What Makes Scenario Research Different?

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Introduction

"Portable, communal, simplified, plastic and psyche": five words that describe scenario research. Why use these words? Because scenario research is "activist" research – research that is done by and for people who need to act.

In fact, scenario research is only part of a much larger process of using scenarios to build robust strategies for groups facing uncertain future conditions. In this process there are three principal stages of work:

1. know what the group currently assumes about the future working environment;
2. challenge those assumptions with good research and scenario stories;
3. use the stories to test the group's responses to different futures in order to determine the best strategic options for the group.

One of the reasons scenario exercises have been successful lately is that they have helped organisations learn to manage uncertainty. Scenario research makes an additional contribution by helping people understand the forces that are creating that uncertainty. Research, therefore, is an essential aspect of the organisational learning involved in good scenario exercises and is the concern of this paper.

The thinking here was initially presented in October 1998 to a meeting of Kenyan intellectuals who were attending the first of four scenario-building workshops looking at the future of Kenya. Under the project design, the first two workshops are devoted to the research agenda covering those issues most likely to affect the future of the country. The second two workshops will involve a much larger group of people who will be asked to use the research findings in imagining alternative futures for Kenyan society. Because there are important political overtones to the Kenya Scenarios Project, the project design represents a conscious attempt to include learning in political discussion. The project is thus an innovative political experiment, the outcome of which is still unknown. It is also an experiment in the social dynamics of scenario building, policy-making, and the use of research intelligence in group learning.

The desire to put research at the heart of this scenario project runs counter to the current practice of relying on collaborative group discussions as the primary means to imagine alternative future worlds. In recent years, many of these processes have been extremely successful in altering the terms of debate by helping people accept an uncertain future. However, these discussions have often relied heavily on participants' existing knowledge and prejudice without testing that knowledge with more rigorous intellectual tools. As a result, the novel insights of sound research have only rarely contributed to participants' understanding of what the future might hold. It was against that background that the Kenya Scenarios Project, which was jointed initiated by the Society for International Development in Rome and the Institute of Economic Affairs (IEA) in Nairobi, sought to enlarge the role of research in scenario building.

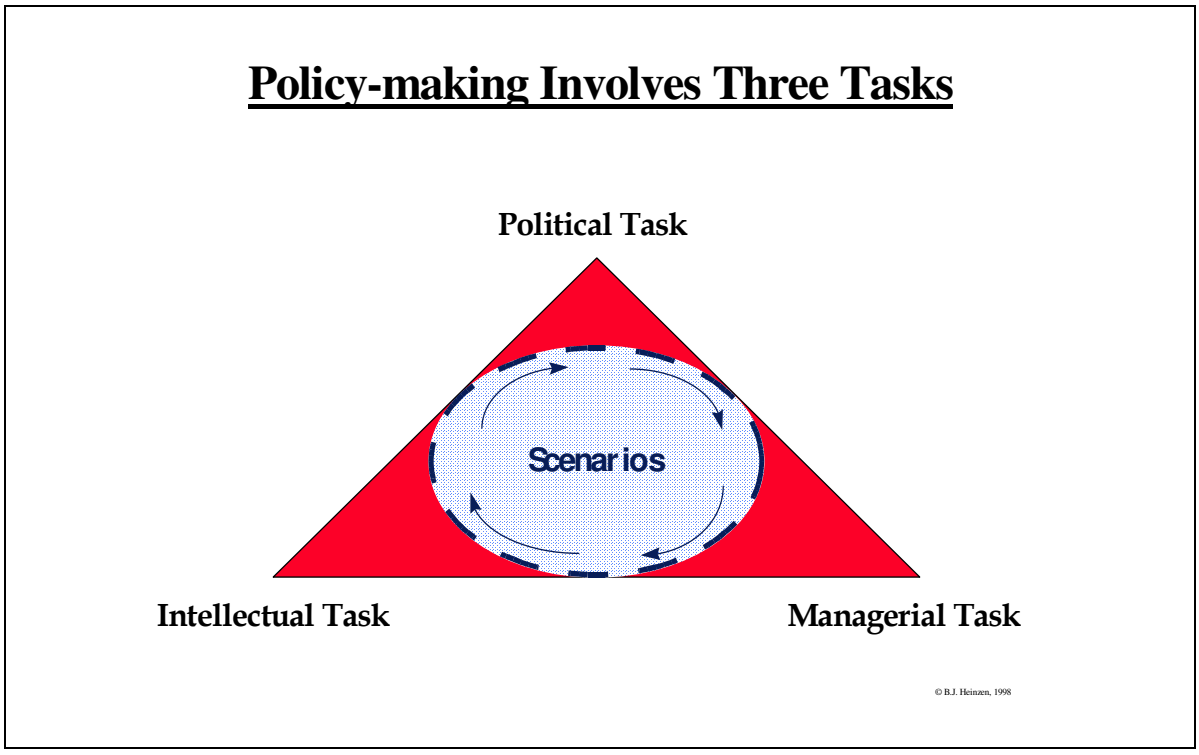
The role of research in the Kenya project is enlarged in two ways: first by the nature of participation in the project. In addition to the secretariat services provided by the IEA, the Kenyan intellectuals will be taking responsibility for doing new thinking and research. Together with the IEA, this group will effectively be acting as a "scenario team". In addition, however, there is

another group of participants who will not be involved in the research directly, but who will be asked to use the research results to construct scenario stories describing possible futures for Kenya. This second group will consist of social, political and business leaders in Kenyan society. They are the first 'principal audience' for the scenario research and the project as a whole. The role of research has thus been enlarged by project's reliance on the core group of researchers. The research role is also being enlarged simply by the fact that additional workshops have been scheduled as "learning workshops", where all participants will be asked to explore the new facts and ideas thrown up by the research process.

This Kenyan structure – of a core research team, a wider principal audience and a mix of learning and scenario-building workshops – is a structure that is implicit in the discussion of scenario research that follows.

Research in the Context of Three Policy-making Tasks

This article, and the presentation on which it is based, is an attempt to explain how and why scenario research is different from other kinds of research. It was written in order to help those people doing the research for the Kenya Scenario Project understand the task they were undertaking. It builds on the central insight that there are three important tasks in policy-making[1] – an intellectual task (conduct good analysis of the issues and what might be done), a political task (agree on the best way forward) and a managerial task (ensure that the agreed policies are implemented). A good scenarios exercise, and good scenarios research, will contribute to the success of each task and the success of the whole.



Scenarios play this role because policy-making is implicitly about the future. We make public policies and business strategies in order to shape the future of our societies and organisations. The implementation of these policies and strategies usually begins in the present, but is carried into the future. Therefore, the effectiveness of our policies depends heavily on the

[1] Corporations tend to use the word "strategy" to describe their long term plans, while public interest organisations, including governments, use the word "policy". Throughout this article these two words will be used interchangeably.

future conditions in which they will be implemented. However, the future is increasingly a complex and uncertain place where conditions can unexpectedly change. This makes it difficult for groups to agree on the best course to follow, even though agreement is required if we are to act effectively as the future unfolds. A clearer shared understanding of what is shaping the future therefore makes it easier to agree on appropriate strategies.

These conditions and this task shape the nature of scenario research. First, the complexity of our times means that the **intellectual** task is inherently interdisciplinary and systemic and needs to rely on both analysis and instinct. Second, the **political** task means that scenario research is a process of collaborative learning in a political context. Third, the **managerial** task means that the research needs to meet the needs of people who act; it is 'activist' research. We begin first with the managerial task.

Activist Research - Contributing to the Managerial Task

One of most important audiences for scenarios and scenario research are the leaders of organisations and societies. These are people who act, who are always busy and always short of time. They rarely have the luxury of being able to think things through slowly and deliberately. Instead, they are people who have learned to think on the fly while rushing from one responsibility to another. They are always in motion, constantly reacting to events around them, struggling to interpret those events well enough to know how to respond. In fact, leaders are like most people in organisations and societies – busy with their own chores with limited time and space to think about wider issues.

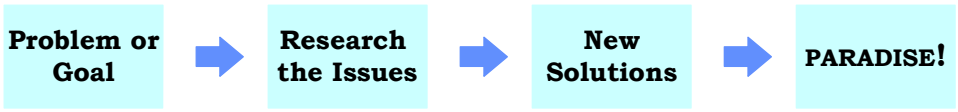
These conditions shape the nature of the research we need to do. In the old research style, there was a confidence that events moved slowly enough that we could first identify a problem, then research the underlying issues, then propose new solutions that would be debated, agreed and implemented. Once the agreed solution was implemented, the problem should have been solved and researchers could move another to another issue. In this style of research, researchers passed their results to decision-makers who passed approved policies along to managers who implemented the policies that had been agreed. It was, and still is, a kind of intellectual assembly line.

A New Research Style

In fact, however, research has rarely led smoothly into policy and implementation. More often, research findings have been abandoned in a cupboard or buried under a new mountain of papers. Alternatively, the research findings may have been used, but were out of date by the time they were implemented and the proposed solutions no longer valid. Equally often, research has been badly designed, or badly done or simply inappropriate to the problems at hand. Thus, despite the growing number of people with professional research skills, the role of research in organisational decision-making is still vexed and largely ignored. And yet, anyone who has been involved in high quality research work appreciates the transforming insights that come from deeper understandings of why things work the way they do.

