporate focal groups or civil society.

Underlying the challenge is a continuing assumption that somehow a degree of consensus can be achieved amongst "rational" people as to the best way forward. Failing that, it is assumed that those with the power to do so can ensure that a degree of operational agreement can be imposed – as is evident in the EU response to the democratic Irish "No" vote on the Lisbon Reform Treaty. Such assumptions run the risk of being proved to be extremely naive.

There is a sense in which underlying cognitive and behavioural processes are being ignored, even when simplistically framed as cultural preferences. The urgent question now is what is required to enable coherent action and what part do scenarios play, or fail to play, in this process.

Indicators

In seeking a fruitful way to comment on the theme introduced by Molitor, a first thought relates to an analogous challenge with respect to social and other indicators. Any set of indicators raises similar concerns as to whether they together – as a form of implicit scenario – are capable of engendering appropriate action. This concern, on the occasion of a workshop for the UNU Goals, Process and Indicators of Development Project, gave rise to a paper exploring a fruitful distinction (Judge, 1993a).

That paper argued that the difficulty is that the accumulation of data on what is unsatisfactory appears to be accompanied by a reluctance to recognize or respond to such information. It stressed the importance of taking into account the incapacity to act against maldevelopment even when appropriate indicators are available and offer striking evidence.

This suggests an analogous contrast between "Remedial Capacity Scenarios" and "Expected Performance Scenarios" to highlight the extent to which the response to a scenario may be characterized by the kind of ineffectual action (however enthusiastic) to which Molitor points. What does who expect to be done by whom with the most insightful scenario – and by whom will its insights be subsequently ignored and why?

Such a focus is especially relevant at a time when the financial, economic and climatic challenges are so evident – and when that regarding the driver of population overshoot is ignored.

Avoidance Processes

The more obvious way to frame the conventional response to scenarios that seemingly call for action is in terms of avoidance processes. This might be understood as an art form characteristic of governance and diplomacy. An earlier exploration of this phenomenon distinguished overt from covert approaches (Judge, 1997). The overt were identified as including: Stress positive achievements, Exclude critical reporters, Rotation of praise and blame, Proposal of solutions based on unacceptable criteria, Focus on monitoring, review and study, Displace attention to reframe the challenge, Celebrate achievements, Scapegoating, and Claim unproven links.

The covert "hidden art" of category manipulation was identified as including: Definitional games, Neglected or repressed categories, Over-simplification, Over-complexification, Narrowing the time-frame, Focusing on the inaccessible, Ignoring cultural variants, Favouring the fashionable, Rejection through negative association, Disqualification, Conceptual "roll-on, roll-off", "Classification" to protect interests, Exertion of pressure, and Delay.

A valuable case study in avoidance processes is provided by the different arenas in which some form of "shunning" is practiced, notably as these apply to any scenarios in which population challenges might be included. For example, John L. Farrands (1993) points to the manner in which the Rio Earth Summit excluded any consideration of the population challenge – which, as the former Permanent Head of the Australian Department of Science, he claims to be "unbelievable". The same has been the case with respect to the Poznan climate change conference of 2008 and is expected to be the case for the Copenhagen follow-up of 2009.

A much more fundamental question is whether the kinds of decisions that might emerge from scenarios are indeed ever taken. Here a distinction must of course be made between:

- intra-systemic scenarios, as developed by and within particular systems under a mandate of an empowered leadership structure able to ensure implementation. These do indeed lend themselves to implementation as part of the strategic management processes of that system.
- extra-systemic scenarios, as developed by (and for) multiple systems, across the boundaries of those systems (possibly even reframing those boundaries), without any possibility of effective resolution of the challenges to implementation.

In the extra-systemic case, the necessary integrity for coherent action is only ever ensured as a consequence of threats external to the disparate systems. The response is

then necessarily reactive and is not a consequence of proactive consideration emerging from the scenario building process. However the reactive approach is then positively reframed as realistically responding to a concrete situation – evidence-based reality – contrasted with any prior effort at scenario-building, then disparagingly framed as unrealistic and hypothetical. Hurricane Katrina might offer an example. The case of the "big three" US automakers is also instructive in the light of the scenarios they might have been considering in 2007, as compared with those they were obliged to consider in December 2008 when seeking a bailout from the US government.

The fire-fighting scenario was evident in the urgent response to the subprime crisis in 2008. Avoidance processes are currently evident in the response to Dafur, Zimbabwe and the Eastern Congo. They have been usefully dramatized with regard to the RMS Titanic disaster. Farrands (1993, p.176) uses a classic story to highlight the challenge:

The combined problems of population growth and economic growth demand that we apply more intelligence to their solution than we have shown to date in our global environmental and economic planning, or we shall just be like the frog in the slowly boiling pan of water who never identifies the point of discomfort level beyond which it is fatal to stay. The frog is boiled alive, every time.

Perhaps the most common approach to action avoidance is through defusing any urgency in the face of a problematic situation by appealing to the metaphor of those who perceive the glass as "half-full" in contrast to those who perceive it as "half-empty". Even the deadliest problems then lend themselves to this.

The most reprehensible approach is ensuring silence with regard to a crisis, as notably documented with respect to the extent of rape in the Eastern Congo (Jackson, 2007) where over 5 million are estimated to have died (in excess of normal mortality) from 1988-2008. Such an indicator, equivalent to that of the Nazi Final Solution, was however specifically discussed (Judge, 1993a) as not indicative of any remedial capacity.

Lack of Self-reflexivity

In decades past, action avoidance was most strikingly manifest with regard to the issue of smoking – notably in meeting rooms where scenarios were being developed or considered. It was considered ridiculous, and politically incorrect, to question the right of decision-makers to smoke in that context. More generally this can be understood as the problem of decision-makers requiring others to change their behavioural patterns without questioning their own.

This issue continues to be evident, and noted by commentators, in the resources allocated to summit meetings and the carbon footprint associated with travel to them – especially in the case of meetings considering scenarios for development or climate change. This notably serves to reduce the credibility of whatever emerges from such gatherings – especially if little emerges.

An even more general case can be made in the light of the mirror self-recognition test as evidence of consciousness. In this respect an interesting example is provided by the remark of Arundhati Roy (2008):

The only way to contain (it would be naïve to say end) terrorism is to look at the monster in the mirror.

