A classification framework for prospective methods

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Abstract

**Category:** Research paper.

**Purpose:** The purpose of this paper is to examine the nature and type of methods used in Futures Studies and foresight work which are explicitly concerned with creating ‘forward views’ and/or ‘images of the future’ (‘prospective’ methods).

**Design/methodology/approach:** A new analytical technique, ‘mode-level analysis’, is introduced and described, based on a classification of ‘modes’ of futures thinking and levels of ‘depth’ of interpretive frameworks. By choosing both a set of thinking modes and a series of interpretive levels as a basis, prospective methods may be analysed in terms of which mode(s) and what level(s) they operate with or at.

**Findings:** Two modes of thinking and five levels of depth are chosen for this analysis. The resulting schema is used to classify such methods as: wildcards, forecasting, ‘trend breaks’, visioning, backcasting, and alternative histories and counterfactuals. An analysis is also carried out on the method of ‘scenarios’, revealing a variety of different approaches operating at multiple levels of depth. The historical development of prospective methods is also discussed.

**Practical implications:** Mode-level analysis can be generalised to any number of modes or levels, depending on the application, context or objectives of the analyst. It may be used by academics for interest’s sake and for teaching students, and by practitioners as both a design tool and a diagnostic one.

**Originality/value:** This paper introduces a new technique for classifying prospective methods, and may help lead to ideas for the creation of new methods.

**Keywords:** prospective methods, thinking modes, interpretive depth

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1 Introduction

It is an interesting thing to note that there appear to be relatively few methods which are directly concerned with what might be considered the central feature of foresight work: the creation of ‘forward views’ or ‘images of the future’—what has elsewhere been called ‘prospection’ (Voros, 2003). This is not to say that there are few methods used in foresight work—not at all—for there are many. But it does seem that most of them are not in fact explicitly concerned with the actual creation of what many people would consider the very stock-in-trade of a futurist: forward views and images of the future. Many of the methods used in foresight work can equally well be found in the toolkits of, for example, historians, social scientists, anthropologists, and other non-futurists, and this may be one reason why Michael Marien (2002) insists that Futures Studies (FS) is not really a separate field or discipline at all. What is it, then, about FS and foresight work which can and would distinguish it from other disciplines? One answer might be its systematic and conscious use of explicitly prospective thinking and methods.

The purpose of this article is to examine the nature and type of prospective methods used in FS and foresight work. This will be done using a new analytical technique, ‘mode-level analysis’, to be introduced and described below.

Mode-level analysis can be used in a variety of ways:

- to better understand different approaches to prospection;
- as a teaching aid to introduce students to the range of prospective methods available;
- as a design tool when trying to determine what type of prospective method is best suited to a client’s way of thinking or preferred mode of interacting with information; and
- as a diagnostic tool to analyse what was done in a particular foresight engagement, and how and why it worked or didn’t.

In the next section, it will be suggested that prospective thinking seems to be distinguishable in terms of two major ‘modes’ and that these two modes of futures thinking underpin or give rise to two main categories of prospective methods. When these two modes of prospection are combined with different levels of ‘depth’ in an interpretive framework, a set of possible classifications of prospective methods emerges. Such methods may thereby be analysed and ‘located’ within the analytical framework so created—and this activity is precisely what is meant by ‘mode-level analysis’. Several prospective methods are then examined and classified, to show how mode-level analysis is carried out, and some observations are made about the ‘evolution’ of prospective methods through the levels over the last few decades. Finally, some concluding remarks round out the discussion and invite speculation about the possible creation of new methods; methods which are also ‘prospective’ in the sense that they have yet to be created.

2 ‘Modes’ of thinking

In an earlier paper (Voros, 2005, p.36) it was briefly suggested that there seem to be two main types of prospective methods:

1. evolutionary methods, which seek to develop or evolve forward in time relatively continuously from a distinct starting point or configuration (usually in the present); and

2. *revolutionary* methods, which seek to project or jump forward *largely discontinuously* into some distinctly different (future) state of being, without necessarily a clear connection to the prior state.

It is possible to conceive of this categorisation of types of methods more generally as arising from different underlying ‘modes’ of prospective thinking. That is to say, there would seem to be two basic types of prospective *thinking*, and the *methods* which arise are simply the methodological expressions of these modes of thinking. Thus, prospection—the activity of thinking about and creating forward views or images of the future—would seem to be distinguishable into two basic modes:

1. mode ‘E’ prospection, which is characterised by such terms as: evolutionary, extrapolative, smooth, continuous, incremental and ‘flow’; and

2. mode ‘R’ prospection, which is characterised by such terms as: revolutionary, discontinuous, disjoint, disruptive, ‘reversal’ and ‘jump’.

Obviously, these two modes are idealised endpoints on a continuum. They are represented schematically in Figure 1.