New, Not Old Research Style

Old Research Style:



New Research Style:

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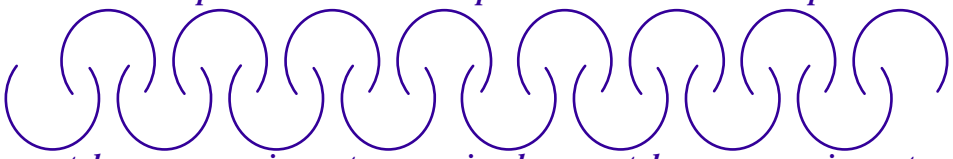
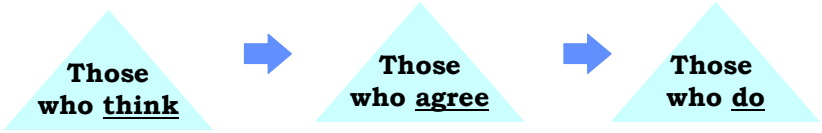


… act learn reperceive act reperceive learn act learn reperceive act …

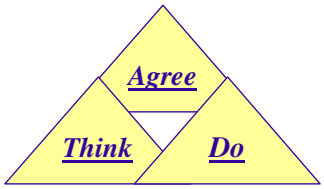
This situation has led many people to search for a new research style -- one that links learning, acting, reperceiving and revised acting in a closer interactive loop. The development of scenario building exercises has contributed to this new style of working by requiring those who are likely to use the scenarios for decision-making to participate in scenario building workshops. In these workshops, the intellectual assembly line is replaced by the collaboration of all participants in the three policy-making tasks: thinking, agreeing and doing. Each individual therefore shares responsibility for conceiving, agreeing and implementing key strategies.

Nature of Responsibility Changes

Old Research Style passes responsibility along:

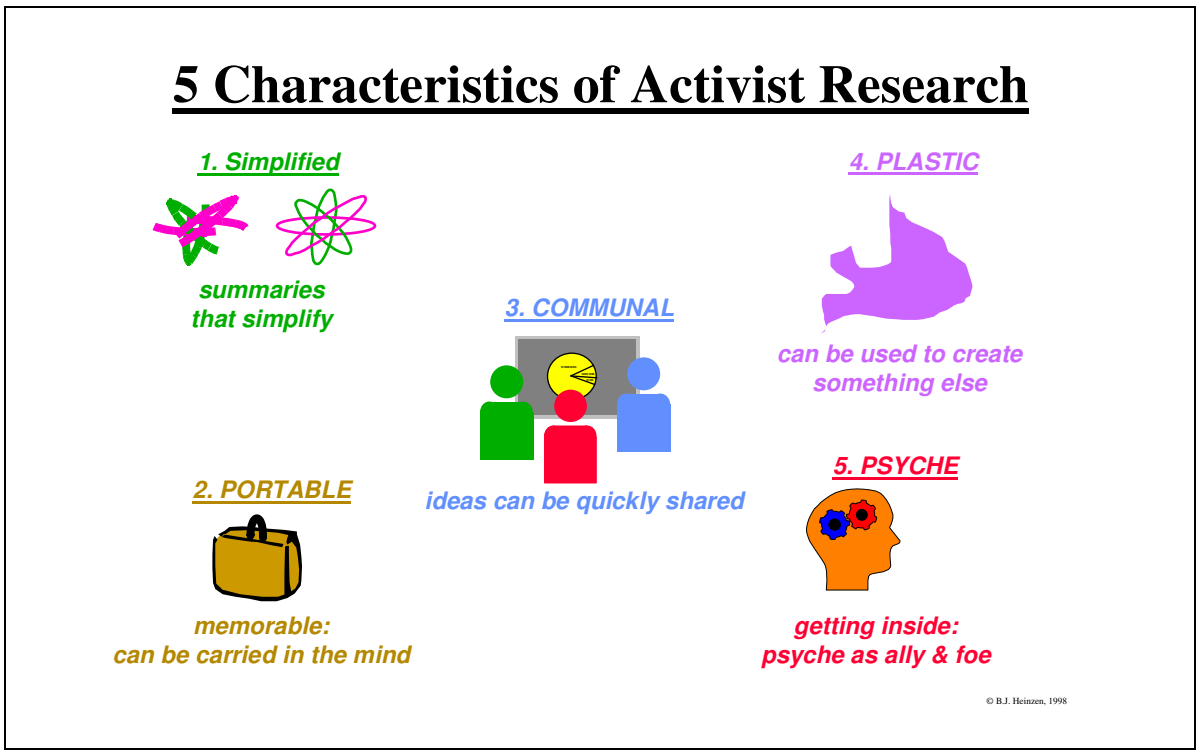


New Research Style give each person 3 responsibilities:



Five Characteristics of Activist Research

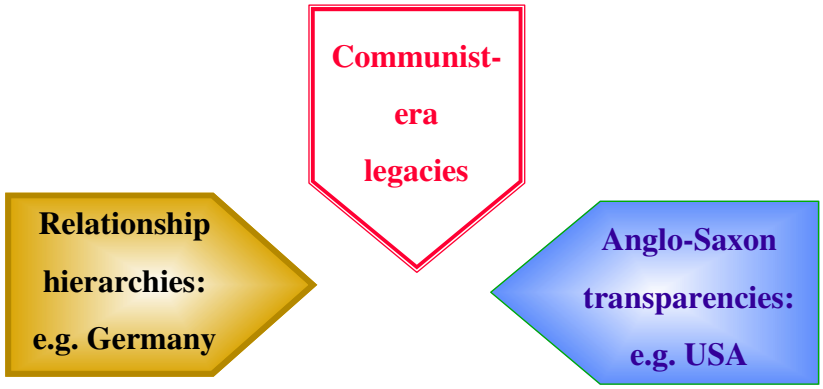
All of these conditions – the enlarged individual responsibility, the research for people who act, the fact that scenarios are about the future and are created in collaborative workshops – mean that scenario research is activist research which has five important characteristics.



First, research findings must be **simplified**. The researcher must look for patterns and broad summaries that present complex matters simply. This simplification is needed in part to create the intellectual building blocks that allow the group to test the interaction of those different elements which might shape the future. Simplification is not enough, however. Research findings must also be **portable,** capable of being carried in the mind as an aphorism or a particularly striking graph that managers can quickly recall when faced with the need to make some judgment on events. Third, as scenarios are created in collaborative groups, the research building blocks need to be **communal**. They cannot be so abstruse and specialised that the conclusions cannot be quickly shared among the people working to understand the future. Instead, research conclusions must be designed with sharing in mind. This requirement is related to the fact that scenario research also needs to be **plastic** – it should be possible to use the research to imagine and create something different. Research into analogous situations, for example, will have this plastic quality. Finally, scenario research needs to enter the **psyche** of those people thinking about the future. It needs to hit the basic assumptions and beliefs that currently shape a group's plans and ideas. Good scenario research will thus "get inside" the minds of people involved in the scenario exercise.

The following diagrams are illustrations of each kind of research. Each diagram is taken from strategic scenario assignments undertaken over the past 5-10 years.

Competing Business System Models in Russia



How will post-Communist financial systems develop?

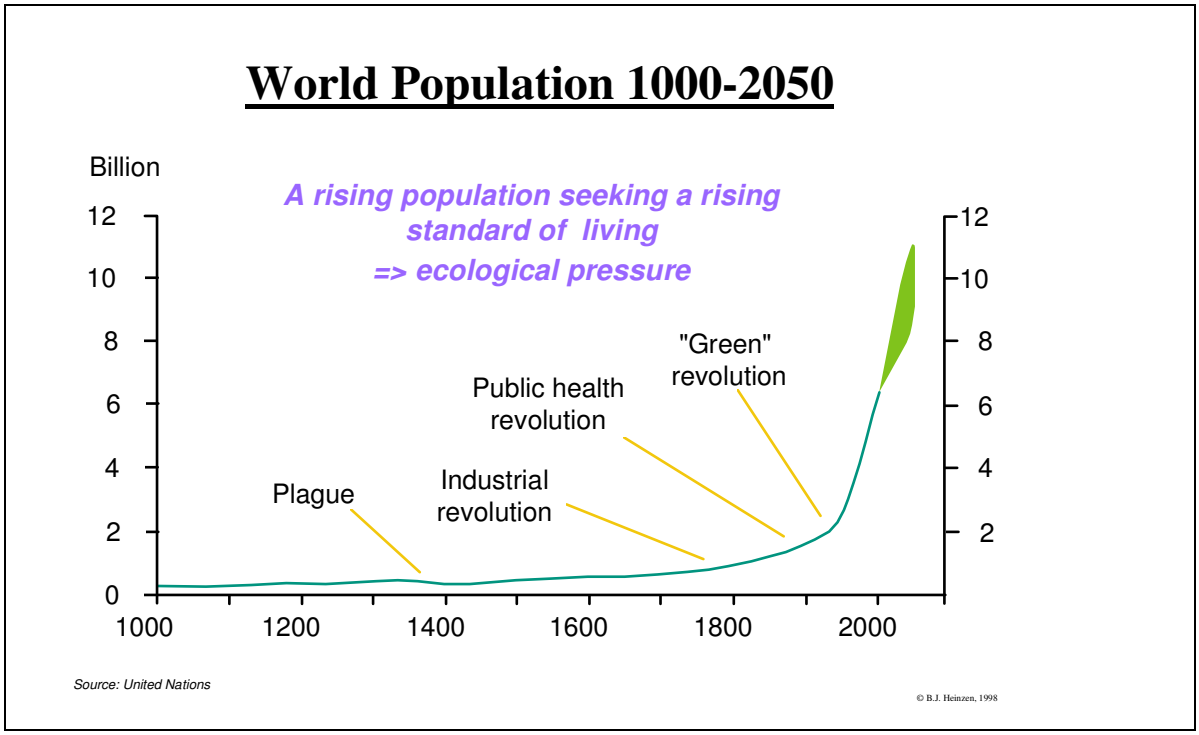
1. Simplified

*This is an example of **simplification.** The graphic summarises work undertaken in the early 1990s to understand how the financial system of Russia was evolving after the fall of the Berlin Wall in 1989. After considerable reading and talking with people who knew the area, it became clear that there was a very strong legacy of habits, agreements and institutions from the Communist system. That system was not simply going to disappear.*

However, there were also at least two important models of competing financial and business systems being offered to Russian policy makers. One came from the Japanese and German traditions of insider hierarchies based on long-term, established relationships. Another model was offered by the Anglo-Saxon countries, where transparent, market-driven transactions were more important than long-term relationships between organisations and individuals.