Cognitive Glass Ceiling

The metaphor of the "glass ceiling" has been widely used with regard to the barrier to women (or those of other races) acceding to executive positions of responsibility. It may be fruitful to explore such a metaphor with respect to the barrier to effective action on scenarios, namely as the cognitive barrier to shifting from intellectual consideration of scenarios into the alternative behaviours for which the preferred scenario calls, namely the cognitive barrier to behaviour change – notably amongst those who call for it. Debating non-smoking without constraining smoking amongst the debaters is a simple example – historic for some but a continuing reality for others. The problematic nature of such situations is summarized by the proverb: People in glass houses should not throw stones.

The metaphor is a useful one since so many scenarios (and the term itself) make use of the metaphor of strategic "vision" (in contrast to other possibilities (discussed below). Scenario building may also be associated with metaphors such as "fish-bowl". More intriguing is that scenario building calls for a degree of "speculation", implying a degree of mirroring.

Whether ceiling, window or glasshouse, the question is how one pattern of behaviour is contained by it such as to inhibit effective engagement with an external pattern considered desirable. How does "cognitive glazing" work so effectively? The metaphor might even be pushed further to inquire about the effectiveness of "cognitive double-glazing", or even "triple-glazing" and "security" glass – and the possible insulation they offer against unwelcome effects on any "double bottom line" and "triple bottom line". More cynically, the role of those marketing the advantages of vacuum-sealed double-glazing might be drawn into the metaphor. A case could also be made for considering the implicit metaphorical significance of smoked, one-way and polarized glass.

There is also an extreme irony to the fact that the most common computer operating system, through which scenarios are most frequently presented, is also glass-based and has the name *Windows*. To the extent that such terms condition thinking, as implied by the classic study of George Lakoff and Mark Johnson (1980), one may also remark on the irony that whilst a multitude are thereby equipped with "windows" through which to observe the world virtually, only one person is seemingly metaphorically equipped with access to it in reality, namely the owner of *Windows* – Bill Gates. Curiously this happens in a period when there is widespread focus on "gated communities" and their virtual analogues. It is within such communities that scenario-building is necessarily less challenging.

Following the point of Roy (2008), the real challenge may be more than looking in the mirror. It may require cognitively "stepping through it", or "into it", as explored in a variety of folk tales – or embodying the reflection in some way, as argued with respect to mirror self-recognition.

Requisite Catalytic Effect

What is it that activates a scenario as a meaningful representation of reality with which psychoactive engagement is possible and necessary?

The most obvious factor – causing cognitive glazing to "fail" – is the publicized shock reality of human death (although only to a lesser degree its possibility). It should not be forgotten that human civilization effectively now requires "human sacrifice" prior to adopting any new health and safety legislation – no deaths, no legislation. It is just a question of how many bodies are required to gain passage of the legislation, just as cultures of the past made greater sacrifices in response to greater need. During the Cold War, scenarios (and military budgets) needed the possibility of "mega-deaths" to acquire credibility. However, as hypothetical possibilities, mega-deaths no longer have credibility – especially since all forms of death are now rehearsed daily by the media – as a prime attractor for entertainment, following the pattern of Roman games in the Coliseum.

Given the glazing metaphor and the need to "break the glass", it is curious that a catalytic effect is recognized in "breaking pattern". Plenary meetings may be invaded by fisherman who dump dead fish on the floor. Coverage of the Seattle WTO meeting focused on naked breasts. Immolation has been used by monks and others. Suicide bombing may be seen in this light. It is in this respect that the "ticking bomb" scenario has been so effectively used as a justification of torture – breaking the conventional pattern of opposition to it. Curiously the "ticking bomb" scenario, as a form of invocation of the Precautionary Principle, has not however worked in the case of crises such as population and climate – to which it has been applied.

Somehow scenarios fail to "focus" – using the optical metaphor again – the urgency which some believe such crises merit. This phenomenon has been considered separately in relation to the challenge of psychoactive engagement with values and the necessary configuration of "focusing" elements.

Polysensorial Pattern-breaking

Scenario-building is, as stressed above, primarily an "armchair" activity with a degree of similarity to spectators watching a drama – but with a measured degree of participatory involvement, as in modern experimental theatre. It is indeed a vision-biased process that is sensitive to comfort zones. It is appropriate to note that it is another sense that is used in the event of a real emergency when immediate action is required to break conventional pattern, namely a siren. This is typically of a kind to oblige people to act and evacuate the theatre.

An earlier exploration challenged the vision-bias of strategic thinking, notably as evident in scenario development (Judge, 1993a). This highlighted significant issues for futurists of short-sightedness, long-sightedness, eye-testing and corrective lenses with respective to any such vision.

Curiously it is now the corporate world that is investing in polysensorial, or "neuromarketing", strategies following recognition that products are inadequately remembered in a highly competitive market through a single sense alone. Product identity

and recognition requires more than vision alone, as may be argued for scenario-building (Judge, 2006). The emphasis is usefully placed on the need for a form of "re-cognition" which may prove relevant to psychoactive engagement in scenarios.

The range of senses may be briefly reviewed from this "perspective", notably as mnemonic triggers in a period when collective memory is much challenged:

- **sight** (scene, scenario): Arguably our civilization has become inured to every form of pain and danger through their being rehearsed daily by the media as entertainment. It is curious, in a world with issues concerned with balance and proportion, that such qualities having notably visual equivalents are not explored using the riches of the array of inter-transformable polyhedra (as indicated above) rather than through a simplistic focus on strategic "pillars", "poles" and "stakes" – with which very little can be effectively constructed.
- **sound** (siren): Curiously, although powerfully used for warnings by sirens, through music sound is more closely associated with pleasure than with pain and continues to play a powerful attractive role. In strategic thinking, metaphorical reference continues to be made to "harmony" and proposals "sounding right" – without however benefitting from the insights of the theory of harmony.
- **smell**: This sense would seem to be little used metaphorically in strategic development. However it comes fully into play in the assessment of initiatives that are subject to criticism. The financial crisis of 2008 saw many references to the fact that the situation "stank". The metaphor of smell is most typically used to refer to corruption of any kind – and triggers avoidance processes. It is of course a prime attractor in neuromarketing strategies and public relations in general seeks seeks metaphorically to ensure that clients "smell good" or are in "good odour"; it is of primary importance in the mnemonics of product recognition. The question is how this might be ensured in the case of social change strategies.
- **shake**: Again this sense is little used metaphorically in strategic development. However, as is evident during earth tremors and earthquakes, it certainly sharpens the mind. People may however resort to this metaphor when "shaken by a possibility".
- **sensation**: Whilst this sense is not used in conventional strategic development, it is typically used metaphorically by entrepreneurs in referring to initiatives as "feeling right" or "feeling wrong" – possibly expressed as a "gut feeling", or in the case of sensed disaster as a "sinking feeling".
- **style**: Taste may be generically understood as style in its metaphoric use. It is clear that initiatives, and their presentation, are typically approved or condemned because of their "style", whether or not they are considered "tasteful" or "tasteless" (as are many planning proposals). It is intriguing that it is this sense that comes closest to holding the sense of "soullessness" by which some strategic initiatives may be characterized. The European Union initiative has for example been characterized as soulless (cf Joschka Fischer, Pim Fortuyn, Michel Rocard, & John Loneran).