![Figure 1: Schematic representation of mode ‘E’ and mode ‘R’ prospection](image)

In broad terms, mode E prospection tends to be exploratory/descriptive in nature, given that it generally starts with the status quo (the present) and looks for how things evolve over time into the future. Mode R prospection, by way of contrast, generally involves discontinuous jumps from the status quo to some new endpoint which may not necessarily have a clear or obvious connection to the present. Given this disjoint character, it is not surprising that this mode of prospection generally tends towards being normative in nature, wherein one usually seeks to ‘escape’ from the present (often unsatisfactory) situation.

The descriptive/normative distinction in methods is one which has been often noted in the FS literature (see, for example, Glenn, 1999b; van Notten et al., 2003); perhaps it finds its basis in the very modes of thinking used to design methods and to conceive of images of the future in the first place. In addition, mode E prospection appears to be the mode of choice for creating images of *probable* and *plausible* futures, whereas mode R prospection appears to be the mode of choice for *possible* and *preferable* futures (see Voros, 2003, for precise definitions of how these terms are used here). Of course, these are not hard-and-fast rules but, rather, very broad-brush-stroke orienting generalisations, and should be viewed in that light.

While it is not the intention to argue that these are the only modes of thinking which are used when thinking about the future, nonetheless it seems that identifying precisely this particular distinction has quite some utility. When combined with the concept of ‘layers’ of reality, we end up with a useful and powerful way to re-conceptualise different types of prospection, and the methods which have been used to do it.
3 ‘Layers of reality’

Recent work in FS has increasingly taken the view that reality is ‘layered’, and that, therefore, ‘layered methodologies’ need to be employed to better understand and interpret this complex reality (see, for example, Inayatullah, 2002a).

To this end, a five-layer framework is introduced here which will provide a basis for considering how prospection can be carried out with respect to different layers or ‘levels’ of interpretive depth. This framework is a particular form of a more general schema reported in an earlier paper (Voros, 2005), but it is not necessary to be familiar with that work for the purposes of the present paper.¹

The layering scheme is derived from a number of sources including, notably, the well-known systems ‘iceberg’ metaphor, the layering of futures-thinking proposed by Richard Slaughter (2002a), the methodological approach known as causal layered analysis or CLA (Inayatullah, 1998a), work on human consciousness (Graves, 1974; Gebser, 1985; Gardner, 1993; Beck & Cowan, 1996; Wilber, 2000), and perspectives on social change and macrohistory (Galtung & Inayatullah, 1997; Inayatullah, 1998b). It is shown in Table 1.

<table>
<thead>
<tr>
<th>Layer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>event</td>
<td>discrete events and occurrences</td>
</tr>
<tr>
<td>trend</td>
<td>patterns, trends, pop/litany</td>
</tr>
<tr>
<td>system</td>
<td>system drivers, social causes, policy analysis</td>
</tr>
<tr>
<td>worldview</td>
<td>mental models, discourses, perspectives</td>
</tr>
<tr>
<td></td>
<td>myths, metaphors, symbols, images</td>
</tr>
<tr>
<td></td>
<td>intelligences, types, structures, modes</td>
</tr>
<tr>
<td>historical</td>
<td>social change and related forces and factors</td>
</tr>
<tr>
<td></td>
<td>historical factors and forces</td>
</tr>
<tr>
<td></td>
<td>macro-historical factors and forces</td>
</tr>
</tbody>
</table>

Table 1: An adapted layering scheme; adapted from Voros (2005)

The particular layers are described in more detail below. The bold word is intended to function both as a mnemonic and as a descriptor of the main features of that level. Briefly, they are:

- **event**: the level of discrete events which are observed to occur in the world. These are usually conceived to be occurring independently of each other. This is the topmost level of the well-known ‘systems iceberg’ metaphor. The attempt to relate them to one another or search for regularities generally leads to the next level of analysis:

- **trend**: the level at which ‘patterns and trends’ are observed, just below the ‘water line’ in the systems iceberg metaphor. This represents the ‘pop’ level of Slaughter and, together with the level above, the ‘litany’ level of CLA.

- **system**: the level at which ‘systemic structure’ is discerned in the systems iceberg. This is the problem-oriented level of Slaughter and the level of social causes (and policy analysis) in CLA.

- **worldview**: the level of mental models, worldviews, modes and types of thinking, and cognition and consciousness in general. This level encompasses the critical (and most of the epistemological) level of Slaughter, the worldview/discourse and myth/metaphor levels of CLA, and the forms of cognition and consciousness discussed by Gebser.
A classification framework for prospective methods

Gardner, Graves, Wilber, and Beck and Cowan. It is the level where metaphors and ‘images’ of the present, and thus also potentially of the future, are analysed in CLA.

- **historical**: the level of societal, historical and macrohistorical change. It is the level of the ‘conditions of existence’ discussed by Graves and Beck and Cowan, and social, historical and macrohistorical change discussed by Galtung and Inayatullah. At this, the deepest level of interpretive depth, the scope—in both space and time—of the interpretative framework could involve just one society, a number of societies or civilisations or, on the grandest of all scales, might also encompass cosmology and Universal evolution (this idea will be further developed elsewhere).

