

CAUSAL LAYERED ANALYSIS: AN INTEGRATIVE AND TRANSFORMATIVE THEORY AND METHOD

by

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Inayatullah's "Causal Layered Analysis" is the first major new futures theory and method since Delphi, almost forty years ago. CLA is a very sophisticated way to categorize different views of and concerns about the futures, and then to use them to help groups think about the futures far more effectively than they could by using any one of the "layers" alone, as most theory/methods do.

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ABSTRACT

Causal layered analysis (CLA) is offered as a new futures research theory and method. As a theory it seeks to integrate empiricist, interpretive, critical, and action learning modes of knowing. As a method, its utility is not in predicting the future but in creating transformative spaces for the creation of alternative futures. It is also of use in developing more effective – deeper, inclusive, longer-term – policy. Causal layered analysis consists of four levels: the litany, social causes, discourse/worldview, and myth/metaphor. The challenge is to conduct research that moves up and down these layers of analysis and thus is inclusive of different ways of knowing. CLA begins and ends by questioning the future.

I. HISTORY OF THE METHOD

This history section has two dimensions to it: first, the informal personal story of the method, and second, the formal contextual influences. While layered analysis, generally, and causal layered analysis, specifically, has numerous practitioners, this introduction presents the biographical context for my theorizing and systematizing of it.

Growing up in the field of Futures Studies in the late 1970s and early 1980s at the University of Hawaii, Department of Political Science, I was struck by the tensions embedded at the Department. The empiricists were focused on data, seeking to make the study of politics far more scientific and rigorous. The poststructuralists, on the other hand, were focused on the politics of meaning, seeing debates on electoral politics as trivial and empiricism as trite since it failed to account for culture, class, and language. Somewhere in this mix was Futures Studies, as taught and developed by James Dator, the head of the Alternative Futures Program in the Department. The empiricists challenged approaches to the study of the future to be far more empirically based. The poststructuralists called for futures studies to be located in critical theory, not just based on superficial analyses of trends. However, the tension was not just in these two camps. A third, the interpretive school, was interested in neither the disinterest of science (removing values and language from the truth of a position) nor the distancing of poststructuralism (challenging categories) but rather in creating shared discourses, in creating authentic meaning and conversation. This interpretive perspective saw the empiricists and the poststructuralists as extremes. A fourth position – generally that of the Hawaii Research Center for Futures Studies – was focused on applied knowledge, on certainly being well versed in theory, knowing empirical methods, but as well having clarity on values (preferred futures) and learning by doing.

My effort over the years I spent at the University of Hawaii, as an undergraduate from 1975-1979 and for my MA from 1979-1981 and later for my Ph.D. from 1987-1990 was somehow to integrate these varying positions. Of course, this is all on reflection. During those times, like other students, I was involved in the debates, changing positions every few years, amazed at the strength of conviction held by the various actors.

Besides these schools of thought, tension existed between those who saw individuals and human agency as primary and those who focused on actor-invariant, or structural theories of change

(generally neo-Marxists). As well, there were the poststructuralists seeing issues of social change at a deeper level, at the level of the episteme (historical and civilizational). Finally was the emerging New Age/Green spiritual perspective focused on change through creating new stories about what it means to be human.

Later in the 1990s when I began to develop my own view of futures studies, it was obviously not an accident that I employed these multiple perspectives as they had become my intellectual context.

More formally, causal layered analysis grew out of numerous influences. First was from Johan Galtung's notion of deep civilizational codes, which he argues lie underneath the day-to-day actions of nations.² To truly understand international relations, we need to go beyond official national positions and understand them from their civilizational origins, stated Galtung. Thus, he compared American expansion with the rise of Rome. From this he argued that there were foundational similarities in terms of codes towards nature, others, and women, and macrohistorical trajectory. As well, Indic and Sinic civilizations, alternatively, have had different codes. His task was to discover the traumas in history, the 'CTM syndrome'—civilization, trauma and myth—and use it as a theory to explain the actions and identity formation of nations. I took this to mean that we need to go beyond the visible actions of nations, to their historical causes, to the cosmologies (or worldviews) that contextualize their behavior, and to the origin myths that explain and give the entire project meaning.

In terms of research, politics and methodology (or politics in methodology) are not only institutional but also civilizational. He argues that the questions asked and the research style and conclusions realized are derived from culture (in evolutionary interaction with environment and historical structures) and over time become frozen.³

Michel Foucault—largely through the interpretation of Michael Shapiro—was equally influential. His epistemes, or historical frames of knowledge, are primary in understanding how particular nominations of reality become naturalized.⁴ Genealogy explains why. Foucault saw his work as anti-methodological, but I could see that by putting together deconstruction with genealogy, a multi-layered methodology could emerge. Moreover, the methodology could be appropriately theorized within Foucault's framework.