Which way would the Russian system evolve? How strong a pull would be exerted by the legacies of the past? How much would the IMF conditions push towards market transparency? Would the German or Japanese model be seen as one that was more consistent with the legacies of the Communist era?

All of these issues are simplified in this graph.

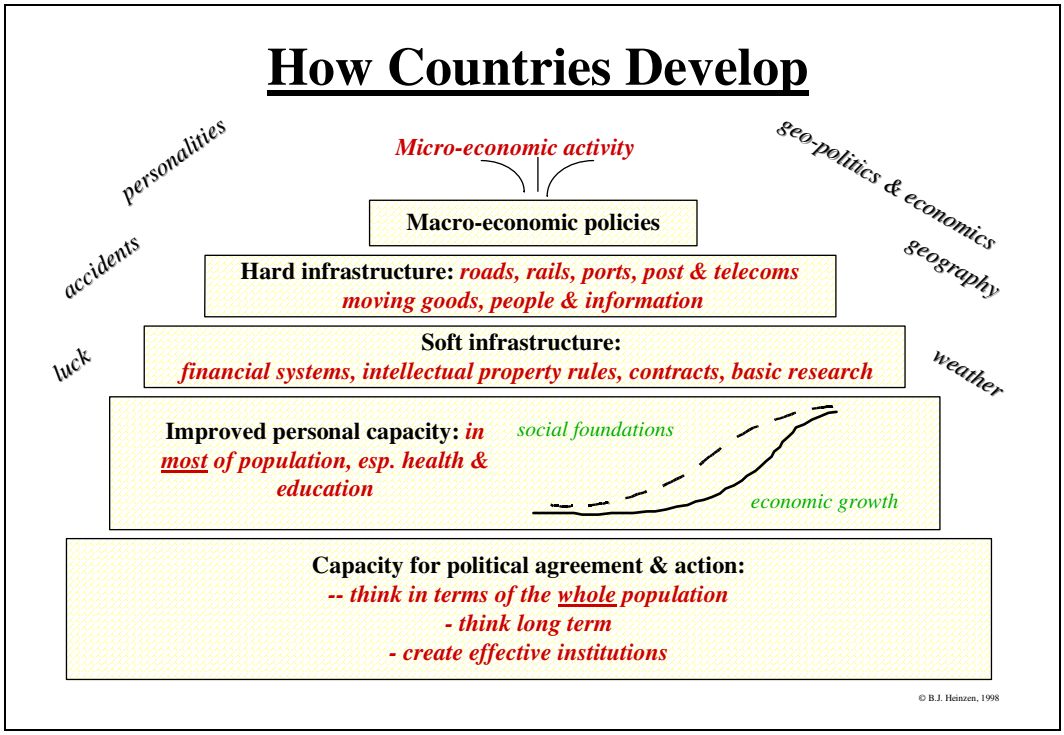


2. PORTABLE

This is a very portable graph. It comes from a scenario exercise looking at the future of global sustainability. It is graphically simple, stunning and easy to remember. It also has two important lessons carried in the shape of the line. The first lesson is that the population explosion we now see is a very recent event in the context of the past 1000 years. In fact, the greatest pressure has been created only in the past 30-50 years, which is less than the lifetime of one generation. This is the lesson of the upturning line that follows the start of the "Green" revolution.

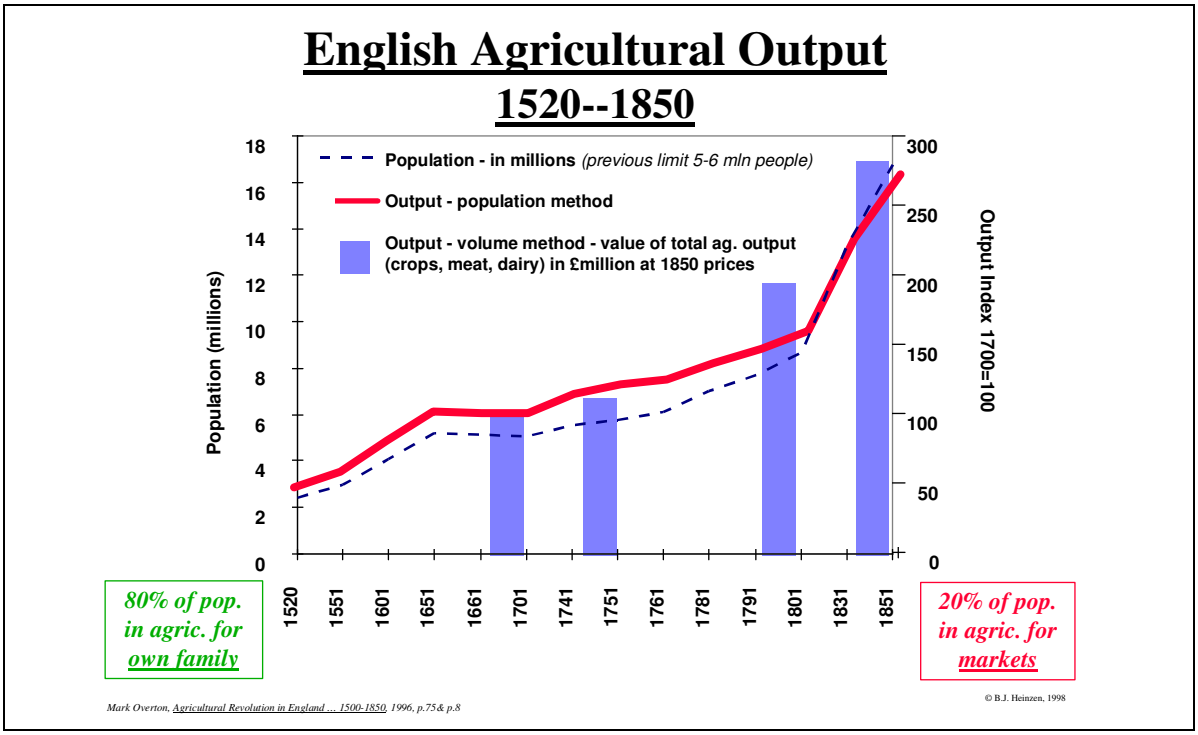
Equally relevant, however, is the long tail of slow population growth from 1000 to 1950. This long slow tail is important because nearly all of our human institutions were created at a time of slower change, slower population growth, and less populous political units. Can these institutions cope with the dramatic pressures of the present? This is the question raised by the long leading tail.

Both lessons, however, can be quickly carried in the mind if one simply remembers the shape of the line and the fact that it covers 1000 years.



3. COMMUNAL

This third graph is an example of a communal characteristic of scenario research. As we all know, development is a complex phenomenon. And yet, here it has been reduced to five big foundation stones and a few accidents. Each foundation stone actually carries a more complicated analysis. But by separating these features of development, and putting them in a hierarchical relationship to each other, it is then easier to share ideas about development with other people in the group. Different questions might be asked of the development picture and discussed with some simplicity. For example, where are the greatest weaknesses in Kenya today? Which foundation stone is most likely to be strengthened in the future or weakened by global events?

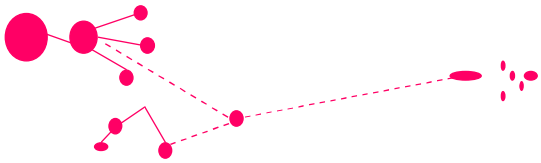


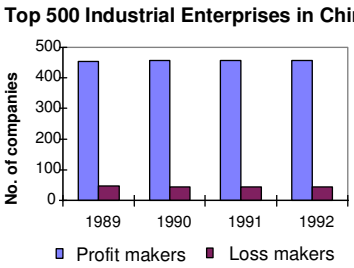
4. PLASTIC

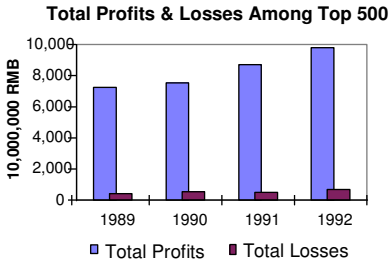
The example of early English agriculture can be used to describe plastic research. This graph was developed from a book about English agriculture from 1500-1850 in order to clarify the process of incorporating ecological sustainability in today's human systems. The arguments in the book were complex, but could be reduced to a handful of graphs that helped to pinpoint when critical developments took place -- such as the creation of a national market in grain, the publication of weekly grain prices, and the wide diffusion of key agricultural technologies. By identifying which came first – in this case the development of agricultural markets preceded the diffusion of agricultural techniques and the reform of land tenure – we could then ask ourselves whether ecological technologies are most likely to be taken up only once markets that encourage those technologies have been created. Such an idea can then be included in a scenario where the market mechanisms develop quickly and encourage the diffusion of new ecologically efficient technologies.

In this way, although early English agriculture seems to be a long way from the present, we can use the example to think about the future of human systems now.

"Dragon-headed" Enterprises







Source: Wang Xiaoqiang, "Transcending the Logic of Private Ownership: Chinese Enterprise Reform vs. Privatisation" DAE Working Papers, Amalgamated Series No. 9602, University of Cambridge, 1995?

5. PSYCHE

Finally, we have an example of research that gets into the psyche of a group of Western corporate managers. In this case, the conventional wisdom in many Western companies investing in China has been that Chinese state-owned enterprises are weak, heavily indebted, and likely to go broke or be bought out by stronger firms. This conventional wisdom has encouraged confidence in Western firms that they will be able to establish strong positions in the Chinese market.