A major issue in considering any combination or configuration of senses to ensure the attractiveness of any initiative is the fact that people have different preferences.

This points to the need to consider how initiatives can be of requisite complexity to offer simultaneously a range of attractors. An area with an adequate variety of "restaurants" metaphorically clarifies the challenge faced by any effort to promote a particular social change initiative which, if inappropriately conceived, might appear to be offering but one kind of "restaurant" – alienating other potential "diners".

Virtuality as the Ultimate Illusion?

It is of course the case that advances in communication technology are offering increasing degrees of access to a "virtual world" – irrespective of the challenges of the "real world". Those weary of the latter may pursue meaningful scenarios in cyberspace, as in the case of Second Life and its analogues (Active Worlds, Google Lively, etc.). Presumably, at some stage, avatars may be able to pass from one such world to another with appropriate electronic "passports" – within a universe of alternative worlds. Constraints on scenario building and implementation are necessarily much reduced in such contexts. Clearly the environment meets the challenge of an adequate range of "restaurants".

Such "worlds" may be assumed to be of trivial significance to the challenges of the "real world". However it is vital to remember that they may be engaging the attention of increasing numbers of young people alienated by the strategic initiatives that they are enjoined to take "seriously" by their elders – who have invested so successfully in ensuring the currently disastrous condition of the planet. One possibility is to consider ways to marry real and virtual potentials.

Much more serious, however, is the development of the Joint Simulation System initiated in 1995 (Hollenbach & Alexander, 1997; Pugh & Johnson, 1995). This has seemingly now morphed, via the Total Information Awareness program, into the Sentient World Simulation (SWS) and will be a "synthetic mirror of the real world with automated continuous calibration with respect to current real-world information" with a node representing "every man, woman and child" – presumably including those responsible for the SWS itself. Regrettably, as might be expected, this is being undertaken entirely in the interests of a US strategic defence strategy on behalf of the US Department of Defense (Baard, 2007).

Understandably SWS will necessarily acquire a bias of defensiveness, as argued with respect to ECHELON with which SWS would presumably be functionally integrated. Of interest is how it might be integrated with:

- the strategic methodology of a recent study by the RAND Corporation's National Security Division (Davis, Bankes, & Egner, 2007).
- the recognition of the possibilities of "crowdsourcing", community-based design or distributed participatory design

Especially with respect to global strategic development, a fashionable phrase such as "crowdsourcing" – as derived from "outsourcing" – suggests a degree of selective exploitation that shares characteristics with the traditional exploitation of developing countries. There are challenges to the viability of such approaches that merit recognition.

Such concerns are of great relevance to the hopes expressed for electronic democracy, notably in relation to some new form of world government. How indeed might scenarios get built in such contexts and how might people be expected to buy into them? What is to be done with those who do not?

In such respects major learnings are to be derived from the pioneering explorations of *Limits to Growth*, as promoted by the Club of Rome from 1972. Especially interesting is the manner in which efforts to analyze the evolution of the world problematique from that time have themselves been undermined in an academic context. As shown by Turner (2007), the original study provoked many criticisms which falsely stated its conclusions in order to discredit it. Despite the repeated substantiation of its conclusions, including warnings of overshoot and collapse, recommendations of fundamental changes of policy and behaviour for sustainability have not been taken up. One of its principal areas of focus was population.

Game-playing and Facilitation

The use of game-playing, notably management and strategic games, has long had a close relationship to some forms of scenario-building. Arguably it provides a greater degree of "hands-on" engagement with the constraints of the system. Typically however it tends to be used in intra-systemic situations and avoids the disagreeable challenges of multi-systemic situations that reflect the larger reality.

There are two major issues with respect to the levels of engagement that are possible with such games:

- strategic decision-makers of any standing (if only in their own estimation) do not play such games. Sensitivity may be further exacerbated by cultural issues. Such people are more likely to play virtual games anonymously (and with their children).
- facilitators, with their particular process "models", have the greatest difficulty in designing themselves out of the process and therefore are readily perceived as seeking to occupy what might be understood as a surrogate chairperson role – for which they have not been mandated. Facilitators also play games. These difficulties may be further exacerbated by the unacknowledged, unconscious power and identity needs of facilitators and an inability to give conscious consideration to them.

Setting such issues aside, there is a case for reflecting on a legislative analogue to Second Life – perhaps "Legislative Life". Such reflection is specially appropriate in a period (the financial crisis of 2008) when attention has been drawn to the artificiality of the daily dynamics of the financial system in contrast with those of the "real world". Reflection might also be justified by the degree of disconnection between the endless international conferences (and summits) and the "real world" with which they seemingly have the greatest difficulty in engaging -- despite its agonizing emergencies.

Would a "Legislative Life", in which elected representatives could engage anonymously, allow scenarios to be usefully explored through games – bypassing the above constraints? There might even be the possibility, for some issues, of enacting consen-

sual outcomes as real world legislation. A form of precedent has already been set with the transferability of funds from Second Life to the real world – to the point of raising the interest of the latter's tax authorities.

As discussed previously (Judge, 2003), the science fiction explorations of game-playing by Hermann Hesse (1943) with respect to the realm of Castalia, and by M. A. Foster (1977), both point to intriguing possibilities. The "game" in the latter case is based on a more intricate version of Conway's *Game of Life*. A comparison is made in that discussion with the games played for strategic purposes by two alternative communities, the Federation of Damanhur (in Italy) and the Findhorn Foundation (in Scotland).