However, even multiple perspectives seemed inadequate. Alternative futures and alternative renderings of reality are useful in opening up the straitjacket of modernity but only place research in the relativism of postmodernism—every frame is equally valued.

In contrast, far more appropriate is the notion of reality as vertically constructed instead of the poststructural notion of alternative horizontal discourses. This perspective is derived from Indic (Tantric) philosophical thought – best developed by the spiritual teacher P.R. Sarkar - which asserts that the mind is constituted in shells or *kosas*.⁵ Moving up and down the shells is a process of moral and spiritual enlightenment. Going deeper into the mind is an inward process through which truths are realized. Finally, for Sarkar all research had an inner and outer dimension (interpenetrating and overlapping subjectivity and objectivity), insight was gained by

mapping and discovery of both realms. Successful strategy had to transform self and society, simultaneously.

In futures studies, I was influenced by Richard Slaughter's elegant typology of futures studies into popular futures, problem-solving, and epistemological futures.⁶ I could see that the various typologies being offered with extensive rethinking and reworking could be developed into a methodology.

Thus, from the influences of Galtung, Foucault, and Sarkar as well as Slaughter in the futures field, causal layered analysis was formed. As with all methods, there has been a continuous effort to improve and refine the methodology.⁷

In the evolution of the method, complexity theory and Jungian-gestalt psychotherapeutic approaches have been particularly useful.

Complexity theory suggests that the future is patterned and chaotic; that is, it can be known and it is unknown, or explained but not accurately predicted. This 'both-and' perspective is especially useful in reconciling classical dichotomies such as agency (individuals can influence the future) and structure (structures define individuals and limit what is possible). The other important insight complexity and chaos theory have contributed is that qualitatively different states can emerge from less complex states. Finally, to understand the future, we should not be lulled into a single variable approach (the or a theory of everything) but rather we must include many variables and – this is crucial – many ways of knowing. At the practical level of day-to-day university research operations, this means that along with traditional notions of expertise, we need to not only ensure that a futures research team has better gender and cultural representation but that the research and discovery process is open to different ways of knowing.

Moving from the external to the internal, the works of psychotherapists Hal and Sidra Stone⁸ and other gestalt-Jungian approaches⁹ have been useful in creating/discovering an inner dimension to CLA. The Stones seek to create inner maps of the self. These (systems) maps can then be used in a process of voice dialogue wherein sub-personalities express their needs and desires to other parts of the self. These differing desires can be constructed as inner scenarios, alternative inner narratives. Linking the work of the Stones with CLA allows for inquiry into the layers of identity and the different futures that selves perceive and wish for. This allows a rich investigation into the reasons behind the choices we make, whether decision-making is based on a rational assessment of "data" or understood through unexamined worldviews or mediated by foundational metaphors or stories about the future. Rational choices are thus augmented with irrational and post-rational decision-making.

As important as the influences to CLA are its epistemological foundations. Among other mapping schemes,¹⁰ I have divided futures studies into three overlapping research dimensions: empirical, interpretive, and critical.¹¹ A fourth emerging perspective is that of action research. Each dimension has different assumptions about the real, about truth, about the role of the subject, about the nature of the universe, and about the nature of the future.¹²

The CLA approach is unique in that it uses all four – that is, it contextualizes data (the predictive element of the empirical approach) with the meanings (interpretive) we give them, and then locates these in various historical structures of power/knowledge – class, gender, varna¹³, and episteme (the critical) along with the unconscious stories that define the episteme. This entire process however must be communicative, that is, the categories need to be derived through doing in interaction with the real world of others – how they see, think and create the future. Also, something must be done after the analysis, that is, action learning must ensue.

However, even as it integrates multiple perspectives, causal layered analysis¹⁴ is to begin with situated in critical futures research.¹⁵ This tradition is less concerned with disinterest, as in the empirical, or with creating mutual understanding, as in the interpretive, but rather with creating distance from current categories. This distance allows us to see current social practices as fragile, as particular, and not as universal categories of thought. They are thus seen as discourse, a term similar to the more popular term *paradigm* but inclusive of epistemological assumptions.

In the poststructural critical approach, the task is not predicting a particular event (as in empirical tradition, the future of population, for example) or on interpretation so as to better understand (the different meanings we give to demography, to population futures¹⁶) but one of making units of analysis problematic (why is population being queried, for example). Thus the task is not so much to better define the future (forecast more accurately or gain definitional agreement) but rather, at some level, to "undefine" the future, to question it. For example, population forecasts are not as important as how the category of "population" has become historically valorized in discourse. For example, why is population being forecast instead of community, we might ask? How might different futures appear if alternative units of analysis are used?