However, our research in 1996 discovered an important academic study that identified 500 top industrial enterprises in China. Most of these firms were not only profit making, but were seeing their profits grow. This research helped the Western managers reperceive the nature of the Chinese competition and to review their own competitive advantages and disadvantages from a new perspective. In short, it was research that got into the psyche of our principal audience in a new and important way.

These, then, are five important characteristics of "activist" scenario research: that it is simplified, portable, communal, plastic, and capable of getting inside people's psyches. In meeting these requirements, good scenario research will become more accessible to the managers of our organisations and societies who are struggling to understand quickly the world in which they function.

Analysis and Intuition - Contributing to the Intellectual Task

How are these conclusions reached? What is actually involved in this scenario research? Where does it begin? How does it proceed? This brings us to the intellectual task involved in scenario building and policy-making.

We need to remind ourselves again that scenario research examines the future which, by definition, cannot be known. Its final conclusions, therefore, are not a single authoritative summary of academic findings, but a set of stories describing different futures and demonstrating why these futures might come about. This allows us to identify two aspects of scenario building and scenario research: data-gathering and story-building. In practice, the two processes interact repeatedly, but it helps to describe them separately.

Data-gathering

There are four aspects to data-gathering to note here: asking the right questions, assembling the facts, respecting one's instincts and constructing scenario building blocks.

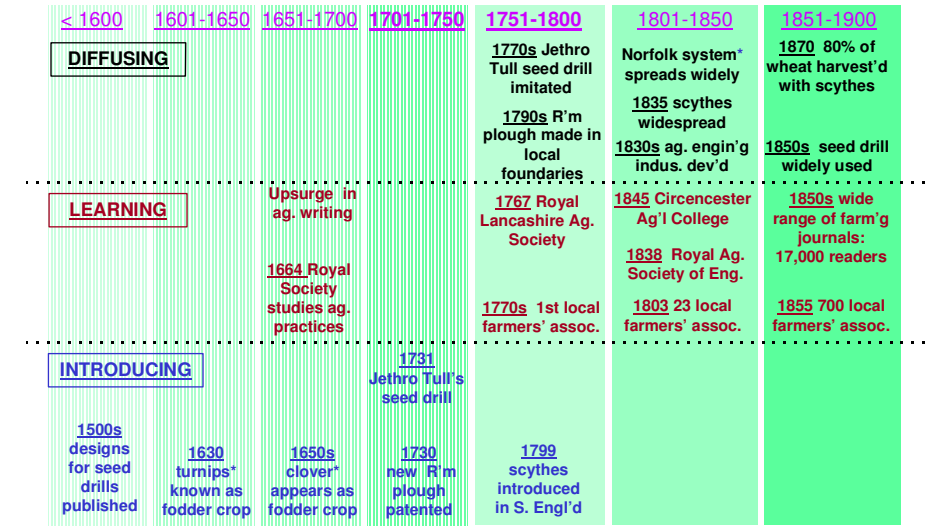
Ask the Right Question: The start of any data-gathering is to ask the right question. In scenario building, questions are often more important than subjects, but are not easily found. For example, during a study of the Japanese chemical industry in the late 1980s, we started by looking at the Japanese economy, but focused eventually on asking: "How have Japanese companies paid for the costs of a long term point of view?" This latter question revealed a number of critical turning points facing the Japanese financial system. This helped us anticipate a number of tensions in the Japanese economy that were otherwise invisible. Such questions are essential, as they reveal new dimensions we need to consider and, importantly, act as a filter on the great load of information that surrounds us.

One of the most helpful questions to establish early on is the "Organising Question" – what other scenario practitioners sometime call "The Focal Issue". This is the question that the scenario stories are meant to address. In Kenya, workshop participants have chosen as their organising question: "How will Kenya's social, economic, political and cultural systems evolve over the next 20 years?" This organising question is one we will use repeatedly in Kenya throughout the coming months to test whether a line of enquiry is worth pursuing and to help us structure the many different things we will be learning.

Assemble the Facts: In parallel with asking good questions, scenario research also needs to assemble the facts, some of which will throw up new useful questions. For the moment, however, it is helpful to think about several different ways in which the facts can be assembled. These include chronologies and histories, statistics that show trends or structural relationships, and an examination of key players and institutions.

A good chronology or history will seek to understand what happened when and why it happened in that order. The analogy of the English agricultural revolution, described earlier, is a good example of a helpful chronology. We simplified this histroy during a project on the future of companies developing environmental technologies. We wanted to understand why the diffusion of environmental technologies has been so slow. We suspected that technical innovation needed to be supported by social changes that were not yet in place. By looking at the sequence of change in English agriculture, we hoped to identify what those other changes were and thereby anticipate when today's environmental technologies would begin to diffuse rapidly in our societies.

Development & Diffusion of Technology



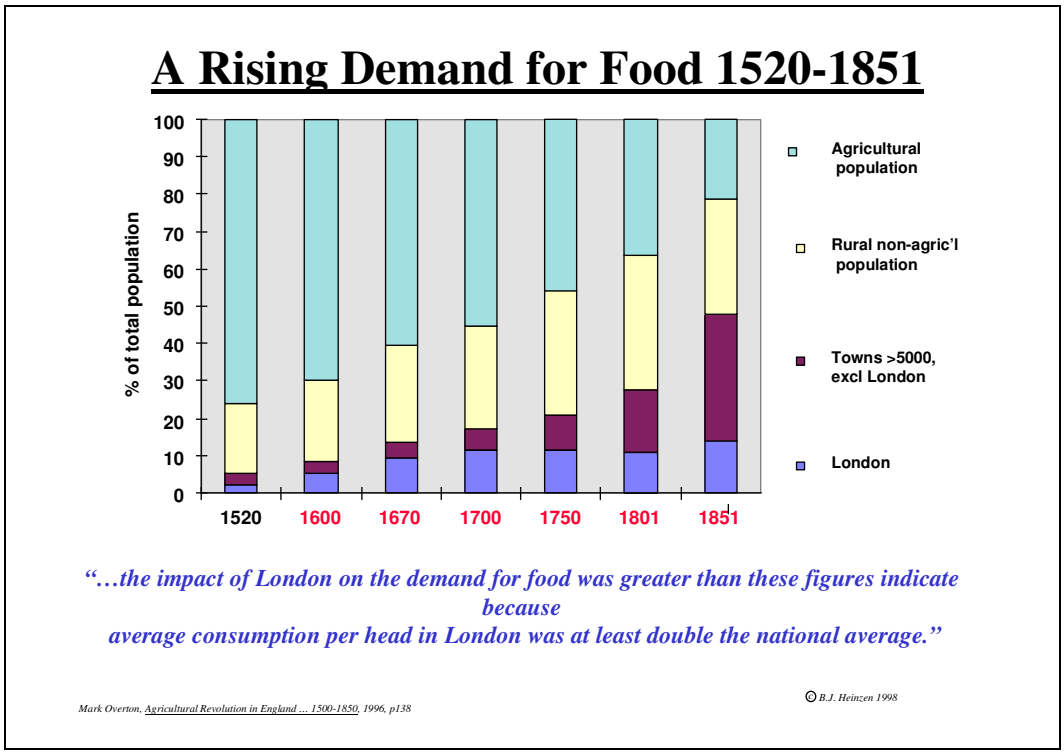
Mark Overton, Agricultural Revolution in England ... 1500-1850, 1996, 122-32, passim

A CHRONOLOGY

There were two important periods in the English agricultural revolution. During the first long period of slow development from 1500-1750, urban demand for grain steadily rose and was met by the reorganisation of grain markets which changed gradually and informally, but without legal approval. During the same period, new technologies were introduced continuously, but not widely used, because it was not clear who would benefit from introducing them. However, new rights in land use were being privately agreed, albeit slowly and patchily, effectively privatising the profits of agricultural innovation.

The second period of change, which began about 1750, effectively institutionalised and accelerated the informal changes that had already begun. Middlemen in the grain markets were given legal status, and the Parliamentary enclosure acts accelerated the redefinition of land use rights, which forced even more people off the land, and increased the demand for marketed grain. Of all the changes seen, the change in land use rights was the most important accelerator of technical diffusion. Farmers were now able now to keep the profits they made and had a greater incentive to meet the rising demand for marketed grain. At this point, the diffusion of new technologies took off and the productivity of the land increased.

Another way to assemble the facts is classic statistical "number-crunching". This can be of at least two kinds: numbers that define present day structures and relationships (e.g. the percent of the workforce in agriculture, industry, information technologies, etc.), or time series of numbers that show how such relationships and structures are changing. So, for example, one might use a time series of data to track the degree to which the United States energy system depends on imported oil, and from that begin to see how American foreign relations might be changing. Both of these types of number-crunching are illustrated in the graph showing how the structure of demand for food was changing in England from 1500-1850.



One more way to think about facts that are important to scenario building, is to think in terms of the important players and institutions and identify what is important to them. This was classically done by Pierre Wack when he anticipated the first oil crisis of the 1970s. His research looked at all the main Middle East producers of oil and tried to identify their principal interests in the oil business. As Western demand for oil kept rising, Pierre Wack asked himself whether producers would simply keep meeting that demand with low cost oil, or try to exploit this rising demand in order to meet their own objectives. Against that question it became important to understand which countries in the region would need to produce a lot of oil in order to pay for critical social projects and which countries would be more interested in maintaining a balance of power in the region. What were the interests and objectives of the main producers? The answers Pierre Wack uncovered were essential to his anticipation of the first oil crisis.

Respect Your Instincts: A third important aspect of research, which any good researcher will confirm, is the need to respect your own instincts. This applies to the task of identifying useful questions and to the task of assembling the facts. Our reliance on instinct is particularly important when doing activist research because there will *never* be enough time and money to do the work properly with classic academic care; inevitably the researcher is forced to cut corners.