In the next section, these five levels of interpretive depth will be used as a basis to examine, analyse and classify some of the prospective methods which are used in FS and foresight work.

4 Mode-Level Analysis

In this section, the approach being called ‘mode-level analysis’ is sketched. This technique can be employed to classify prospective methods according to the ‘mode’ of prospection and the level of ‘depth’ at which they are used.

4.1 In theory

In essence, the basic idea and set-up are very simple indeed: for our present purposes we have identified two major ‘modes’ of prospective thinking, and five specific levels of interpretive ‘depth’. Having done so, we can construct a table showing the five layers of depth being employed in combination with the two thinking modes being used in this analysis. This schema obviously represents but one possible case—others can be generated by choosing a different layering scheme and/or different modes of thinking. The resulting layout is shown in Table 2.

<table>
<thead>
<tr>
<th>level</th>
<th>mode</th>
<th>E.</th>
<th>R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>event</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>trend</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>worldview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>historical</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 2**: Mode-level analysis table of prospective methods, in terms of thinking mode vs interpretive level

With the simple ‘back-of-the-envelope’ system shown in Table 2, we can begin to discuss and assign particular classes to prospective methods by way of the letter-number pairs shown in the (thinking mode) columns and (interpretive depth) rows, respectively. This is what is being called here ‘mode-level analysis’ of prospective methods; namely, for any prospective method, we can analyse the particular interpretive level(s) used and the specific prospective thinking mode(s) operating.

4.2 In practice: classifying prospective methods

An interesting and useful technique which is occasionally employed in foresight work is that of wildcards (see, for example, Petersen, 1997), sometimes also called ‘surprises’, ‘discontinuities’ or ‘shocks’ (see van Notten et al., 2005, for a review of their use in, especially, scenario development). (One possible use for wildcards in organisational foresight work was also described in Voros, 2003). Let us examine this technique according to the mode-level analytical schema shown in Table 2. Wildcards are usually defined as ‘high-impact, low-probability events which, if they occurred, would cause major disruption’ (Petersen, 1997). From this definition, one might classify the use of wildcards, as a prospective tool/method, as type \( R1 \), because they are clearly discontinuous, or mode \( R \) in nature—i.e. they do not evolve, but rather just occur—and they are located ontologically at the level of event (level 1).

One of the early archetypal futures methods was forecasting; the early futures literature abounded with discussions of it, and several journals devoted to ‘forecasting’ were founded. (Historically, the term ‘forecasting’ has sometimes also been used to mean any form of ‘casting forward’ to create views of the future, such as, for example, by Glenn (1999b), or Coates (1999). The term ‘prospection’ has been preferred here as the generic term for such ‘casting forward.’) Early forms of forecasting were methods which projected forwards in time a trend noted in the past and extending to the present. This part of the method is ‘analytical’ as it deals with analysing past data through trend analysis. When the trend is extrapolated, or inferred or assumed to have some continuity from the present into the future, then we have the actual ‘prospective’ part of the method. In the above schema, ‘extrapolative’ methods are, in general, mode \( E \), irrespective of which level of depth they operate. And, given that forecasting has generally tended to be used at the level of trend (that is, level 2), we can see that it is thereby possible to classify it as essentially a type ‘\( E2 \)’ prospective method in the schema defined above.

Of course, futurists who look at trends are often also concerned with possible ‘trend breaks’ or so-called ‘counter trends’ or ‘discontinuities’ which ‘go against’ the trend dynamics. This is clearly mode \( R \) thinking, as it looks for disjunctions or reversals in the trends. Thus, the search for ‘trend breaks’, ‘counter trends’ or ‘discontinuities’ at the trend level can be classed as type \( R2 \) prospection.

Another archetypal prospective method is visioning which had a strong presence in the early futures literature, but which seems to have become somewhat lower-key recently (although see, for example: Bezold, 2000; Ziegler, 2000). In visioning, in its original form, participants in the visioning exercise were invited to imagine entirely new visions or images of the future, without necessarily worrying too much about how they would be brought about, or about how different they were from current reality. This is clearly mode \( R \) futures thinking. In the schema above, metaphors, images and visions are considered to be part of the worldview level, so visioning is classed here as a type \( R4 \) prospective method. Despite the apparent relative freedom to imagine or envision any image, Dator (1979; 2002) and also Schultz (2001) have suggested that there are really only a handful of ‘generic’ types of futures images into which most images of the future can be classed.