Thus by taking a broader political view, we can query why population is being predicted anyway? Why are growth rates more important than levels of consumption? The role of the state and other forms of power such as religious institutions in creating authoritative discourses – in naturalizing and legitimizing certain questions and leaving unproblematic others – is central to understanding how a particular future has become hegemonic. But more than forms of power, are epistemes or structures of knowledge which frame what is knowable and what is not, which define and bind intelligibility. Thus, while structures and institutions such as the modern state are useful tools for analysis, they are seen not as universal but as particular to history, civilization, and episteme (the knowledge boundaries that frame our knowing).

The poststructural approach attempts to challenge – leads us to question - trends given to us in the futures literature as well as to discern their class basis, as in conventional neo-Marxian critical research. The issue is not only what are other events/trends that could have been put forth, but how an issue has been constructed as an event or trend in the first place as well as the "cost" of that particular social construction – what paradigm is privileged by the nomination of a trend or event as such.

Using other ways of knowing, particularly categories of knowledge from other civilizations, is one of the most useful ways to create a distance from the present. For example, in our population example, we can query "civilization", asking how do Confucian, Islamic, Pacific or Indic civilizations constitute¹⁷ the population discourse. Scenarios about the future of population are

unpacked since the underlying category of the scenario, in this case population, is contested. At issue is how enumeration – the counting of people – has affected people's conception of time and relations with self, other, and state.¹⁸

The goal of critical research is thus to disturb present power relations through challenging our categories and evoking other places or scenarios of the future. Through this historical, future, cultural, and civilizational distance, the present becomes less rigid; indeed, it becomes remarkable. This allows spaces of reality to loosen and new possibilities, ideas, and structures to emerge. The issue is less what is the truth but how truth functions in particular policy settings, how truth is evoked, who evokes it, how it circulates, and who gains and loses by particular nominations of what is true, real and significant.

In this approach, language is not symbolic but constitutive of reality. This is quite different from the empirical domain wherein language is seen as transparent, merely in a neutral way describing reality, or as in the interpretive, where language is opaque, coloring reality in particular ways.¹⁹

Central to the interpretive and critical approach is the notion of civilizational futures research. Civilizational research makes problematic current categories since they are often based on the dominant civilization (the West in this case). It informs us that behind the level of empirical reality is cultural reality (reflections on the empirical) and behind that is worldview (unconscious assumptions on the nature of the real).

While the postmodern/poststructural turn in the social sciences has been discussed exhaustively in many places,²⁰ my effort is to simplify these complex social theories and see if poststructuralism can be used as a method, even if it is considered anti-method by strict "non-practitioners".²¹

By moving up and down levels of analysis, CLA brings in these different epistemological positions²² but sorts them out at different levels. The movement up and down is critical; otherwise a causal layered analysis will remain concerned only with better categories and not wiser policies. By moving back up to the litany level from the deeper layers of discourse and metaphor, more holistic policies result. Not only are they more holistic but also by tapping into deeper levels of "reality" they lead to solutions focused on the long term.

What makes layered approaches different, then, is that the vertical gaze is not lost sight of in the move to complexity and eclecticism. Hidden meanings and ideologies, structure and consciousness, and myth and metaphor are not seen as outside of foresight but as part of the enrichment process. They are not included randomly but in a disciplined manner. This discipline comes from layering.

However, as Peter Bishop has pointed out,²³ by locating CLA within critical futures research, certain problems do arise. The most significant problem is that the deeper values are considered better than the litany. There are multiple dimensions of this worth addressing. First, within critical theory, certainly the present is considered problematic, not the best of worlds. At a macro level, the litany is the uncontested reality fed to us by the larger capitalist/sensate system, globally. In the former Communist world, the litany was the official truth as developed by the

Party-Military-Police. In the Islamic world, it is the particular interpretation of the Quran by feudal mullahs that is constructed as universal. However, this does not mean that if there is another type of society in the future – for example, a global planetary spiritual ecological gender partnership society (the vision of sustainability as being developed by various world social forums) the litany will disappear. Rather a new litany will appear. It may be more "humane" and planet-friendly, but the assumption of critical futures theory is that it too over time will become reified, congealed, closed to interpretation – hegemonic. Thus, every system creates its own litany (and other levels).

Thus, even as the method challenges the particular world system and the worldview that sustains it, it is not explicitly directed toward another type of system. However, for an actor that is deriving intellectual, financial, or epistemic benefits from the current system, certainly a method such as CLA will be uncomfortable, since it will reveal his or her interests, including challenging the position that he or she is interest-free!

Thus, an actor who is committed to the present system may find CLA confrontational. However, this method is not anti-empirical (or anti-interpretive, or anti- any layer). Empirical research can help in providing evidence of reality. For example, there is increasing evidence that health practices from other traditions (transpersonal, Indic, Chinese) offer benefits.

However, by and large, within the empiricist framework, the goal is to offer better litanies without challenging the overall project. For example, in health research focused on quality and safety in the system, the goal is to train doctors so that there are fewer mistakes. More recently, there have been efforts to investigate the health system in search of inefficiencies (level two within the CLA framework). However, there is far less concern for the deeper issue of the vertical relationship between doctor and patient that is at the heart of the quality and safety issue. In this sense, CLA quite clearly argues for a vertical approach, where deeper layers allow the litany to be contested, opened up, and questioned.