Seizing the Moment

It is one thing to meander linearly through the issues, as above, and another to enable some form of "cognitive fusion" as required in the integration of information for decision-making by fighter pilots in the moment. The modalities of such an urgent possibility have been explored in the light of the conceptual challenges of nuclear fusion on which so much hope is placed. Unfortunately the international capacity to engage in such possibilities is as problematic as the decades-long pursuit of the "political will to change"

Potentially more realistic, in the light of the Club of Rome's articulation of "problematique" and "resolutique", is to match these two with "imaginatique" and "irresolutique". Here "imaginatique" refers to the dynamics of creative imagination to which many naturally respond, whereas "irresolutique" refers to the game-playing dynamics in institutional environments that systematically undermines the initiatives of the "resolutique" in response to the "problematique". These may be configured as a diagram consistent with the dynamics of complexity (Judge, 2007a). The fundamental challenge is then framed mnemonically (Judge, 2007b).

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Questioning Scenarios

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I am often wrong, but never in doubt'
Sam Chisholm¹

It's hard to be sure if Graham Molitor had his tongue firmly in his cheek when he offered his piece 'Scenarios – worth the effort?' (Molitor, 2009) After all, a doyen of the futures field must *surely* embrace the wonder of scenarios as an enormously useful tool for considering the future, yet his piece had enough to suggest that he was serious in suggesting that scenarios (by and large) aren't that helpful.

Let me quickly address elements of Molitor's piece: On one hand Scenarios are an 'idle exercise' (Molitor, 2009, p.1) yet are also stated to be (as 'birds of a feather') (Molitor, 2009, p.2) '...ways of targeting and developing useful intellectual conclusions.' (Molitor, 2009, p.2) Scenarios are (merely?) a 'time consuming parlour game' (Molitor, 2009, p.1) reinforcing what participants already knew, yet also being a 'time proven' (Molitor, 2009, p.4) technique drawing on 'the collective wisdom and viewpoints derived from drawing together hordes of gifted experts to cast light on what lays ahead and how to contend with it.' (Molitor, 2009, p.4)

In exploring some of the many ways in which people get scenarios wrong, Molitor warns that the 'intellectual jousting' (Molitor, 2009, p.9) element of Scenarios may result in a state where 'Outputs also may become excessively conjectural, hypothetical, tangential, non germane and unrealistic' (Molitor, 2009, p.9) – in other words disconnected from reality or usefulness to decision making. Much like an organisation audaciously focusing on the next thousand years, perhaps? (Molitor, 2009, p.8)

Molitor is correct when he suggests there are many ways to make scenario efforts less useful, that there are many labels for essentially the same process and that many future possibilities can be traced back decades or even millennia (more so perhaps in hindsight?). It ought not be surprising coming from the President of an organisation that specialises in 'n. estimate or conjecture beforehand², that a potential limiting bias is highlighted in his suggestion that 'there is no one way of addressing matters when the "future of" is under consideration' (Molitor, 2009, p.7) – the limiting bias lies in the choice of the word 'when', a word weighed heavily on the notion of predictability.

Is Molitor blinded by his personal bias towards prediction or is he acting as agent provocateur? I'm happy to be provoked and choose to start by suggesting that the most effective futures tool available to our species cannot be found in technology, does not require tomes to explain, is easily transferable across cultures, languages, values and times: it is 'the Question'.

The universal futures tool is the Question and Scenarios are nothing more than an elaborate questioning technique. They exist to assist us to discover 'doubt' in our own thinking and overcome what De Bono described as 'the Intelligence Trap'³

We know that some people are better at asking questions than others – useful, well timed, connected. It is through questions that we learn, that we move forward and assess whether our assumptions are valid and our expectations realistic. In questioning our assumptions, we question our understanding of the past – this is the realm of trend spotters and macro historians. Trends are nothing more than a pattern of historical behaviour which is why I tell clients that there is no such thing as a future trend – all trends are historically derived and subject to change. Macrohistorical perspectives⁴ are an assessment of longer range patterns and potentially providing medians of various evolutionary changes that by design, give us more comfort in an expected behaviour continuing into the future. In questioning our expectations we challenge our perceptions of the future. Well thought out questions help us refine our expectations for our futures.

Just as there are less and more useful questions, there are less and more useful scenario approaches. To work out what type of scenario approach (questioning technique) to use requires that you first identify the intended purpose – the expected/desired outcome, for once that is understood, approaching the scenario process ought to be more effectively defined.

The mismatch of scenario methods to client needs is one of biggest failings of utilising the scenario approach. Futurists enamoured with one approach have led clients and society to believe that 'our preferred method' is right for the client, despite obvious mismatches such that when another futurist suggests 'scenarios' as a possible tool for exploring the future, an all too common answer is 'we've already tried them'.

Molitor is right to question the value of scenarios as a methodology given our lack of understanding of successes in their application, though perhaps the issue is less over the method itself and more over the poor selection of process (poor choice of question). I offer a short overview of scenario types (ways to question) as well as providing a couple of brief successful scenario case studies.

Questioning Scenarios

I usually receive a call a week from someone thinking about using scenarios, yet guide less than one in ten through a scenario process. Many have unrealistic expectations, hold invalid assumptions and some, despite my suggestion that scenarios will be unlikely to deliver what they hope to achieve, will do them anyway. Just not using my expertise. Table 1⁵ lists 'Scenario Types' explaining process options – ratings (out of five) suggest 'Benefit' or 'resource commitment' levels, and a mismatch of process to client needs means asking the wrong question and a higher probability of a poor outcome. Briefly explained: 'Coffee Cup' is a scenario generated by a couple of people in about 30 mins over a 'cup of coffee' where they consider 'the future of 'x'; 'Incremental' scenarios typically have predetermined preferred cores with 'slightly better' and 'slightly worse' alternatives offered for show - favoured by Government agencies suggesting true depth has been undertaken; 'Inductive' requires a starting point and a

question 'what might emerge if 'X' happened?' Participants need only provide additional 'x' events for the scenario to continue unfolding; 'Off the Shelf' uses pre-designed futures tasking an organisation to assess how it would respond in the circumstances; 'Normative' are 'Big Visions' that demand an explanation of how the world looks (and developed) given achievement of the vision; 'Accelerated Scenario process'(ASp) attempts to combine Coffee Cup speed with Deep Scenarios depth – based on a deductive model it is targeted specifically at Corporate and Government Departments where 'pragmatic outcomes' are mandatory; 'Deep Scenarios' are high cost, time and resource commitment, extensively researched, tested and 'grounded' and best suited to larger (pan-national) assessments.