One way of cutting corners is simply to take existing research and put it up for discussion. This is not always useful as the assembled facts have often been gathered to serve other purposes. Therefore, in deciding whether existing research is helpful, a strong sense of what fits the scenario questions and what does not, is an important guide. Often this means using existing data, but reorganising it to address new questions.

Another way of using existing research is to look for new theories that may have wider application than the specific circumstances that gave rise to the theory. So, for example, a South African academic, Yani Hofmeier has been developing a theory called "conversion" theory, which tries to understand the process of major social changes like that seen in South Africa. The theory, however, is of more general interest and is the kind of work that can be usefully incorporated into a scenarios exercise.

Equally helpful, is a contrarian impulse to move against the grain. A great deal of research work tends to reinforce existing conclusions about the way the world works. When that happens, we find the same conclusions being repeated in a variety of ways. This very repetition is the first signal that contrarian thinking is needed, since the more often something is said, the more important it is to challenge the conclusion that is so glibly repeated. In challenging conventions, one needs to follow one's one own sense of what is important, to remember those events one has seen or read about that don't fit the repetitive conclusions, and think through what those 'exceptional' events might mean. Another way of challenging conventional thinking is to look for the 'blank spots on the canvas'. What is the current research not covering? What might we might in those blank places? Is it important?

In Kenya we used a new "Intuition" question to draw on our experience of 'things that don't fit' in order to challenge conventional thinking. Very simply, each person in the room was asked to work alone exploring his or her memory and senses. They were asked also to look "for a spot that makes you shiver" and then explore this very personal feeling. In exploring that internal spot, they were asked to "look for something important that you cannot explain", and then write it down to share with the others.

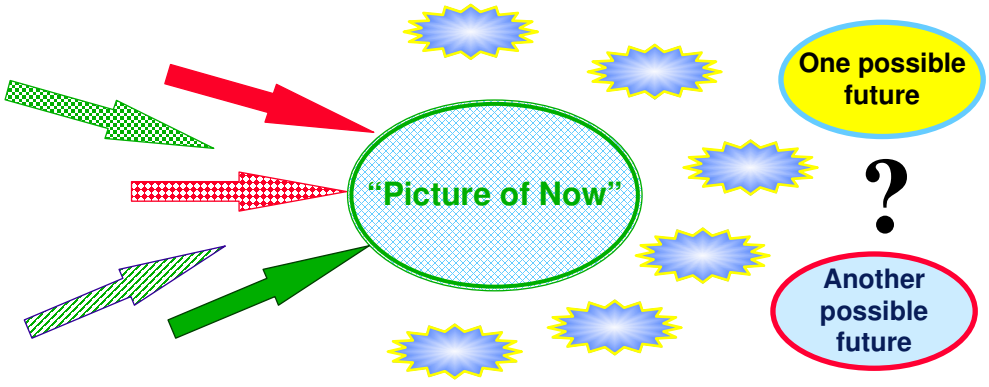
This question "of what we notice, but cannot explain", is the essence of good research instincts. It is perhaps our most important guide as we use our instincts to filter excessive information, a skill that needs to be encouraged and trusted. Isaac Asimov is reported to have said that the most important words in science are not "Eureka!", but "Hmmmm, that's interesting …"

Exploring the Edges

- Work alone.
- Go deep into your memory & senses. Look for a spot that makes you shiver.
- Explore that place.
- Look for something important that you cannot explain.
- Make a note & bring it back to share.

Construct Scenario Building Blocks: There is one last, important, task in data gathering, a task that begins the process of simplification which is so critical to 'activist' research. This is to take what has been learned and construct scenario building blocks that will allow us to understand the future in new ways. These building blocks are classic elements in the original scenario techniques as developed in Shell's Group Planning Department during the 1970s-80s.

Classical Elements in Scenarios Research



predetermined elements *key uncertainties* *scenarios*

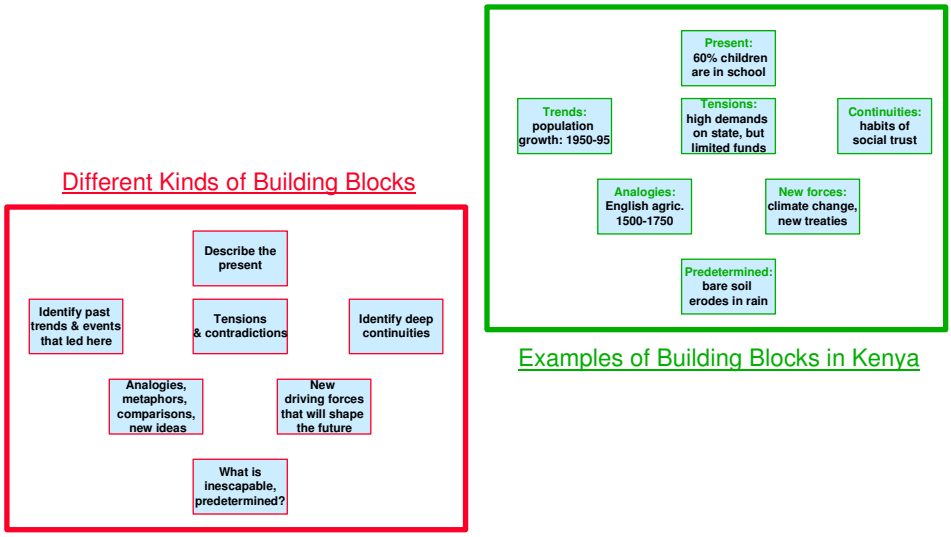
First, we need to describe the present as accurately as possible -- to paint "A Picture of Now". Here we need to identify important structural relationships, the major interests that are in play, and the critical facts about our world that we must acknowledge and face. In this description of the present, there will be many hard messages as well as messages of hope, there will also be many signals of change and important rigidities that will be hard to alter. This description of the present is critical, because it is our it is where the scenario stories begin. Many people describe scenarios as 'maps' that guide us into the future. But all of us who have traveled know that a map is most useful when we have a clear understanding of where we are standing as we study the map and plan our next steps forward.

Second, because present conditions will change, scenario research needs to understand what will cause that change. It therefore seeks to identify the key driving forces that have created the present and will shape the future. Some of these driving forces will have inescapable consequences that are "predetermined". Pierre Wack used to say that when it snowed in the Himalayas and the sun melted the snow, it was 'predetermined' that there would be a flood in Bangladesh. What is now 'predetermined'?

Third, although some driving forces will have predetermined consequences, others will be hard to predict. These are the key uncertainties. Scenario research tries to identify the key uncertainties -- i.e. those that are most uncertain and most likely to have a high impact on the future. So while a flood in Bangladesh may be predetermined once the snow has fallen and the sun has begun to shine, it is less clear what the consequences of the flood will be and how societies will react to the flood itself. This distinction between the "predetermined" elements of a scenario stories and the "key uncertainties" is one of the most important distinctions in scenario building. Moreover, it is important to keep both of these aspects in the stories themselves as our plans need to consider not just the uncertainties we are facing but also the inescapable facts we must face and manage.

For that reason, our research building blocks will take many forms, but with each one we will still try to understand what is inescapable ('predetermined') and what is still unpredictable ('uncertain').

Scenario Building Blocks & Examples



Building blocks can take many forms, but each building block should contain an argument that helps us to understand what might be shaping the future. For example, in describing the present conditions in Kenya it is helpful to know what percentage of children are attending school, because these are the people who will be entering the labour force several years hence. What skills and expectations will they have?

Similarly, strong trends like population growth -- or a fall in population growth due to higher education among women, or disease or hardship -- will help us understand how many people the land and economy will need to support. However, these trends tend to illustrate driving forces we already know. We also need to identify newly emerging driving forces. Recently, climate change has become an important new concern. How might new rainfall patterns and climate treaties affect a small developing economy like Kenya?

Another building block might identify important tensions in the system. For example, high demands on state resources may coincide with a decline in state revenue. What does such a situation imply for the continued strength of patronage and political support? How might this tension be resolved?

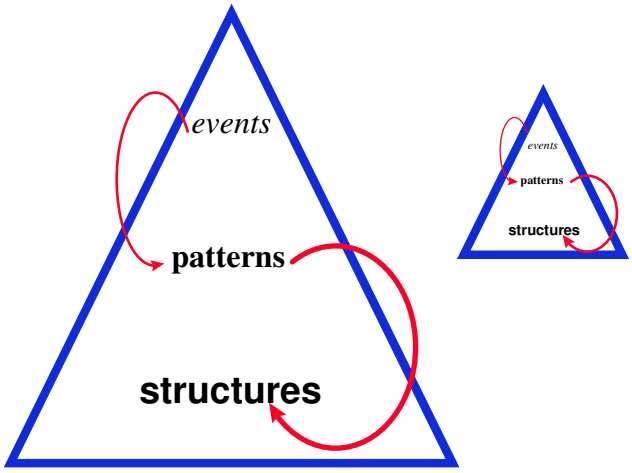
In any society, there are deeply held beliefs and habits that continue to shape human behaviour over time. One of the most enduring are patterns of trust. In some societies, the key trust relationships exist within families. Elsewhere, there is greater trust in institutions and abstractions like "the rule of law". What are the deep continuities now?

It can also be useful to identify comparisons or analogies. The study of early English agriculture is a good example of a useful analogy.

Finally, in describing the present and the new driving forces, we need to identify what is predetermined. For example, if we see that over-grazing and out-dated agricultural technologies have denuded the soil, we know that soil erosion will increase and agricultural fertility will decline. What will be the consequences of that?