Again, for a strict empiricist, who seeks to control for other levels of reality, this is difficult (inappropriate) since CLA seeks to contextually include these levels. This does not mean that in the actual experiment bias is allowed in but that in the design of the experiment others' levels are used to develop more effective designs, so that, after the experiment, other levels are consulted.²⁴

Further, the postmodernist will find CLA difficult since all levels are equated; reality is totally relativized. CLA does place a "higher" value on depth but does not call for ending up at the deeper levels. Movement (up and down levels) is the key. Remaining at the worldview or myth level without attention to the systemic or the litany is as well a recipe for disaster.²⁵

However, in sympathy with Bishop's concern, CLA can be used in ways not necessarily challenging of the current world problematique. For example, the litany can be seen as the set of visible characterizations, for example, that "Johnny can't read." At the system level, the issue is to interrogate the system that produces low reading levels, or low math scores. Information flows between parent, teacher, principal and child can be tracked. At the worldview level, foundational views of education can be explored. These can remain system-based (the view of government, the view of parents, teachers' perspectives, for example) or more challenging, such as the de-

schooling movement. Finally, at the myth metaphor level, origin stories of education can be excavated.

While CLA begins with poststructuralism it does not conclude there. It differs from tamer forms of poststructuralism (which seek only to problematize) through its link to Futures Studies. CLA seeks to deconstruct and reconstruct. Unpacking issues is relevant to challenging underlying stories, but it is not just for intellectual curiosity that this is done – rather, the purpose is to deconstruct so that alternative futures can be investigated and desired futures created. CLA thus has a transformative dimension. In this sense it is an integrative theory of knowledge and methodology of futures studies. While CLA begins with critical theory – via the work of Foucault – it concludes with the work of grand futures thinkers such as Sarkar, who sought to create new worlds at inner (new maps of the self) and outer (new maps of society, economy and policy) levels for individuals, collectivities and the planet.

In the past decade through over a hundred workshops and numerous doctoral and masters' theses, CLA has moved from being a critical tool for futures pedagogy to a policy tool for governments, cities, corporations, nongovernmental organizations and associations. It has been used, for example, in national, state and local policy and strategy development in areas such (1) Human resources, (2) Workforce challenges in Policing, Health, Education, and new industries such as Information and Communication Technologies, (3) Science, (4) Innovation, (5) Ageing, (6) Infrastructure planning (highways or broadband) for Transportation departments, (7) University strategic planning, (8) Defense, (9) Disability, (10) Sustainability, (11) Industry and Trade, and (12) New product development. These policy workshops and policy planning processes have refined CLA, both in terms of theory but particularly in terms of making it more "user-friendly" for Ministers, CEOs, policy planners and activists.

As theory and method, CLA continues to evolve.

II. DESCRIPTION OF THE METHOD

CLA while strongly situated in theory has developed through doing. Through dozens and dozens of actual uses of the method in a variety of settings – international organizations, national and state government ministries, universities, associations, non-governmental organizations, and business clients – the method has evolved, and has been refined in the process. For example, while a doctoral student may use the method to organize different sorts of "data": quantitative, qualitative, and critical, a company may use it to develop different sorts of products and services.²⁶ An institution may use it to articulate its strategy for different contexts (for example, students, professors, the community, the government, various boards) with different temporal expectations (immediate needs, mid-term needs, long-term needs). Finally, it has developed through repeated exercises in many nations (USA, Australia, New Zealand, Malaysia, Andorra, Thailand, Taiwan, Singapore, Germany, Netherlands, Austria, and Pakistan, to mention a few) and in meetings where the group was represented by multiple cultures. Thus, over a decade, as any useful method must, it has survived the test of person, gender, culture, and institutional/organizational diversity. That said, there is a clear structure to the method.

CLA assumes four levels. The **first** level is the "litany" – quantitative trends, problems, often exaggerated, often used for political purposes – (overpopulation, for example) usually presented by the news media. Events, issues and trends are not connected and appear discontinuous. The result is often either a feeling of helplessness (what can I do?) or apathy (nothing can be done!) or projected action (why don't they do something about it?). This is the conventional level of most futures research that can readily create a politics of fear.²⁷ The litany level is the most visible and obvious, requiring little analytic capability.²⁸ Assumptions are rarely questioned.

The **second** level is concerned with social causes, including economic, cultural, political, and historical factors (rising birthrates, lack of family planning, for example). Interpretation is given to quantitative data. This type of analysis is usually articulated by policy institutes and published as editorial pieces in newspapers or in not-quite academic journals. If one is fortunate, then the precipitating action is sometimes analyzed (population growth and advances in medicine/health, for example). This level excels at technical explanations as well as academic analysis. The role of the state and other actors and interests is often explored at this level. The data is often questioned; however, the language of questioning does not contest the paradigm in which the issue is framed. It remains obedient to it.