Table 1.
Scenario types

Type Aspect	Time Demands	Costs	Depth of Inquiry	Contingency Planning	Team Building & Creativity	Strategic Value
Coffee Cup Scenarios	.5	.5	.5	.5	3	.5
Incremental	1.5	2	1	1	1	1
Inductive	1.5	1	1.5	1.5	3	1
Off the Shelf	1.5	1	1	1.5	2.5	2
Normative	2	2	1	0	1.5	2.5
Deductive	2.5	2	2	2	1.5	3
ASp	3	2	3.5	2	3	3.5
Deep Scenarios	5	5	4.5	4	2	5

The key take away from this table is that when we talk 'scenarios' we would benefit greatly from identifying specifically, what 'version' of scenarios we mean and given our desired outcomes, which would be best suited

New Success Stories

Shell's scenario success has arguably created today's challenges for other scenario success stories. The Shell scenarios created enormous competitive advantage and in profit making environments, competitive advantage via intellectual property (generated using methods like scenarios) is something to keep tightly held. Stories of success are few and far between because 'letting people in on the secret' is a challenge and also due to facilitators choosing '*poorly matched to client needs*' scenario methods that by default create poor outcomes. What follows are prece overviews of two additional successes – they are not the only ones.

'Lifting the veil of current success'

The Fosters Group⁶ is widely known around the world as one of the largest makers of beers and assorted other beverages. In recent years it also attempted to become one of the largest makers of wine. In 2003 Steve Tighe (now an independent futurist)⁷ was then the recently appointed Foresight Manager, a new role tasked with helping Fosters consider its future and we worked together on a range of issues using various techniques. One of the biggest projects was a scenario exercise titled *'the Future of*

Beer' bringing Foster's staff together to question in some detail, the ongoing existence of its most successful product.

Using a deductive based method informed by extensive environmental scanning prior to the workshops, participants were asked to consider whether beer in its current form was likely to play a product role in society in the future, the possible events that might disrupt that role and whether there might be alternatives that could be created, or that exist now but are being ignored by the company.

The scanning data was built around my Very STEEP (VSTEEP) – model⁸ which specifically adds the 'Value Systems' framework to the other components, such that the 'human-ness' implications became explicit. We considered health issues, social costs related to health supply, transportation of products, access to key ingredients, legislative changes and more. Much of the data was readily available to the company though they had a track record of using media monitoring and quantitative research (both historical approaches) to informing their future.

The process took about 8 weeks, though the engagement was for a variety of reasons, sporadic and interrupted more often than not as a result of outsiders to the process demanding 'real work' be attended to – the realm of the Operational Manager holding sway over the Strategic process. Despite the interruptions the results were excellent with a key 'a-ha' moment occurring through the discovery that their biggest product offering in its core product area was at serious risk, that neither they nor their main rival in the industry appeared to be aware of that threat, and that a continuation and reliance upon the success it already had, would render the company vulnerable.

Within three months they redirected \$80m to creating a new product, had pushed another product to great success⁹, and had uncovered a new product category expected by Fosters to grow to around \$400m inside a decade. Playing catch-up, Foster's main rival released a competitive offering almost 12 months later but still fails to make significant headway. Andrew Fairlam, senior Innovation specialist with Fosters stated that *'the scenario process provided insights to the innovation team better than any other brief we've worked with'* and Steve Tighe explains: "The success of the Foster's beer scenarios can be measured by the internal re-perceiving that occurred around the potential for growth of the industry's most competitive segment. As a result of this new way of seeing, existing paradigms were challenged, and increased resources and brand development were targeted at this segment."

That Foster's senior managers allowed the scenario process was one thing – to then actively allow the pursuit of the opportunity is where they derived significant competitive advantage – not all organisations would have acted so quickly.

'Confirming & discovery'

Scenario success at Fosters saw them apply the approach in an attempt to win a major customer - the Panthers Entertainment Group (PEG)¹⁰. PEG is the largest seller of alcohol in Australia, has leisure and entertainment sites across the country and a customer profile aged between 18 and 90, male or female.

Introduced to the CEO Glenn Matthews, by Steve Tighe in 2006, I was asked to lead the PEG senior management team on an exploration of society a decade from now, to consider the pressures that sectors of society would likely experience and how PEG could satisfy needs of its members via its venues and service offerings.¹¹

The process from start to finish took around ten weeks, though we used technology and research to minimise the face to face time. The ASp was used and a handful of industry connected outsiders were invited to join the senior team to provide additional insights and to provoke thinking. All scenario stories generated offered interesting insights and some clear leverage points consistent across each scenario along with a few significant 'wildcard' events.

Glenn Matthews stated that though the scenario process didn't uncover any significant event that the PEG management team hadn't already considered, the process provided a clearer understanding that the strategic path they were interested in pursuing, had significant viability. The scenario helped turn their initial thoughts into a full strategic project. Within a few months of the scenario process, PEG had secured a financial partnership for redevelopment of the club's facilities valued at around \$170million¹². A side benefit to Fosters was winning a significant supply contract from PEG for another product category¹³.

'Teenagers and academics have one thing in common – they're both too smart to be told anything'¹⁴

Good questions help us overcome our arrogance or ignorance about the future, avoiding the hubris of all knowing or the 'too smart to be told' mindset that often gets in the way of seeking alternative or clearer paths forward. Scenarios are one way to question the future. The cases cited above are not isolated experiences of effectiveness and success generation. Scenarios MUST be matched appropriately to the needs of the client and their expected outcomes – off the shelf and cookie cutter approaches rarely 'deliver' on the potential. Whether the need is new insights, removing organisational blinkers, better customer relationships, team building or intellectual navel gazing, the need and process must be matched accordingly. If not they'll continue to be seen as 'predicting' methodologies, and not for their greatest potential – a search for understanding.

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Notes

1. Quote attributed to Chisholm by, and taken from, the Herald Sun Newspaper, 29th of November 2008. Sam Chisholm was for a number of years a senior executive connected to billionaire Kerry Packer's PBL Broadcasting, up until recently a dominant force in

many areas of Television and Magazines throughout Australia and elsewhere. Chisholm has been rated by many as one of the most effective senior managers in Australian media interests.