Look for deep structures: In assembling these building blocks, scenario builders are engaged in one of the most important intellectual searches of the scenario exercise: the search for underlying structures. It is easy for all of us to imagine new events that might come along to shock or delight us. But good scenario building will help an organisation achieve a firmer understanding of the underlying structures that are giving birth to those events. Therefore, our scenario research will always have in mind the need to identify first the visible patterns in the facts we assemble and then the implied structure or strong forces that may have created the patterns we see. This is perhaps one of the most important tasks of good scenario research, as it helps managers to interpret new events even when the scenario stories themselves have not described such events in exact detail.

Looking for Deep Structures



Scenario research should help us to uncover deep structures. If we think in terms of events in Kenya, we know that there have been a number of clashes in the Rift Valley, as well as riots on the Mombassa coast, and cattle raiding in the northern corridor. Usually, these events are reported one at a time, with shock, horror, outrage, blame and hand-wringing of various kinds.

But what happens when we look for the pattern in these events? There we might find that many of the clashes are about land, or jobs, or the distribution of wealth. This pattern could suggest a deeper structure. That deeper structure might be one in which the allocation of natural resources is the critical issue -- or more deeply still, it may be that the underlying structural issue concerns the failure of political mechanisms to agree how such resources should be managed.

Looking even further, maybe the political mechanisms fail because no one has yet imagined a way in which all parties can share resources in an equitable way. Instead, politics is based on the assumption that each time someone gains, another person loses. This is known as the "zero-sum game". In fact other kinds of agreements are known in human societies, ones where the allocation of resources helps everyone become better off.

If we think of the scenario question that follows from this line of thought, we can then ask ourselves, in what situation will new, expansive political agreements about the allocation of resources be established? This is why good scenario research looks for structures in systems.

These, then, are the tasks of data-gathering: to ask the right questions, to assemble the facts, to respect your instincts and to assemble those scenario building blocks which help us to understand the underlying structures. Data-gathering, however, is only half the task. The other half comes in building the scenario stories. Here, too, there are several different methods that can be used.

Story-building

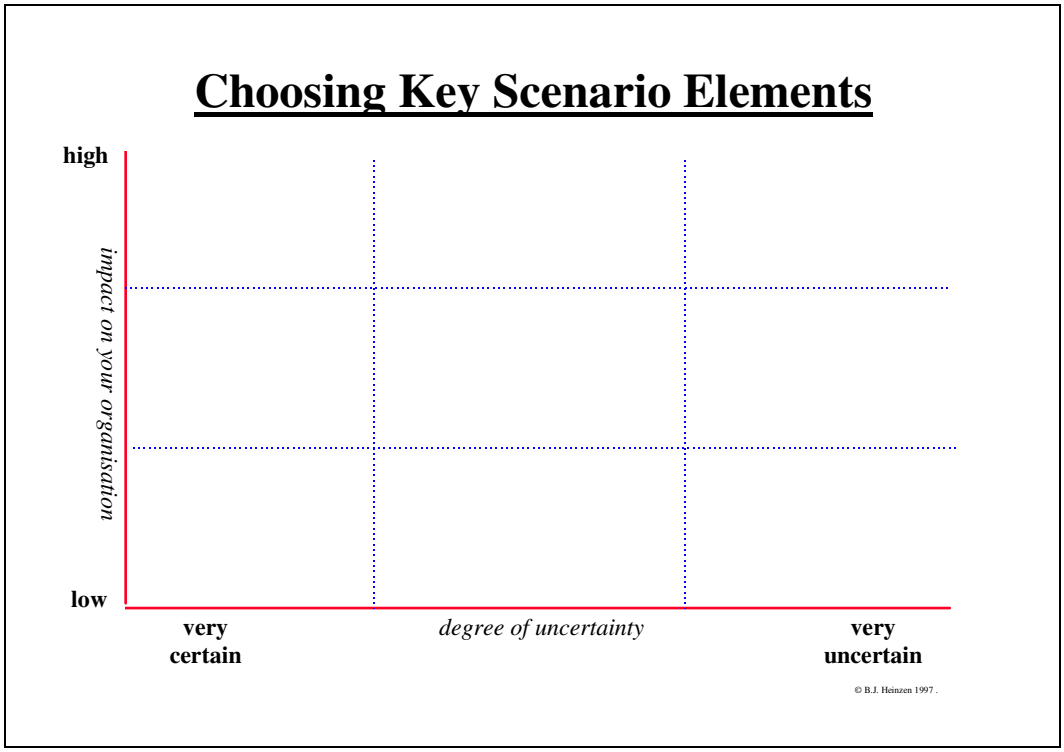
Story building is the point where analysis and instinct need to work most closely together. There are two important tasks that dominate the discussion at this point. First, there is the need to choose which of the building blocks must be included in the stories. Second, the team needs to think through the consequences of the driving forces and demonstrate the interaction of all the important elements.

Choose the important building blocks: This is the first critical step – to filter and limit the facts explored in the scenario stories. Despite all the learning that has been done during the research, only the most relevant and important research will be expressed in the scenario stories themselves. But how do we choose which elements are the important ones to include?

While the exploration of facts and questions has allowed the scenario researchers to range widely, the political and managerial nature of scenario work reasserts itself with a vengeance at this point. The needs and capacities of the principal audience are the prime consideration here. This inevitably causes great argument and soul-searching in the scenario team who will be caught between the need to introduce new thinking and the emotional limits of what the principal audience can absorb. Should the scenarios explore deeply those issues we know the audience will have trouble handling? Or should the stories stay closer to the safe limits of what the audience wants to hear? Because this tension exists, all good scenario exercises begin not with research, but with interviews and workshops that help the scenario team understand what their audience currently assumes about the future and what this audience understands about the underlying facts and drivers. This interview process will not be discussed here, except to note that it helps to establish what the principal audience needs to know and can tolerate learning, thereby helping the scenario team manage the tension between new thinking and emotional limits.

Another effective ways of handling this tension is to develop an "inoculation campaign" – a series of workshops, seminars or private presentations that explore the research findings before they are used to build the scenario stories. This not only increases organisational learning, it helps the audience grow accustomed to unexpected findings. It is also a relatively unthreatening exercise, because none of the research will have been endorsed in a final document of institutional memory. Although very few audiences are prepared to give the time and attention that such an inoculation campaign requires it can pay high dividends if done well. However, even with good interview work and 'inoculation;' the tension between new knowledge and emotional readiness remains.

Because this tension persists, another effective ways of choosing which elements to include is to work with the principal audience by asking them to place all the research building blocks on a single matrix that measures the impact of any issue on the organisation against its degree of uncertainty. In this exercise, the key elements to include in the scenarios stories will jump out immediately.



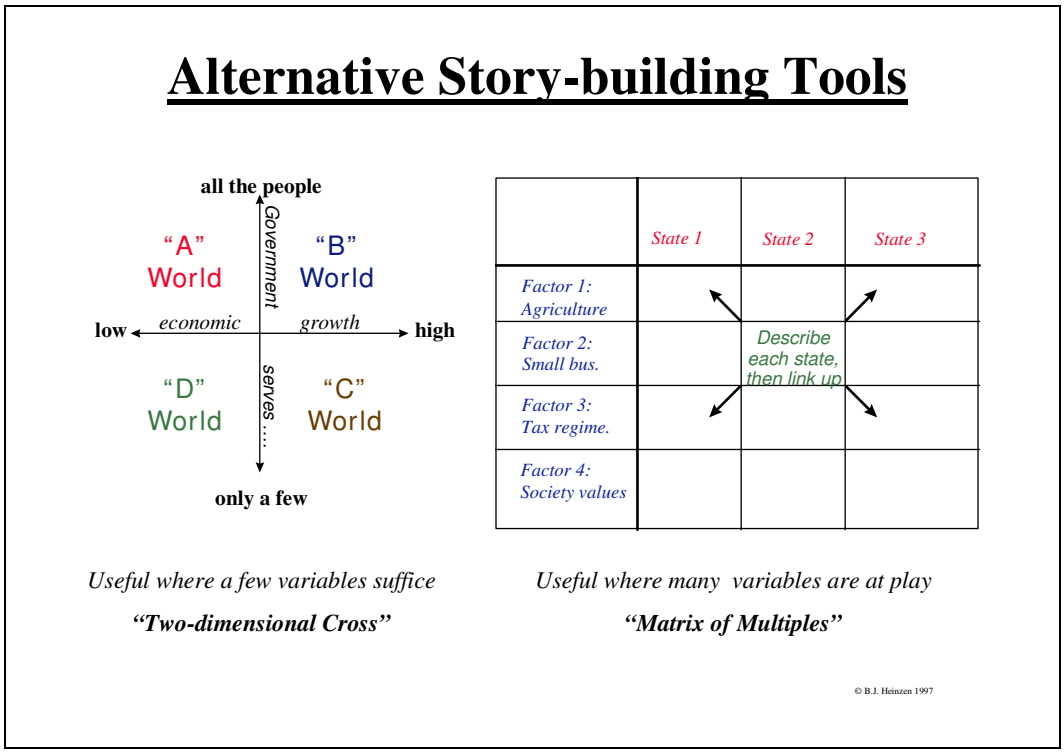
There are, however, other ways of choosing those elements that will shape the stories. One way is to look at the strategic choices the group is facing and build scenario stories around those. Another way is to identify the key vulnerabilities of the group and then postulate different ways these might evolve. So, for example, an airline that depends on a dominant position at one airport for most of its profits might start to imagine the circumstances in which that dominant position is threatened. Alternatively, the team might brainstorm conditions they fear or hope for and then see what would bring them about. Recently, a business group looking at the future of sustainability postulated hopefully that the market would solve our current environmental problems. This forced us to look at how markets currently value the environment and identify what institutional changes were needed for markets to support ecosystems rather than survive on a environmentally destructive subsidy from them.

All of these techniques are effectively ways of deciding what should be included in the scenario stories and what should be left out.