The **third**, deeper, level is concerned with structure and the discourse/worldview that supports and legitimates it (population growth and civilizational perspectives of family; lack of women's power; lack of social security; the population/consumption debate, for example). The task is to find deeper social, linguistic, cultural structures that are actor-invariant (not dependent on who are the actors). Discerning deeper assumptions behind the issue is crucial here as are efforts to develop a new vision of the problem. At this stage, one can explore how different discourses (the economic, the religious, and the cultural, for example) do more than cause or mediate the issue but constitute it. It investigates how the discourse we use to understand is complicit in our framing of the issue. Based on the varied discourses, discrete alternative scenarios can be derived here; for example, a scenario of the future of population based on religious perspectives of population ("go forth and multiply) versus a cultural scenario focused on how women's groups imagine birthing and child raising as well as their roles in patriarchy and the world division of labor. These scenarios add a horizontal dimension to our layered analysis. The foundations for how the litany has been presented and the variables used to understand the litany are questioned at this level.

The **fourth** layer of analysis is at the level of metaphor or myth. These are the deep stories, the collective archetypes - the unconscious and often emotive dimensions of the problem or the paradox (seeing population as non-statistical, as community, or seeing people as creative resources, for example). This level provides a gut/emotional level experience to the worldview under inquiry. The language used is less specific, more concerned with evoking visual images, with touching the heart instead of reading the head. This is the root level of questioning. Questioning, however, itself finds its limits since the frame of questioning must enter other frameworks of understanding – the mythical, for example.

This fourth level takes us to the civilizational level of identity. This perspective takes a step back from the actual future to the deeper assumptions about the future being discussed, specifically the non- or post-rational". For example, particular scenarios have specific assumptions about the

nature of time, rationality and agency. Believing that the future is like a roll of dice is quite different from the Arab saying of the future, "Trust in Allah but tie your camel" which differs again from the American vision of the future as unbounded, full of choice and opportunity. For the Confucian, choice and opportunity exist in the context of family and ancestors and not merely as individual decisions.

In workshops on the future outside of the West, conventional metaphors such as a fork in the road, the future as seen through the rearview mirror, or traveling down a rocky stream, rarely make sense. Others from Asia and the Pacific see the future as a tree (organic with roots and with many choices), as a finely woven carpet (with God as the weaver), as a coconut (hard on the outside, soft on the inside) or as being in a car with a blindfolded driver (loss of control).²⁹

Deconstructing conventional metaphors and then articulating alternative metaphors becomes a powerful way to critique the present and create the possibility of alternative futures. Metaphors and myths not only reveal the deeper civilizational bases for particular futures but they move the creation/understanding of the future beyond rational/design efforts. They return the unconscious and the mythic to our discourses of the future – the dialectics of civilizational trauma and transcendence become episodes that give insight to the past, present and future.³⁰

Causal layered analysis includes this metaphorical dimension and links it with other levels of analysis. It takes as its starting point the assumption that there are different levels of reality and ways of knowing. Individuals, organizations and civilizations see the world from different vantage points – horizontal and vertical.

Thus, causal layered analysis asks us to go beyond conventional framing of issues. For instance, normal academic analysis tends to stay in the second layer with occasional forays into the third, seldom using the fourth layer (myth and metaphor). CLA, while certainly calling for depth analysis, does not focus on or epistemologically privilege a particular level. Moving up and down layers we can integrate analysis and synthesis, and horizontally we can integrate discourses, ways of knowing and worldviews, thereby increasing the richness of the analysis. What often results are differences that can be easily captured in alternative scenarios; each scenario in itself, to some extent, can represent a different way of knowing. However, CLA orders the scenarios in vertical space. For example, taking the issue of parking spaces in urban centers can lead to a range of scenarios. A short-term scenario of increasing parking spaces (building below or above) is of a different order than a scenario which examines telecommuting or a scenario which distributes spaces by lottery (instead of by power or wealth) or one which questions the role of the car in modernity (a car-less city?) or deconstructs the idea of a parking space, as in many third world settings where there are few spaces designated "parking".³¹

Scenarios, thus, are different at each level. Litany-type scenarios are more instrumental, social level scenarios are more policy-oriented, and discourse/worldview scenarios attempt to capture fundamental differences. Myth/metaphor type scenarios are equally discrete but articulate this difference through a poem, a story, an image or some other right-brain method.

Finally, who generally solves the problem/issue also changes at each level. At the litany level, it is usually others – the government or corporations. At the social level, it is often some

partnership between different groups. At the worldview level, it is people or voluntary associations, and at the myth/metaphor it is leaders or artists.³²

These four layers overlap. Using CLA on CLA we can see how the current litany (of what are the main trends and problems facing the world) in itself is the tip of the iceberg, an expression of a particular worldview.³³ Debating which particular ideas should fit where defeats the purpose of the layers. They are intended to help create new types of thinking not enter into debates on what goes precisely where.