A related method is backcasting (see, for example, Robinson, 1990; Dreborg, 1996). In this approach, a vision or image of the future is first created, and then the series of steps needed to arrive there is worked out ‘backwards’, as it were, from the future end-state to the present-day starting point. This is a kind of ‘reverse evolutionary’ form of thinking which starts with a vision (type \( R4 \) prospection) and works backwards at the level of things-which-need-to-be-done or events-which-need-to-be-made-to-happen. This latter type of thinking is similar to class \( E1 \) (although the use of evolutionary thinking in the reverse time direction might be considered sufficient to warrant introduction of an altogether different mode of thinking). Backcasting is thus a mixed method, \( R4-E1 \), which uses elements of both mode \( R \)
and mode **E** thinking, at different levels of depth, and is essentially what Glenn (1999b, p.7) and Coates (1999, p.1) call ‘normative forecasting’.

**Macrohistory** as an interpretive method attempts, by its very nature, to uncover general ‘laws’ of social or historical change. As such, it is clearly located at the **historical** level of analysis in the present schema. Macrohistorians seek a ‘**general** theory of history’, rather than merely a theory or model of a specific case of the history of a certain society or civilisation (see, for example, Galtung & Inayatullah, 1997; Inayatullah, 1998b). As such, these theories tend towards what Inayatullah (2002b, p.300) calls ‘grand narratives’: narratives on the grand scale of entire civilisations. These models usually include some form of dynamics, which latter give rise to the unfolding of history in that model. Thus, if—when using a model of social change or macrohistory as the basis for prospection—we were to evolve the putative historical dynamics forward in time, we would clearly then be using type **E5** prospection. If, instead, we look for breaks, reversals, discontinuities or ‘shocks’ in the putative historical dynamics (or if we use a particular macrohistorical model which is not by its nature evolutionary) then we would be using type **R5** prospection. There are many theories of social change, and many theorists of macrohistory, so this area is potentially a very fruitful and fascinating foundation for prospection. One can look for large scale ‘big picture’ changes at the deep **historical** level, with the scope of prospection being limited only by the scope of the macrohistorical framework being analysed—and the degree of ambition of the would-be ‘big picture’ thinker!

Other related methods which have received interest recently are **counterfactuals** and **alternative histories** (see, for example, Tetlock & Belkin, 1996; Ferguson, 2000). In this technique, one imagines how certain occurrences or series of occurrences from history may have gone differently or had different outcomes, and then imagines the trajectory through time which the thereby ‘alternative’ history then takes. As this method operates at the **historical** level, it is clearly level **5** in the present schema. Interestingly, it also makes use of each of the two archetypal modes of thinking discussed here: mode **R**, by imagining a complete disjunctive change in the actual past; and then mode **E**, by evolving that ‘new and different’ world forwards in time. Thus, this is another method making use of mixed modes of thinking, and it may be reasonably classed as a type **R5-E5** method. On the other hand, it can also be reasonably argued that sometimes it is a **single event** which changes the world in these alternative histories, so there is some resonance with wildcards, albeit located in the past rather than in the present/future. Perhaps that particular form of alternative history is better classified as type **R1-E5**: a **revolutionary event** or wildcard (in the past) occurs, and then the world is **evolved** forward in time through social and **historical** processes. The wrinkle here is that the starting point for the evolutionary thinking is some point in time **other** than the present, which latter is usually the case, but for which there is no logical necessity. Science fiction is a fruitful source of writing based on this type of approach (see, for example, Duncan, 2003).

Of course, the best-known of the prospective methods is the method of ‘scenarios’—see van Notten et al. (2003) for a typology, Bradfield et al. (2005) for a discussion on the origins of scenario planning, and Chermack (2005) for a beginning outline of a theory of scenario planning. The term ‘scenario’ itself is somewhat imprecise, and is used in a great variety of ways—in the futures literature, within the foresight practitioner community, and outside in the general populace. It is also sometimes used interchangeably with ‘vision’. In fact, the term is so laden with implied meanings that some discussion is necessary first before we look at how ‘the’ method of ‘scenarios’ might be classified according to the above schema.

A ‘scenario’ is generally conceived as a narrative structure outlining, to a greater or lesser degree of detail, how certain dynamics of change occur over time. It is usually not a description of a static endpoint, although the term is sometimes used to mean that as well (for example, one can sometimes find wildcards described as ‘mini-scenarios’). Rather, the
emphasis is generally on a playing out over time of certain dynamical assumptions about how the world being modelled operates. These assumptions are the ‘logics’ of the scenario worlds, and these logics are usually contrasted with each other in the different members of a complete set of scenarios (generally between two and five in total). Thus, a scenario is an analysis cast in narrative form, and is thereby able to borrow heavily from the human propensity to remember well-crafted stories and plots with relative ease, which latter may account for their popularity. The term itself, of course, comes from the dramatic and theatrical arts. Authors such as Shearer (2004) advocate explicit use of dramatic techniques and narrative devices to properly flesh out and create interesting and memorable scenario narratives, and Schwartz (1996) lists several generic types of ‘plots’ which can be used to construct scenario narratives.