2. Oxford Dictionary, Oxford University Press, 2006.
3. Edward De Bono is arguably best known by the wider public audience for his Six Thinking Hats methodology, a process that structures different modes of thinking as deliberate ways of focusing on the topic. Whilst a Professor at Cambridge University studying thousands of people across societies, cultures ages and incomes, in defining the 'Intelligence Trap' he concluded that 'The more intelligent a person is, the less likely they are to be a good thinker'.
4. I would refer the reader to Jared Diamond's '*Collapse – how societies choose to fail or succeed*', Viking Press 2005 and '*The Rise and fall of the third chimpanzee*', Radius 1991, along with Joseph Tainter's '*The Collapse of Complex Societies*' Cambridge University Press 1991 for Macro-historical perspectives that are particularly insightful.
5. The full version of this table, along with overviews of each of the methods can be freely downloaded from my website at www.lufg.com.au in the free articles and papers section or via http://www.lookingupfeelinggood.com/uploads/Which_Scenario_Process_is_Right_for_you.pdf
6. An overview of the Foster's Group can be found at www.fosters.com.au
7. More can be found out about Steve at www.chasingsunrises.com.au
8. The Very STEEP (VSTEED) model extends the widely adopted STEEP framework (Social, Technological, Economic, Environmental & Political) for Environmental Scanning. Other frameworks include PEST and PESTLE and even the generational typology markers 'Boomers', 'Gen X', 'Gen Y' are category framing process for seeking and assigning data. The VSTEED model requires a 'crash course' in the Spiral Dynamics (Human Value Systems) model developed by Don Beck and Chris Cowan in extending the work of Prof. Clare W Graves (see www.clarewgraves.com) and assists the scanning analyst to consider the way in which particular Value Systems would conceive of and approach an 'issue' or item' sited within one of the other categories. In particular it helps the analyst ensure that the 'Political' or 'Social' frameworks are seen as human constructs (actions) and not noted as being 'things' (nouns) that cannot be changed. I highly recommend all organisations conducting ES to include the V component.
9. Information about the product 'Pure Blonde' can be found on the Foster's website. Retrieved December 4th, 2008, from <http://www.fosters.com.au/enjoy/beer/pureblonde.htm> . Foster's states: '*Pure Blonde - the first beer in Australia to be marketed as low-carbohydrate - is full-strength and great tasting, with 70% less carbohydrates than a regular beer. Now the fastest growing packaged regular beer brand in Australia, Pure Blonde is proving to be a big hit with beer lovers, with 94% of people who try Pure Blonde buying it again!*'. The key outcome of the Foster's Beer Scenarios was the revised forecast for the Midstrength beer category which was increased **significantly** following the exercise.
10. You can assess the operations of the Panther's Entertainment Group at <http://www.panthers.com.au/>
11. The Panthers process used the Accelerated Scenarios process (ASp) combined with testing existing operational strategies against potential for change, along with a thorough

Backcasting process that provided a perceived linkage between the scenarios and the organisation's Strategic Planning process.

12. Panthers Portal (2006, 22nd December) ING Real Estate News Retrieved November 25th, 2008, from <http://www.panthers.com.au/default.aspx?id=90&ArticleID=323> and was widely reported in all mainstream media, including the National Broadcaster (2007, 7th May) Panthers-ING Agreement paves way for clubs' revamp, *ABC News* Retrieved November 26th, 2008, from <http://www.abc.net.au/news/stories/2007/05/07/1915992.htm>
13. Foster's secured the 'Ready to Drink' contract that included supplying its core 'Cougar Bourbon' brand for all PEG venues.
14. This was taken from one of my slides at a presentation made to the UNESCO sponsored 'Committing Universities to Sustainable Development' in Graz, Austria in 2005 (see my presentation 'Sustainability – why bother?' a phrase in itself now gaining traction available at www.kfunigraz.ac.at/sustainability/presentation/A1%20Barber.ppt). I coined the 'quote' based on my experience of dealing with one group of senior leaders at a University (all intelligent people who would not countenance any possibility that they didn't already know everything there is to know about the future of their industry), and likened it to teenagers convinced they know more than their parents who try to offer them a version of guidance – the similarities between the two groups are unnerving. I now use the 'quote' and simply change the 'academics' label with others suited to the group – 'senior managers', 'Doctors', 'Board members' and so on. The phrase has also led me to discuss what I refer to as the 'Arrogance of Ignorance' and 'Bias of Beliefs' hurdles to considering the future.

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Reinventing the Wheel: Common Sense and Responsibility in Futures Studies

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Very few times have I liked so much an article I have disagreed with so deeply. Molitor's paper poses a puzzling combination of much needed common sense with, what I believe to be, misleading inaccuracies.

The part that I have really enjoyed is that in which we can benefit from Molitor extensive experience regarding what works and what doesn't. I would even say that all those lines in which he stresses the fact that there is very little novelty under the sun should be a required reading for futurists (or wannabe ones), because our discipline is plagued with the cyclical reinvention of the wheel. I also appreciated the criticism about what has been the real impact of the discipline, a reality check that we should keep in mind. Yet I'm not so sure about the implicit bitterness in it (although I'm eager to accept that this may not be Molitor's intention and it is just my reading of it).

Assumptions around Futures Studies

But, and just for the sake of argument, let us assume that there may be some disappointment. If that is the case, I would argue that such a feeling is a side effect of an implicit assumption vastly extended within the field: that futures studies (and –by extension- futurists) have a greater responsibility towards the future than any other discipline, activity or profession. I have argued elsewhere (Serra, 2006) that this assumption, i.e. that futures has some sort of superior authority over future matters than other disciplines, or more to the point, that it is the authoritative discipline on future questions, it is a sort of discipline-centrism or, if you want, an epistemology-centrism. If that were true, it would be sensible to trust future studies to manage the future; even more, futurists should have the first option when facing future questions. If all this were true, it would be logical that futures studies and futurists would have a greater responsibility towards the future. But I do not believe that this is so. Mostly, because I do not think that futures studies really deals with the future, the way I see it, futures helps to manage the uncertainty contained in present decisions; this is particularly clear in the European tradition, and yes, that implies it studies the future quite as much as many other disciplines. I would contest that futures studies cannot claim expertise on the future above other disciplines, just a particular approach to it, but one that can be especially useful when taking decisions in the present.

Anyway, even if we concede that futures should have had a greater impact, I would agree with Molitor that its concerning tendency to reinvent the wheel cyclically is one of the main causes of lacking greater recognition. It is hard to be taken seriously by the academic community, by decision makers or by society at large, when we are unable to reach a minimum agreement among ourselves or, even worse, when very few practitioners acknowledge (or are aware) of the richness and history within the field. That is why I am also so upset with the article; Molitor seems to fall in this same mistake.