Thus, CLA has a factual basis, which is framed in history, which is then contextualized within a discourse or worldview, which then is located in pre- and post-rational ways of knowing, in myth and metaphor. The challenge is to bring in these many perspectives to a particular problem, to go up and down levels, and sideways through various scenarios.

For those engaged in conducting foresight workshops using CLA – whether for government, business, non-governmental organizations or other associations – as important as the theoretical foundations are basic how-to steps. Certainly, in this initial phase of using CLA, observing CLA in action is crucial. However, if this is not possible, there are some important how-to points for the novice.

First, CLA can be used theoretically, for example, as a research method for a doctoral or master's thesis. Done this way, it is best located in critical futures research in particular and poststructural theory in general. However, CLA differs from poststructuralism in that it can be used to offer alternative futures and to help create desired futures. It deconstructs and reconstructs reality.

Second, CLA can be used to better understand oneself. That is, one could simply ask individuals to engage in a CLA with their selves as the research focus. What are my litanies: how do I represent myself to the world? Do I use age, gender, ethnicity, or nation? Then, one could explore the systems of the mind: which are the multiple selves that create my inner constellation, which self is dominant in this system – the vulnerable child, the rebellious teenager, the working adult, the old wise person, for example? The key is to map the full extent of selves. This can be done individually or with others in the working group. In an organizational setting, the selves of the organization can be mapped – who is the organizational mother, the father, the stepdaughter, the dependent child? Then one could create a map of the inner worldview: how does one construct the world – is it the egoic model, a transpersonal model, a medical model? One could even inquire into what identities would result if one utilized different worldviews to create selves: what is my feminine self? My Western self? Indic self? Planetary self? Finally, one could explore the inner stories "I" tell myself. Is life a struggle? Is life bliss? Is this the way things really are? Or, 'yes but the bottom line is...!' A genealogical gloss of the evolution of these stories would help as well: do the core stories come from childhood fairy tales – Snow White or the Three Little Pigs, or Aladdin, or Berbil and Akbar? Or?

Moving up and down levels, one can develop a tapestry of the inner self. That is, what are the implications of my stories on how I construct the world, how I organize the systems of selves? Is my worldview authoritarian? Do I need to move to an inner democracy, a pluralism of selves?

This inner map can then be linked to the external world. For example, one could ask, is it possible to have an inner map that is authoritarian (dominated by one story, an authoritarian ego) and still have a collective democracy? Can there be a democracy on the outside if the inside is not equally pluralistic? The main point is that it is possible to map the inner and link it to the outer for a particular self or a society of selves, as in an organization.

Along with research and inner discovery, CLA can be used as one of many methods in a futures workshop. This means using it together with methods such as emerging issues analysis, scenario development, visioning and backcasting.³⁴ As it manages information across layers it should be used after a great deal of divergent information on the subject has been articulated. Participants generally at this stage are overwhelmed by the future.

The workshop leader then uses CLA to address and situate the information. But where to situate the various statements uttered by participants? Generally, statements that can be easily empirically verified are litany type statements, e.g., "water shortages are likely in our locality in the next three years." Solution-oriented statements invoking actors and their structural relationships tend to generally fall in the systemic Level two layer. Thus, typical statements are: "If only government would manage water better there would be no shortages." The solutions at this level are legislation, partnership of the different actors (government, citizens, and businesses, for example) or mediation, for example. Grander statements that are difficult to verify, that are Big Picture, that challenge the assumptions of the other levels tend to be worldview Level three type statements. We need a Left-Green water management system, instead of a market system! The key at this level is to search for positions that reflect deeper, generally non-negotiable worldviews.

Of course, the workshop facilitator could ask participants to develop water futures based on various positions. These could include the Green view (focused on sustainability and recycling); the traditional suburban view (water for development, golf courses); the Feminist view (issues of gender equity and access, especially in villages); the techno-utopian view (redesign humans so they need less water, rethink cities, develop technologies to increase rain, for example), the Gaian view (humans have gone beyond the limits set and thus must suffer) and so forth.

Myth and metaphor type statements tend to be folk sayings, even marketing slogans, deep archetypes and ancient stories.³⁵ With water, one story is certainly that of Abundance. God gave earth to man to do with as he wishes. A second story is that of scarcity, of drought, of starvation, of a waterless world. A third story is that of water and progress, of man's ingenuity solving the challenges Nature gives.

Scenarios can be developed at any of these levels, that is: empirically-oriented scenarios (from drought to water abundance futures); systemic scenarios (water management futures); worldview scenarios (Green versus Progress versus Techno-Utopian); and, myth/metaphor scenarios (here best told as drama or art).