Given the above, almost any collection of quasi-consistent dynamical factors can be used as the foundational logics or organising principles of a scenario world, and one can easily find examples of sets of scenarios which have used trend-level or system-level drivers as the basis of the fundamental dynamics. It is rarer to find scenarios based upon worldview-level factors, although a notable case-in-point are the scenarios produced by Royal Dutch-Shell in 2002 which are a recent example of what Davis (2002) calls the ‘incremental’ form of scenario construction (a default ‘official future’ with an alternative). In this case, the default ‘official future’ is Business Class, effectively based on a modernist worldview, with the ‘alternative scenario’ being Prism, based on a post-modernist one. Descriptions of the main characteristics of these two worldviews can be found in Beck and Cowan (1996) or Voros (2001) where they are called ‘orange’ and ‘green’ respectively. Ray and Anderson (2000) call these worldviews ‘modern’ and ‘cultural creative’, respectively. It is much rarer still to find scenarios based on dynamics at the historical level although, as noted above, these would seem to be amongst the most interesting, especially with respect to societies, nations and ‘world futures’.

All of these scenario-construction techniques are characterised by mode E thinking—albeit at different levels of depth, as different levels of dynamics are evolved forward in time—whether at the trend, system, worldview or historical level. Thus, scenarios in general are characterised by mode E thinking.

For some scenario practitioners, the search for a strong central image or metaphor to make the scenario memorable and organise the information collected is a key part of the work, as related by, for example, Flowers (2003). For others, it is a central image/metaphor which is sought first, and the transition to the scenario world fleshed out afterward, in large measure from the inherent power of the image or metaphor characterising the future world. For example, Inayatullah (pers. comm.) often uses the myth/metaphor level of CLA to directly create the central metaphor of a scenario, moving directly to the essence of the scenario world in one jump. In the above classification schema, this would be classed as type R4 prospection, so this approach is similar to visioning. However, it differs from visioning by considering a set of alternatives rather than a single future, which is the more usual outcome of a visioning exercise, and by using mode E thinking to chart the different trajectories into the future worlds. Thus, this approach also has resonances with backcasting.

The term ‘scenarios’, it seems, has been used with respect to almost every layer of depth of the present schema. Hopefully, the mode-level analytical framework outlined here has helped to ‘unpack’ the laden term ‘scenario’, and revealed some of the variety of ways they can be created, through the use of logically distinct modes of prospective thinking and ontologically distinct levels of analysis.
5 Discussion

The foregoing section has, hopefully, given the reader a flavour of how mode-level analysis can be used to better understand different approaches to prospection, and the particular utility which each prospective method may have. This understanding is potentially very useful when trying to determine which type or class of prospection is best suited to a client’s way of thinking or preferred mode of interacting with information. As such, mode-level analysis can be used in both a diagnostic mode—analysing what was done in a particular foresight engagement, and how and why it worked or failed—as well as in a design mode—to fashion an intervention best suited to the thinking preferences and styles of the client group or organisation. As with much client-focussed foresight work, the success of the approaches used depends a great deal on the audience or client. Mode-level analysis is another technique which can be used prospectively to better customise the engagement to suit the client, or retrospectively to understand how and why it worked or didn’t.

Operating at greater levels of interpretive ‘depth’ can inform both modes of prospection. For the case of mode $E$ prospection, the deeper the operating level, the ‘further’ forward we may conceptually evolve the dynamics (if such there be). For example, as noted above, an observed trend in the past leading to the present when evolved forward in time gives trend extrapolation forecasting (type $E_2$ prospection). But clearly, projecting a trend intuitively extends a subjectively lesser distance into the future than evolving a system driver (type $E_3$); evolving a worldview extends further still (type $E_4$), and evolving a macrohistorical force extends even further again (type $E_5$). Each of these ‘deeper’ levels give commensurately longer ‘characteristic timescales’ of projection, albeit with commensurately reduced detail possible, as we would tend to consider the characteristic timescales of deeper levels to be longer than those of shallower ones.

For the case of mode $R$ prospection, operating at deeper interpretive levels opens the way to challenge assumptions in an even deeper fashion than may be possible when operating at shallower ones. For example, operating within the system level, one is bound to look for discontinuities or surprises within the prevailing mental models of what constitutes ‘the system’. If, however, one considers the situation from the worldview level, one is able to challenge the very mental models themselves, and look at how changing them may lead to new potential surprises, or different views of what constitutes ‘the system’. To take another example which is even deeper within the worldview level: one might decide to challenge the very assumption of using the ‘rational’ level of mind itself (formal operational thinking, ‘formop’) for prospection by considering forms of thinking ‘beyond’ rationality. That is, to consider the use of post-formal modes of cognition, which latter have been studied for the past couple of decades (see, for example, Commons et al., 1984). Or, perhaps, to engage in using post-rational or even non-rational forms of prospection such as is implicitly suggested by Glenn (1999a). Visioning is potentially such a method, but the level of consciousness from which the visioning emanates conditions and shapes the extent and form of the vision or image produced. The levels of consciousness proposed by Wilber (2000) and Beck and Cowan (1996) are quite useful for understanding this shaping mechanism (a brief outline of both models is found in Voros, 2001). Contrast the images of rational-formop ‘orange’ thinking (e.g. a ‘techno-utopia’) with ‘green’ thinking (e.g. a radical ‘eco-topia’) with post-formal ‘vision-logic’ ‘yellow/turquoise’ thinking (e.g. integrated technology, humanity and nature in a global ‘integral meshworks’). The higher the level of consciousness within which visioning is undertaken, the broader the reach and integrative ability of that level of consciousness, the deeper the potential challenge to existing assumptions, and thus the more possibly radical the ‘creative leap’ or jump. In particular, the myth/metaphor level of CLA is especially fruitful for generating new images of the future, given its focus on imagery and metaphor. It is here, particularly in mode $R$ prospection, that tools of creative thinking might be most
usefully applied, such as those of Edward de Bono (1995).