For instance, Molitor uses scenario in a quite restricted sense. To begin with, the most common denotation of scenario is as one of the possible outputs of a futures studies project. But in Molitor's paper the main sense, if not only sense, is as a method, which is also correct, but it takes me to a second divergence: Molitor's depiction of scenario as a method is, again, quite constricted as he seems to limit the category to methods that include participatory processes; In this regard Molitor claims to follow the work of Dennis List (2005) "Network Mapping: The Development of a Methodology for Social Inquiry" which, according to Molitor covers *scenarios in all their varied forms and permutations*. Then, it is even more shocking that there is no mention of the French approach to scenarios: *La demarche prospective*. In the French school scenarios are indeed a method, and a very rigorous and prolix one, but with no particular emphasis on open participation. Arrived at this point the question to find out is if this is just a mistake or an intentional omission. If it is an oversight, it poses some shadows on the thoroughness of List's work and on Molitor's experience as well; if the slip was on purpose, then we should wonder why.

My guess is that Molitor wanted to be sure that his main point got through and hence he decided to focus only on those facts that supported it while side-lining the others. That would explain, for instance, his attempt to consider any breakthrough as a simple incremental increase; he is right that change may be quantitative in its evolution but we cannot deny that its consequences can be qualitative, if nothing else ecology has widely prove it. A second example, I have found quite unfair to compare futurists with astrologers (in the Kublai Khan court) if nothing else because futures does not do predictions, even less prophecies; but even if we could accept that the astrologer engaged in strategic conversation, then we have to conclude that such an activity would hardly be astrology. Finally, his insistence in mixing futures studies and strategy could denote a lack of conceptual finesse that I would have never expected in someone that has been active in the field for more than 50 years. It is true that the hype of the time is "strategic foresight" but it would only hurt both disciplines not to keep their specificity: futures relates to alternatives and consequences of present decisions, while strategy works with opportunities and pitfalls, they are very complementary but they are not the same and should not be mixed.

All and all, these inaccuracies harm the main point of the paper. After all, how can futures gain credibility if its own practitioners are the first ones not to be rigorous in the use of its concepts? I would say that the message is powerful enough and there was no need to force some of the arguments in such a way.

Scenarios Are Worth The Effort

And just for the record, scenarios are worth the effort. If we think about it, there have been some achievements. Nowadays, most government would not engage in a relevant public policy without some sort of plan; that is, action is based on an explicit prevision of what is expected. I cannot speak for other countries but this is a quantum leap in mine (Spain) where action was usually based on intentions and resulted, quite often, in some sort of disaster. A second point worth noting is that scenarios have become a frequent term in common language, it is true that most of the time it is used incorrectly, but they introduce some sense of alternative development nevertheless. The truth is that the challenges for futures studies and futurists are enormous, we are confronting formidable obstacles: our own brain, ill suited to deal with change and novelty; our social and cultural systems, for which change is tantamount to calamity and last but not least, our political systems (particularly democratic ones) that are structurally entangled with short term horizons. It is no wonder that futures have barely made a scratch on them, but scenarios have.

However, the hope is that once people start thinking (and planning) in terms of alternative scenarios there is no turning back because it makes human agency relevant, and we all like to have something to say about the (or our) future.

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Scenarios: Process and Outcome

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Graham Molitor's article : "Scenarios: Worth the Effort?" is a profound examination of scenarios and their use in businesses and organizations. Molitor has discussed in his article various aspects of scenario process from the philosophical level to the practical. Even though Molitor is skeptical about the usefulness of scenarios, I personally think that scenarios are valuable tools for futures thinking in organizations of many kinds.

I see that scenarios are our humble way to look at the futures. By using the scenario technique, we admit that we do not know what is happening in the futures (which is so true!). We admit that we have to prepared for various situations when the time passes. In one sentence: scenarios help us to be flexible enough to cope with various situations in the future.

Scenarios Help Us to Be Prepared For Futures and Innovate the Futures

In fact, I see that scenarios, as many futures techniques (I prefer not to talk about forecasting techniques here) have two purposes. Firstly, they'll help us **to be prepared for alternative futures** and they question our persistent beliefs about the futures. In my view scenarios have nothing to do with forecasting – they do not try to find the right guess of what is the future going to be. On the contrary, the give immediately range of possibilities of the future.

Secondly, futures techniques, such as scenarios, help us also to **innovate the futures** possible to us by helping to break our mental models and by that, at the best, to encourage us to create something new. For example by creating various macro scenarios an organizations could start to innovate services or products that would suit the best for various world situations. The best of the product/service ideas would fit a wide range of future scenarios.

Scenarios Help Organizations to Test the Strategy

Scenarios are effective tools to test the strategies of organizations in various environments. A colleague of mine that has worked with scenario technique for years commented that scenarios are like wind tunnels for strategy. Another car related metaphor could be test driving. That is what car manufactures are doing when designing cars: they take the prototype to various environments and test how the car is working in these conditions. The car should be coping as well with - 20 degrees centigrade as +30 degrees. That is how strategies should also work: they should be functional for

example in various economic situations. If this kind of functionality is not achievable the flexibility of the strategy is called into question. Scenarios are in the position to help organizations to think through these various business environment where their strategies should be functional. They also help to test the flexibility of strategies.

Utility of Scenarios

Are scenarios useful? I think that in scenario work there are two dimensions, which create the usefulness for practical strategy work. These dimensions are the process and the outcome. The process, the phase of making the scenarios leads us to seek for information about the future, weak signals, trends, wild cards etc. and think about the possibilities of combinations of these elements. The process of information seeking and processing is surely going to be useful to any organization. Also, scenarios are able to break the mental models of organizations and enhance what I have named "organizational futures learning".

The end result, scenarios or the views of the future world are of course useful for communicating the possibilities of the futures to the stakeholders. But they have even more valuable benefit: they create other futures processes. These scenarios can be used for example by other divisions of an organization for various purposes: product or service conceptualizing, to name few.

Scenarios are for challenging the organizations collective view of what is going to happen in the future. Their purpose is to challenge us - to be prepared for events and situations that break our expected futures. In my opinion creating scenarios in an organizational context is valuable and truly worth the time. However, one reminder: Scenario exercises should be taken with seriousness, which means time, resources and expertise need to be spent. Only via this the utility of the scenarios is achieved.

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Who will Engage in Scenario Planning Ten to Twenty Years from Now?