CLA can also be used just after scenarios to ensure that scenarios have depth. The scenario structure thus needs to have four levels: the visible characteristics, the systems (society,

technology, economy, environment and polity), the worldview (which perspective dominates in the particular scenario) and the myth-metaphor (what is the underlying story).

Other important how-to indicators fall into three areas: temporality (short- to long-term), complexity (simple to complex) and actionable steps (easy to implement versus difficult to implement).

The temporal dimension expands as one moves down the levels. The fourth level is indeed atemporal, focused on notions of primordial identity. The first is immediate, the second is more historical, and the third much longer term (required for a worldview or deep paradigm to form).

The complexity of the problem or issue that should be dealt with increases as well. Thus, simple solutions tend to be focused on the first two layers and more complex solutions the last two layers.

Actionable steps again are easy to note at the first two layers but more difficult in the latter two (involving foundational changes in worldview and identity formation). However, and this is crucial for measuring policy change, within the CLA framework, there need to be layered action steps. Some of these steps are immediate, water rationing or management, and some longer term, for example, changing consumption patterns, rethinking the relationship between agricultural and urban development, and some very long-term, rethinking water and biology, for instance.

While anyone should be able to use CLA, certainly acceptance of the basic assumptions (that the real is layered) will make the process easier. Finally, the facilitator's capacity to move from inside-the-box to outside-the-box statements can make the process far more effective. The theoretical framework of CLA – critical futures research – will certainly help but it is not a foundational necessity in using CLA (but is crucial in explaining CLA).

III. APPLICATIONS

This section is lengthy and presents examples of CLA. These are generally of two types. The first is of the analytic type wherein CLA is used as a research framework. The second is workshop-based, wherein CLA is used in an interactive participatory environment, for example, with an organization to produce a more effective policy or a more inclusive vision statement.

1 Questioning the Future

In work with the corporate university, the International Management Centers Association, we have developed the notion of questioning the future.³⁶ Many managers – in the action learning General Electric framework – are trained to question the product or process but rarely to contest the paradigmatic (the culture or worldview) basis of their questioning. Moreover, questioning remains problem-oriented. By questioning production, product or process, the goal is to improve effectiveness and efficiency. What are not addressed are discontinuities, what might change, and generally, people's explicit and implicit beliefs about preferred, probable, and possible futures.

This view avoids confronting the deeper and broader basis of the questions. Alternatively, underscoring the cultural and ideological basis of questioning offers depth, as it turns the analytic gaze on the questioner herself. Why are certain questions being asked? Is it because of pressures caused by globalization, for example, a concern for efficiency and profit? If so, why?

If the questions are transformed, then the solutions also shift. For example, at a litany level the answer to the question of the futures of managers is how many managers will be needed in 2020? At a deeper level, one might ask what type of skills and education would managers need given changes in technology and generational shift (the social level). At a deeper level, one might question if we will need managers. This could be because of dis-intermediation – the end of the middleman - and networking transforming capitalism. At the myth/metaphor ground level, we might ask why and how do we organize our societies in which command and control are central, that is, why have managers at all? What are some other ways to organize? What other sources of ideas can we draw on? What would be the operating myths in such an organizational structure? How then might the future differ?

Much of futures research and policy planning stays locked at one level (either too narrow as in the number of managers needed or too deep as in societal transformation) and thus results in ineffective public policy. Solutions generally only touch upon superficial levels (especially when the project is government or private sector funded) or on grand universal levels (especially when the project is social movement funded). The research itself is, if not faulty then simplistic, since different levels of reality are not accessed—it is uni-level, not multi-level.

2. Unpacking Overpopulation

Among the favorite problems that futurists, particularly the Club of Rome variety, list in their "why the world is ending" catalog is overpopulation. Clearly this is not a minor issue; however, the problem in itself is nested in a particular worldview (humans seen as resource eaters instead of minds that create new solutions), yet the problem is stated as if it is universally accepted, acultural, apolitical, an issue of technique. However, with even a smattering of knowledge of others, we would understand and appreciate that Islamic perspectives are quite dramatically different, for example. People are seen not as populations but as families.

If we analyze overpopulation from a layered view, we gain alternative ways of viewing this issue and thus solutions and strategies. Generally when overpopulation is considered the problem, the solution is to reduce the birth rate. Governments are generally considered the best source of solving this problem. Family planning clinics are set up (in South Asia, for example) with occasional periods of enforced sterilization (as during Indira Gandhi's rule). A more severe solution is China's one-child policy. Radio and television ads exhort individuals to have fewer children as this will make the nation richer and the World Bank provides extensive finances for such projects.

The worldview behind this is that smaller populations mean fewer people fighting for limited resources at the national and global level, but at the myth level, there are two operating myths.