Think through the consequences and interactions: Once the key elements of the stories have been selected, there is a need to think through what the consequences of these elements might be. This is particularly important with the inescapable predetermined driving forces that have been uncovered. What is the consequence, for example, of the rapid recent increase in the global human population occurring after 900 years of institutional development at different orders of magnitude and different evolutionary speeds? This is where asking the right question and pursuing as relentlessly as possible the logic of a particular set of circumstances can produce some of the most important insights of a scenario exercise.

Another source of insight is in the interaction of the key building blocks. One of the simplest ways of doing this is to create a matrix of building blocks and imagine the different ways these will develop. The simplest matrix is one that postulates two critical uncertainties that will shape the future. More elaborate matrices will have more

than two building blocks and will imagine how each building block might unfold in the future. A game of "what goes with what" can then be undertaken to test how different elements of the future might interact. These matrices are among the standard tools used in scenario building.



This, then, is the essence of scenario building: to identify the key elements to include in the stories and to think through their consequences and interactions. What needs to be emphasized here, however, is that the tension between what we have learned from the research and what we know or believe our audience can handle is a tension that will be debated throughout the development of the scenario stories. In resolving that tension, the temptation is to leave the research work behind and only write what we know our audiences can understand. This would, however, fail to achieve one of the central purposes of scenario exercises: to increase our shared understanding of how the world works and how it might evolve.

Collaborative Learning - Contributing to the Political Task

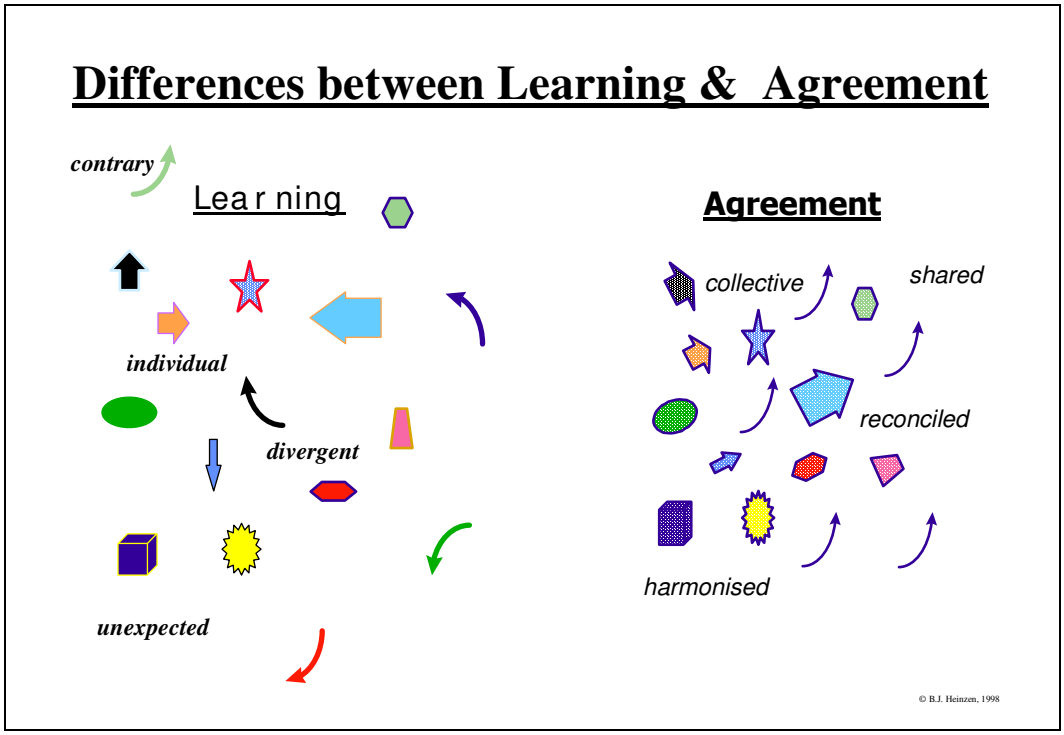
The need to manage this tension brings us to the third task of policy-making: the political tasks. How do scenario research and scenario exercises help with that third task?

Here it needs to be emphasized that scenarios are not policies or strategies or options that require agreement to be effective. Rather, they are stories that describe different future worlds in which an organisation will try to achieve its goals and visions.[2] This means that scenario workshops do not seek policy agreement, but

[2] By and large, scenario stories about those events and circumstances that are beyond the immediate control of the organisation itself, although some practitioners use scenarios to help organisations imagine the world they want to see. These are known as "normative" scenarios. While normative scenarios are valuable, it is my belief that organisations and societies need to distinguish between what they would like to have happen (a vision of the future) and what might happen

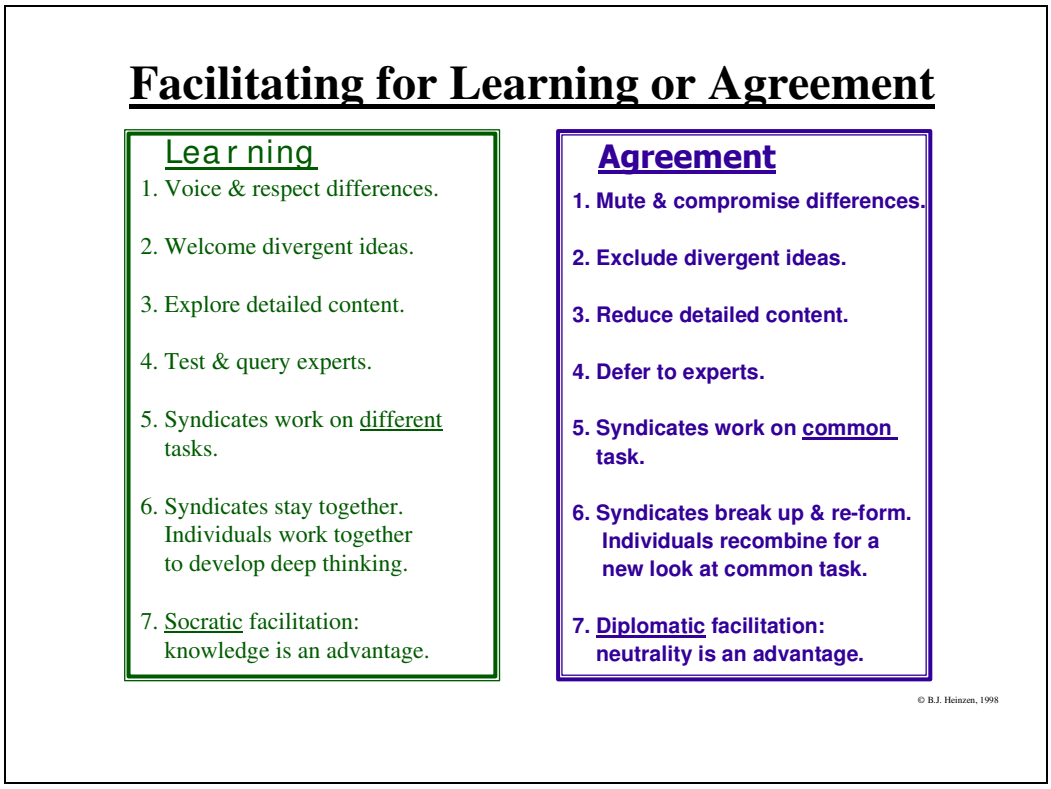
instead offer an important neutral ground for exploring new ideas and new information. As exercises in collaborative learning, scenario building workshops require different techniques of workshop facilitation than those used in processes looking for organisational alignment, common purpose or a shared sense of direction.

This distinction between facilitation for learning and facilitation for agreement is crucial. Agreement is a collective task in which individuals choose – or are forced – to minimise their differences. Learning is a much more individual task where divergence, contradiction and variation are as instructive as shared conclusions.



that is outside their control (scenarios of the future). The next task is then to use the scenarios to imagine how the group's vision can be achieved in variety of future conditions.

Because scenario building workshops are as much about learning as they are about agreement, the techniques for managing the process of collaborative learning are different from those involved in agreement. A few of these are listed below:



Most of the items in this list are self-explanatory, with the exception of those statements about syndicate work. Syndicates are formed whenever a workshop has more than 8-10 people and are smaller sub-groups who work together on a given task, the results of which are shared with the whole workshop. Very frequently during two-day scenario workshops, the facilitator will ask syndicates to work on a task during the morning, but will then break up and reshuffle all the participants into new syndicate groups for a new task during the afternoon. In theory this means that the thinking that was done in each group in the morning is carried through into each of the new afternoon groups. In practice, what tends to happens is that the line of thought that began to develop in the morning is cut short and replaced by the new demands of the afternoon task. As a result, the major points of agreement are carried forward, but the opportunity to develop a new line of thinking has been interrupted. This experience argues that such a procedure is more suitable for achieving agreement than it is for deep learning.

In contrast, one of the more interesting experiments in syndicate learning took place during a recent meeting of Western business people working on scenarios of energy and sustainability. This workshop was designed to increase the understanding of energy needs in developing countries. During the workshop, syndicates spent an afternoon and a morning on a single task. They were given collections of books and statistics about different areas of the world where industrial energy has not yet developed and also had visits from wandering experts. They were then asked to design a sustainable energy system for the circumstances of the geography and society assigned to their group. What we found was that the longer time allowed for the task, the challenge of thinking about unfamiliar parts of the world, and the immediate need

to imagine a new energy system stimulated learning in unusual ways and helped people to imagine very different possibilities from the ones they were used to seeing.

In short, critically different procedures are needed for learning and for agreement[3]. These differences are worth highlighting because in a good scenario exercise, both types of facilitation will be needed because the scenario process constantly cycles between learning and agreement. So, for example, we need to ask good diverging questions that explore the unknown, but we also need to agree on a single organising question that helps to focus our thinking. Similarly, we need to learn about the different building blocks, but later need to agree on which building blocks to include in the final scenario story.