The classification schema given here is obviously only one example of different possibilities. However, the reader should not lose sight of the fact that mode-level analysis itself is a general approach to thinking about prospection, within which one alters the contours of the analysis by changing the modes and/or levels used. Thus, it is clear that there are two main ways to alter the classifications given here: by changing the modes of thinking employed, and by using different levels of depth. The former are as open as one wishes them to be and, although the two modes E and R were chosen here, there is no a priori requirement to use them—choose another set of modes of thinking and analyse away! (For example, Marien (2002) has characterised futures thinking in a variety of ways.) The latter are as shallow or deep as one wishes them to be, and the levels chosen will depend on how deep a framework can be imagined and how useful are the types of sub-divisions within it. In any case, the only limitation to the contours of mode-level analysis seems to be the ability to imagine other modes and levels to use, so it is potentially a very powerful method in the hands of a skilled practitioner.

One final comment to round out this section: Remember not to reify the present classification schema. It is merely a framework designed to promote and provoke thinking about the methods we use in foresight work, and to wonder about what new methods we may yet invent. The important point is not to try to fit everything into the schema; the important thing is to stop taking methods for granted, ‘as is’, as received wisdom from the elders of FS. Instead, let us continue the work they pioneered, by examining the particular utility of existing methods, and adapting these or even creating new methods to suit our purposes and the ever-changing purposes of the clients of foresight work. For, as we shall see in the next section, the methods we use are themselves changing and have evolved over time.

6 The evolution of prospective methods

As some commentators have observed, futures methods have undergone their own evolution over the preceding several decades. Slaughter (2002b), for example, writes of there having been three or four major phases in the evolution of futures methods. In his view, these have essentially been forecasting, scenarios, social construction, and, most recently, ‘integral’ methods (Slaughter, 2004). Inayatullah (2002b) has suggested an analogous change in futures methods which, in his view, have moved from forecasting toward anticipatory action learning. The former is expert-based and largely positivistic-empiricist; the latter is participatory and largely constructivist (Guba & Lincoln, 1994). A similar progression from expert-led quantitative methods to qualitative and participatory methods can also be seen in the futures methods described by Bell (1997, ch.6). Inayatullah also writes (2002b, p.300) of a move away from shorter-term empiricist research towards longer-term history and grand narratives (i.e. towards deeper macrohistorical forces).

These analyses and commentaries, and others like them which speak of the evolution of futures methods, are very interesting because in them can be found a reflection of the ‘deepening’ of methods with respect to the layers of the five-layer scheme articulated here. This deepening through the layers is explored below.

As mentioned earlier, forecasting (as the term is used here) is essentially a type ‘E2’ prospective method (i.e. an extrapolative method at the level of trend, see Table 2). In the early history of FS, going ‘deeper’ to the level of trends (level 2) represented a definite advance on the general disorientation felt by many people toward the apparently unconnected events going on in the world around them (level 1). This disorientation with respect to more, and more frequent, events led Alvin Toffler (1970) to his now-famous ‘future shock’ thesis. Thus, the move to a deeper view of reality—to the level of trend—gave rise to a new
method of prospection, namely forecasting. This was largely empirical, based on time-series data, was highly quantitative and, as a result, was mostly the domain of experts.