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I'd like to take the title of Graham Molitor's article, and change it slightly to read 'Scenarios: are they worth the effort, now?' In posing the question whether scenarios are worth the effort, Molitor replies, "Not as much as scenario-using futurists like to think." But what about the people who will engage in scenario planning exercises ten to twenty years into the future? Future decision-makers will have one thing in common that will set them apart from today's groups. They will have grown up playing with scenarios in the various shared worlds of computer, video and online games.

Shared world stories and games are defined as stories written by different hands but sharing a setting. Often the setting is given to the participants, but increasingly world and reality creation is being placed in the hands of writers and players. Games such as LittleBigPlanet give players the tools for on-line world creation. The multiplayer on-line role-playing game World of Warcraft has more 11 million players worldwide. Players collaborate with each other and develop tactical skills in play, though in worlds largely structured for them.

I am prompted to comment on Molitor's article following a conversation with a video-games creator who says that in ten to twenty years time, the leaders of most countries in the world will have something new in common. They will have grown up playing "shooter" games. I was rather alarmed at this. Shooter games? Will that make them more trigger-happy than current world leaders? Leaving that speculation to one side, I think it is worth pursuing the intersection of the real and the virtual worlds that will be part of our common future. Future scenario-creating exercises may well take place in blended realities of digital and physical environments, where people meet and communicate in new ways.¹ The 'alternative reality' game designer Jane McGonigal applies games to the real world in projects such as Superstruct (2008) about global extinction, and World without Oil (2007) a collaborative simulation of global oil shortage.² Her games involve tens of thousands of people.

As someone who herself doesn't play these collaborative or competitive on-line games, but has observed members of her family at play and at work in the industry, I comment from the outside. But it seems reasonable to suppose decision-makers in the future will bring to any round-table discussions a facility in scenario elaboration and development learned from childhood through the medium of play. Decision-makers will bring with them a different kind of legacy from the past, one that may both help and hinder, when they engage in futures scenarios.

How it might help is that future practical-minded senior managers may come to the discussion more familiar with scenario creation? How it might hinder is that they may call on clichéd shared legacies from popular culture? Writer and futurist Ken MacLeod says: 'Most of us have default images of the future that come from Star Trek, or 2001 or 1984 or Dr Who or disaster movies or computer games.'³ Futurist Jamais Cascio cites the legacy futures in business from old business strategies and plans, legacy futures in politics from old budgets and forecasts, and legacy futures in environmentalism from earlier bits of analysis.⁴ The notion of 'legacy futures' has its origins in the concept of legacy code in computer programming.

The work of Jane McGonigal for the Institute for the Future takes the scenario workshop and turns it into 'Blended reality crowd-sourcing experiments'. A feature of her games is that they engage large groups of people in forming collaborative communities, 'crowd-sourcing'. In one recent experiment she 'crowd-sourced' five questions about the future in 2019, via Twitter, blogs, email, and SMS, and collated over 500 replies received within 24 hours. There is nothing new in collating responses to questions about the future, but the technologies used to reach out to a potentially far larger group of people show promise for what McGonigal calls the newly emerging field of collective intelligence.

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If it Works, Use it: Symposium Response by Graham Molitor

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Expressing adverse attitudes towards "fact finding" games such as scenarios, I never anticipated that my comments would engender ire among fellow practitioners. After all, everybody has their own style. I hasten to reassert that creative-minded futurists may find this approach a useful technique. An inveterate researcher and dedicated futurist, my best recommendation is: "If it works, use it."

For "pick and shovel" type researchers (such as me) there's nothing like "discussing" targets of concern or interest with as large (and useful) a group of on-point experts. The collective inputs and perspectives from knowledgeable participants, more often than not, yield sound judgment and surmise about impending developments.

Now, let me acknowledge that engaging experts face-to-face is easy to recommend and encourage. Rarely, however, is it directly available to most researchers. "Conversations" with inaccessible experts don't have to be (indeed, rarely are) face-to-face. There are other ways of tapping expert opinion. Secondary sources representing expert inputs are readily available. A vast range of scientific and technical literature – not infrequently to be found in limited circulation and obscure journals – chronicle countless expert thoughts and ruminations of things yet to come. Such input suffices for face-to-face or other personal exchanges between information-seeker and information-giver.

Beyond expert opinion are many undercurrents and patterns of change revealing and reinforcing the trend, direction and timing of impending developments. Coalescing such "change-driving trendlines" reveals numerous forces of change that reveal and corroborate impending developments. The forecasting model I pieced together, element by element over nearly 50 years of research, entails some 22-35 different quantitative trendlines. Plotting and overlaying these trendlines reveal impending pressures that prompt outcomes decades or even longer into the future.

That model, based on countless research projects, revealed and reinforced that matters "on the brink of 'imminent' change" actually tend to develop and emerge over very long periods of time. Advances in every discrete element in the array of forces driving change unfold incrementally over time. As a result, combinations of select timelines that pressure and prompt ongoing development prove effective in projecting change.

In pursuit of futures studies, I relied upon my 25,000 volume library of books on or about the future and a roomful of filing cabinets packed with previous papers, lectures and clipped articles.

The problem with such a massive resource was mining it. It simply took time to recall which author(s) to consult, let alone where exactly to find the passage(s) or material(s) being sought. That approach represents the old way of tackling forecasting research. It still works.

Fortunately, research methods and capabilities have drastically changed for the better. Currently, researchers have access to a global data base of overwhelmingly voluminous materials. Answers to anything and everything are easily accessible. Global perspectives in all its dimensions and directions are at a researcher's fingertips and keyboard. Efficiently and swiftly accessing and mining this data involves "search engines" that can screen and almost instantaneously pinpoint specifics. Modern communications technologies enormously enhance and speed up research of any kind. Torrents of data can be quickly assembled to sate inquiries.

Researchers, it goes without saying, must be confident and comfortable using methods they find useful. Practitioners simply vary in their approaches to anticipating ongoing and oncoming futures. My comments were not inveighed to discourage relying upon scenario techniques to fill out the voids or probe vital potentials. Decades of experience shared here simply reveal the soul of this researcher. In the scale of evaluating techniques and methodologies, some work better than others. My pessimistic outlook regarding scenarios shouldn't jade or deter those who find that particular technique useful. Many thanks for the fruitful commentaries. On balance, I feel that this dialogue adds to full and fair consideration of a useful forecasting method – precisely the object of professional journals.

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