This constant cycling between learning and agreement improves the process of political agreement. The learning helps to unfreeze conventional thinking and fixed positions, while the skills of agreeing on small procedural issues can be carried over to larger policy-making tasks. Learning also increases respect for divergent points of view and makes it easier to tolerate a competing position with which a participant may later have to compromise. In short, because scenario workshops are exercises in collaborative learning, they help to develop skills in both collaboration and learning, making political tasks easier to handle.

Why Scenario Research Does Not Get Done

There is now wide agreement that scenario-building exercises help people to recognise and accept increased uncertainty in the world around them. However, the major, additional contribution to be made by scenario research has very often been neglected. Why should that be so?

The first reason that can be postulated is that scenario methodology is still relatively new and few people understand the techniques or the theory well enough to run a scenario building exercise. Nor is scenario building something that can be easily learned from a book, as there is considerable tacit knowledge embedded in scenario processes. Most new practitioners therefore need to be 'apprenticed' to someone else, which means that the spread of basic skills is limited by the rate of personal experience.

However, even where the skills exist, this is a methodology that is expensive in time and money. It is also a technique that draws on a plurality of views and knowledge from inside the organisation. It is, therefore, democratically driven and responsibility for the results rests with the organisation. However, processes that introduce wider inclusion are not always welcomed by senior managers who feel less able to predict the outcome. When that uncertainty is allied to a perception that scenario-building is costly in time and money, new practitioners are likely to be given only limited permission to try scenario methodology. In such a case, one of easiest ways to reduce the costs, is to reduce the amount of scenario research that is done.

Cutting back on scenario research (or any other kind of strategic research) is also encouraged by the nature of research itself. For one thing, research is an activity that costs money, but has no clear limits. When one invests in a new building, the size of the building is limited by the size of the site, the permissable height and other rationally defined constraints. But how does one know when a research job has been completed? Very often, even the best research raises as

[3] It is my impression that more work – both practical and theoretical – needs to be done to understand the differences between facilitating group work for learning and facilitating groups for agreement. Too often the tasks are confused, to the detriment of both.

many questions as it answers. So the time and resources needed for research seems limitless[4]. In addition to the fact that the amount of research needed is unclear, the outcome of the work is unpredictable. By definition we only do research into the things we do not understand. Because we do not understand them, we cannot predict what the research will teach us. That uncertainty about the outcome is compounded in the case of strategic research, including scenario research, because the returns on what we learn will only be seen in some distant future. In that distant future, the financial returns on the research will be hard to measure with any accuracy and even harder to attribute to the strategic research that was completed in previous years. So why should any organisation invest in strategic research that has expanding limits, an unpredictable outcome and delayed returns that will be hard to measure and attribute?

The arguments against doing research do not end here, alas. It is also true that very few established organisations have been designed with internal knowledge creation as a central strategic purpose. Instead, organisations have followed a mechanistic model of human resources. In this model, personnel is not a critical strategic function, but an lowly and often despised housekeeping issue, with two major responsibilities. First, human resource managers are expected to identify and match people with certain qualities to jobs where those qualities are an asset. Second, in order to ensure that good people stay with the organisation, rules have been designed to reward those individuals who perform their jobs well.

If we think first about the task of matching people and tasks, we all know that there are those of us who are particular good at thinking, those who have a strong aptitude for doing, and those who take particular pleasure and pride in being good at 'agreeing' (or less politely, 'politicking'). In organisations where people are matched to tasks, the assembly line principle links these three tasks while also reinforcing their separation into three distinctly different groups of people. Once this separation is established, a kind of hierarchy of respect develops. In this hierarchy, 'doing' has precedence, because 'output' must be maintained. With production as the first responsibility, 'politicking' becomes a simultaneously envied and despised strategy of personal (not collective) advancement. "Thinking', which should be shaping strategic direction and therefore have a very high status, is in fact more often simply as a necessary hygiene activity, something that is assigned to an isolated group of people who will not interfere with those people busily getting on with the job. In such a world, most people are trained to do things, not ask about them. Obedience becomes more valued than curiosity, and questions of any kind can threaten to undermine the established order of things.

This is a somewhat satirical exaggeration of how we organise our productive activities, but is still only part of the reason why research is so rarely undertaken. Scenario work is about accepting uncertainty, but it is also about learning. So does the lack of investment in research mean that there is no interest in learning?

Anyway who has watched small children at play knows that we are born with an enormous curiosity about the world around us. Where does that curiosity go as we become adults functioning in complex human organisations? There are two answers to this question. First, in many of the large organisations where I have worked, managers are expected to change jobs – often quite dramatically – every two-three years. This system was designed to provide promising young managers with an exposure to all the complex aspects of the modern company. It also, coincidentally, helps to keep down corruption and avoids the rigidities that set in when people have been doing the same things with the same people in the same way for years at a time. However, when someone knows he or she is going to move to a different set of responsibilities in a relatively short period of time, why should that person invest in deep knowledge about the particular task in

[4] It is never easy to know the boundaries of a research project. There are the arbitrary limits imposed by "getting to the bottom of the page" or running out of money or time. There are also the limits imposed by a logical framework, or one's intuition which simply says 'stop' when enough has been learned to take us a useful step further.

hand? Why do any research? This uncertainty of tenure has been increased in recent years by the drive to reorganise corporate structures and shed large numbers of managerial staff. Not only have these restructuring left fewer people with larger responsibilities, it has killed much of the personal incentive to learn and – equally importantly – left little time to indulge a taste for learning even where it has survived.

The personal incentive to learn has been further reduced by the second critical responsibility of personnel managers: to keep and reward good staff. Hiring and keeping good managers is still a competitive activity. As a result, most contracts are privately agreed, with rewards based on an individual's current activities. Rarely, if ever, is a person judged by the results of his activities as they evolve in five or ten years time. Still less often are people judged by what they learn. More often, the Christmas bonus is based on meeting a target that is based on the previous year's production plus X%. If an individual with such a contract takes time out to think about the future, he risks not meeting this year's production target and therefore not earning his yearly bonus. Not only is learning not rewarded by this system, it is effectively punished by diminishing the bonus. So what financial incentive is there to learn and to think long term?

This is the way we live now: we place people in assembly line positions, we measure them by what they do, not by what they learn, we move them around quickly and reward their ability to maintain and increase last year's activity, rather than invent new strategies and new ideas. Moreover, we keep them so busy doing their jobs that thinking and reflecting and research have no time or place or honour in the system.[5]

This is a deliberate overstatement. But it raises a number of critical questions: What is the reward for learning? How do we provide organisational incentives for thinking ahead? What are the economics of knowledge creation and fruitful strategic research? If good strategic research is being held back by the current rules, what can we do differently to ensure that such research has a place in our thinking?

Conclusion

Despite our best intentions, the limits to – and fears about – conducting and integrating scenario research are likely to remain. They may even increase. However, research work should not be thrown out without a final argument in praise of its intrinsic qualities.

At its best, research is an act of exploration and discovery. There is considerable joy in good research work which throws up important new insights and illuminates a wider set of choices and possibilities. It is also true that good research is inherently dramatic and uncomfortable, exposing conflicts, tensions, dilemmas and hard choices. This is why the kind of activist research described here is always exploring the tension between new ideas and what can be emotionally absorbed. Around that tension, there is a very narrow band within which research – and scenario work – will succeed. This narrow band was succinctly described in 1993 by Gerhaardt Schwartz[6]: "There is an area, a band of tolerance, among any management team. Fall below it and nothing happens; go above it and they kill you."

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[5] There are exceptions to this pattern. Senco, an office products company based in Cincinnati, Ohio, USA, expects each of its managers to spend time on all three tasks: thinking, agreeing and doing. Similarly, when IBM, was at its lowest point, its UK managers were required to spend two days of each week on training. (Personal communications.)

[6] Gerhaardt Schwartz who led the first scenarios exercise in the Rijkswaterstaat, the venerable Dutch agency responsible for water management in the Netherlands. This comment comes from a 1993 unpublished interview.

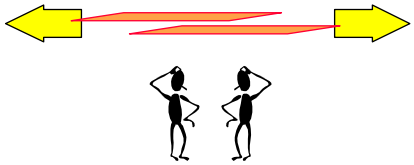
Intrinsic Qualities of Good Research

An Act of Exploration & Discovery

Inherently Dramatic & Uncomfortable

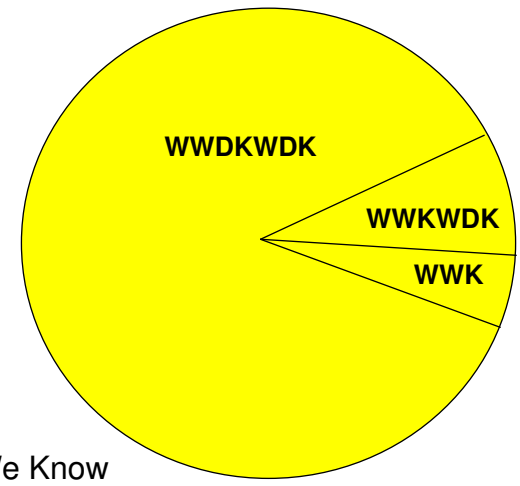
Good research exposes:

conflicts, tensions, dilemmas & hard choices.



Perhaps most important of all, good research work helps us learn to live with the unknown. We are, and will be, constantly surprised by those things we did not know we did not know. However, the best research helps us to sense where some of the boundaries between the known and the unknown might be found. By doing so, it is profoundly reassuring and makes the vast *terra incognita* of our ignorance less alarming in its mystery.

Learning to Live with the Unknown



WWK: What We Know
WWKWDK: What We Know We Don't Know
WWDKWDK: What We Don't Know We Don't Know