With the development and emergence of ‘systems’ methods in the 1960s, there arose the possibility of new additions to the futurist toolkit—namely, a technique which allowed one to look ‘deeper’ again at what was going on in the world, ‘below’ the trends to the ‘drivers’ of the system at what is being called here level 3. Thus, we find the techniques of ‘systems dynamics’ used, for example, in the now-famous report to the Club of Rome, *The Limits to Growth* (Meadows et al., 1972). The key point here is that a deeper understanding and insight became possible in foresight work because a new and deeper interpretive method became available. This in turn meant that ‘deeper’ forms of prospection could become possible, and thus, with the rise of systems approaches, we find new methods of prospection emerging, most famously, system-driver-based scenarios. The now standard approach to scenarios has, of course, been heavily influenced by the systems approach at level 3 (see, for example, van der Heijden, 1996; Bradfield et al., 2005), although it occasionally touches on the deeper worldview level, by considering ‘mental models’. Some approaches to systems, such as the so-called Soft Systems Methodology (SSM) of Peter Checkland (1999), take much more explicit account of the worldview level—what is being called level 4 here—and are built around examining the *interior* world at least as much as the *exterior* world was analysed in earlier ‘hard’ systems approaches operating at level 3. Indeed, the ‘W’ in Checkland’s famous ‘CATWOE’ mnemonic explicitly reminds us to be fully aware of ‘worldviews’. The late Donella Meadows (1997) wrote a fascinating article describing nine places to intervene in a system, ranging from ‘altering system parameters’ (the shallowest) to the mindset or worldview which ‘sees’ the system (the deepest). And, in fact, she went on to mention an even deeper form of intervention than that: the ability to transcend particular worldviews. It is once a worldview is transcended that the ability to see entirely new things emerges into consciousness.

Another development which brought the worldview level explicitly into consideration was the introduction of critical methods into FS (see, for example, Slaughter, 1999a,b). In this approach, as above for SSM, the focus moves beyond (or, rather, below) the systemic ‘drivers’ of the system and the ‘problems’ to be solved there, to the worldviews which perceive the drivers, and which are, in fact, complicit in creating the very problems needing solution. As there are many, many ways to take a critical stance, there are thereby many new issues, themes and voices which can enter the futures conversation at the critical/worldview level.

In general, a critical approach will focus on an issue, theme or activity; this then defines a dominant or hegemonic worldview, power, structure or privileged group. The definition of a dominant hegemon leads to the co-definition of that which is or those who are thereby ‘other’ to that hegemon. The critical approach will generally be concerned with: elaborating various dialectics taking place within the dominator structure (usually about power and certain freedoms which are considered to be hindered or denied); will analyse the ways and means by which those who are ‘othered’ are so othered; and may argue for ways of re-balancing the systemic power which is absent from those who are seen to have been ‘othered’ by the dominator system.

Here are some examples to illustrate the point. Marxist theory is—boiled down to its very simplest essence—concerned with the class struggle between the owners of the techno-economic means of wealth production (capital) and the workers (who provide the labour). The ‘capitalists’ are the dominant group, the ‘workers’ or ‘labour’ are Other. The dialectic is one of (largely) economic power. Thus, to redress the imbalance, in this view, the workers should have control of the means of production. If the issue is gender, then we have the various forms of feminist theory. The privileged group are males, females are Other, the dominator system is the patriarchy, and there are several dialectics concerning different rights or freedoms: to have choice, to work, to control one’s reproductive destiny, and so
on. If the issue is sexuality, we have queer theory. The dominant group are heterosexuals, gay males and lesbians are Other, the dialectic is usually about freedom of sexual expression and/or the removal of systemic oppressions based upon an assumption of heterosexuality (such as the legal definition of ‘marriage’ in some countries). If the issue is race or ethnicity, then it is usually Caucasians who are considered the privileged group, non-whites are Other, and the dialectics revolve around basic human rights and being treated as human beings with human dignity. (There are variants wherein even some groups of Caucasians are Other to the dominant group. For example, even within Australia’s now infamous ‘white Australia’ policy of the twentieth century one still had Caucasian Others from non-Anglo backgrounds, who were pejoratively called ‘dago’, ‘wog’ and ‘reffo’.) If the issue is colonialism, we have post-colonial theory. And so on. One quickly sees how this sort of critical approach works.

In all of these, and other, critical approaches, issues which are taken for granted within the dominant worldview or by the dominant group are made problematic and thereby explicitly made contestable. This is very valuable as it creates a new perspective on what may be invisible to the dominant group or worldview. However, by its very nature—defining Other in opposition to the ‘dominant’ or hegemonic group/worldview—this form of analysis can often be very adversarial, and this adversarial stance can quickly become an end in itself if we are not very careful. For every Thesis, there can be any number of Antitheses defined, with the Thesis critiqued by a categorical system set up and defined in opposition to it (and, not surprisingly, doing rather badly out of it). This is the essential core of a good deal of post-modernism and especially some of the more tiresome aspects of deconstructionism and the endless game of ‘othering the Otherer’ which can be seen going on in so much of the (post-)modern world. While it is necessary to be aware of this type of approach, it is also good to know when to put it down and focus on producing desirable outcomes rather than on continuing critique, analysis and diagnosis. Focussing on Antithesis is useful only insofar as it helps move towards a Synthesis which transcends both it and the original Thesis.

The recognition of the ‘constructedness’ of our knowledge, which stems from taking a critical stance on the positivistic tradition of epistemology (Guba & Lincoln, 1994), is a key insight; it suggests that ‘reality’ (whatever that is) is not something just lying around passively waiting to be discovered. Rather, in the phrase of Berger and Luckmann (1966), is it actively ‘socially constructed’. This realisation led, in turn, to the more participatory and action-learning based approaches to foresight work, such as described by Inayatullah (2002a) and Bell (1997, ch.6). It was also one of the foundational assumptions of the French school of futures thinking, Prospective (see, for example, Cournand & Lévy, 1973), and the futures work of Betrand de Jouvenel (1967).

Once systems and critical methods had also been introduced into the futurist’s toolkit and gained widespread use, the many different approaches to futures could await attempts to combine them into an overall ‘integrating’ or ‘integral’ methodology, such as is described by Slaughter (2004), and such as is employed by Ramos (2004) to analyse how foresight is practised in Australia. In this view, there is no one single method which is ‘the best’, because all of the methods described can be and are useful, provided they are placed into context, used appropriately, and with an understanding of how they are located in an overall foresight process. And that, ultimately, is the real skill and ‘value-add’ of an ‘integrally-oriented’ foresight practitioner—to choose and use the right methods for the right client at the right time in a particular foresight engagement.
7 Concluding remarks

The key idea of this paper has been `mode-level analysis': the systematic analysis and classification of different types of prospection which may be employed in foresight work, using different `modes' of prospective thinking and based upon different levels of interpretive `depth'. Mode-level analysis can be generalised to any number of modes or levels, depending on the application, context or objectives of the analyst. In the particular taxonomy presented here, two modes of thinking were considered in combination with five layers of depth.

Mode-level analysis may be done for a variety of reasons and used for a variety of purposes: for the sake of academic interest to examine and clarify the range of prospective methods in use; for teaching students and helping them to understand the range of approaches for prospection; and with more practical utility in mind—it may be used prospectively for designing part of a foresight engagement, or retrospectively for diagnosing one.

It is clear that the quality of the forward views or images of the future created during prospection will be dependent on the quality of the inputs, analysis and interpretation undertaken prior to this activity. The level of interpretive depth must be commensurate with the aims and objectives of the client of the work—it may cause some dissonance if the practitioner works at the macrohistorical level when the client is primarily interested in trends—although part of the value and skill of the practitioner may precisely be to help clients ‘see deeper’ than they have before. By consciously considering and deciding upon what levels of depth are appropriate for a foresight engagement, it is possible to ‘match’ the characteristics of the engagement to the requirements of the client, or, possibly, to ‘lead’ them to a deeper insight than they imagined was even possible from such an engagement. In addition, the types of prospection used also need to be commensurate with the manner by which the client or client organisation prefers to interact with and absorb with new information. By employing mode-level analysis, one is thereby able to further ‘tune’ the characteristics of and methodologies used in the prospection phase of the engagement to better suit the needs of the client.

The historical evolution of futures methods described in this paper obviously begs for extension into the future. Mode-level analysis is a general approach to thinking about prospection, and one may alter its contours and taxonomy by choosing different modes of thinking and/or different levels of depth. While this represents a way of generalising the technique, it also represents a way to generate ideas for new forms of prospection. In this way, mode-level analysis could also be used to look for or produce methods which are also ‘prospective’ in the sense that they await invention and subsequent incorporation into the futurist’s toolkit. It is hoped that this technique might contribute to the creation and refinement of new prospective methods in order to expand the repertoire of tools which futurists use to prospect the future.
Notes

1. In Voros (2005), a generalised system for viewing the world as made up of distinct ‘layers of reality’ was presented, which consisted of four major ‘bands’ or ‘strata’ of depth which sit ‘below’ the default ‘surface’ view of discrete events and occurrences. These layers were: constructs of thinking; contents of thinking; capacities of thinking; and conditions of existence, and were derived from the sources mentioned in the main text. The following table shows a slightly adapted form of the layering schema presented in that paper, for purposes of comparison:

<table>
<thead>
<tr>
<th>Layer</th>
<th>Exterior</th>
<th>Interior</th>
<th>Artifacts</th>
<th>Processes</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. constructs</td>
<td>exterior</td>
<td>artfacts</td>
<td>patterns, trends, pop/litany</td>
<td>mental models, worldviews, discourses</td>
<td>conditions of existence, social change</td>
</tr>
<tr>
<td>2. contents</td>
<td>interior</td>
<td></td>
<td>system drivers, social causes</td>
<td>myths, metaphors, images, ‘deep’ stories</td>
<td>historical/macrohistorical factors and forces</td>
</tr>
<tr>
<td>3. capacities</td>
<td></td>
<td></td>
<td>multiple intelligences, types of thinking</td>
<td>structures in and ‘modes’ of consciousness</td>
<td></td>
</tr>
<tr>
<td>4. conditions</td>
<td>exterior</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: The generalised layering schema; from Voros (2005)

One can easily see how the layering scheme shown in Table 1 is derived from the generalised schema depicted in Table 3.

2. See <www.shell.com/scenarios/>

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