First is the liberal (and Christian-informed) notion of helping those less fortunate – caring for others. The second myth is the fear of the other - of teeming masses of Asians and Africans entering the OECD islands of prosperity. If there were fewer people, Asian nations would swiftly develop, and thus rapidly create a world liberal culture and an efficient and rational interstate system (without requiring a transformation in the interstate system or multiculturalism in the West).

If we see the problem as not overpopulation but lack of women's power in the public and private sphere, our solutions become quite different. If we see how patriarchy works to construct women as the nation, the mother of the country, and the depository of men's dreams, then issues of power and social organization quickly enter the analysis. Is it better to have commercials on family planning or change laws so women have more power? Or both? Is development merely an issue of increasing productivity or one of transforming feudalism?³⁷

If the issue of overpopulation is constructed as one of gender and power, then the social and economic analysis changes. It becomes focused on equal opportunity and representation in local and national power. At the worldview level, the issue becomes that of challenging patriarchy and current notions of the nation-state, as well as of economic models that do not see people as families or as an investment. At the myth level, the issue becomes one of imagining a future where women and men live in a sustainable partnership society.

Alternatively, the issue can be constructed not as overpopulation but as the use of scarce resources. Given the disparity in terms of which nations actually use the world's resources, the issue is no longer that of overpopulation but that of questioning environmental policy in OECD nations. At the worldview level, the problem becomes that of challenging growth notions of progress, of economy. It is not people that are the problem per se but the organization of capitalist (and communist) economies. At the myth level, this is about contesting limits and searching for justice and balance.

A layered analysis also helps us uncover why specific policy prescriptions do not work. For example, all the media campaigns in the world are ineffective unless they use language that negotiates with other cultures' notions of the ideal family (in traditional society, for example, that of large, extended, mutually supportive) or that addresses social security. We know that birth rates fall when individuals believe their future is secure, and there is social security (as evidenced by the Indian State of Kerala). Policy without its roots in the worldview level (traditional society) or the myth level (the image of a secure future) will be useless.

This analysis shows that how and at what level one constructs the problem changes possible solutions as well as the scenarios that derive from them. Each problem and solution is based on an alternative notion of policy analysis (the social and the political) as well as worldview (issues of grand structure, power) and myth (unconscious assumptions of how the world is or should be).

So, depending on what problem one buys into and what level one employs, scenarios of probable, preferred and possible futures change. If the issue is overpopulation then we imagine scenarios such as:

- (1) Population overrun, Asia marches into the First World.
- (2) Fortress Europe/America,
- (3) Overpopulation solved as UN/national policy works and Asian nations get richer.

If the issue is women's empowerment, then the scenarios that result from research on the future of population look quite different.

- (1) Women become empowered; work in the public sector and birthrates drop.
- (2) Women develop local economies wherein population density becomes a resource as individual labor increases productivity, since the yoke of feudalism is lifted. Economic and cultural depression decreases.
- (3) Women's power reduces the burden on men to prove their masculinity through propagation of species (or religion or clan, or...). Thus, a future not defined by the nation-state, religion and territory results. The policy implications change as well. Instead of pushing condoms and structural adjustments (which reduce security for the aged), World Bank dollars might be better spent on human rights and gender adjustments as well as provisions for security for the aging.

3. Genetic Engineering in Agriculture and Food

Alan Fricker has used layered analysis to examine genetically modified foods and the futures being created by the gene discourse.³⁸ For him the litany, the official discourse, is that the use of genetic engineering in agriculture can solve current and future global problems. Social analysis is difficult at this stage since there is little data available on the impact of genetically modified food. What is more important is the politics of authority—because of the gene hype—academic institutions with little data can make claims about GM foods. Beneath claims of a glorious future for all is the worldview of materialism, growth and the triumph of the West. What is crucial here, writes Fricker, is that alternative scenarios should be developed at this level, and not only at the level of the litany (i.e. GM foods are good, or bad, or mixed).³⁹ We need to ask what are the technological alternatives to genetic modification, for example, bio-mimicry. At even deeper myth levels, the issue is about science, about the nature of life. Telling an Inuit story, he offers us the image of skeletal woman – the myth of nature, of cyclical processes – in contrast to the old linear story of taming nature.

The heart of Fricker's argument is how to transform current policies – finding an alternative story of the future that is based on truth that is "the shared life that 'overlights' the conflict of opposed ideologies."⁴⁰ This alternative story means creating a new type of science, what Jeremy Ravetz has called post-normal science.⁴¹

4. Cosmic Evolution

In contrast, Patricia Kelly has explored conventional scientific images of the future in an aptly titled piece, "In Occupied Territory: Future.con."⁴² She deconstructs a painting commissioned by the Foundation for the Future through its Humanity 3000 project.⁴³ By deconstructing the image, she shows how the overt future is depicted as harmlessly utopian, as scientific truth. But as one unpacks it, behind the façade of science is patriarchy, technocracy, and a shockingly distorted view of history. Beneath this is a fear of nature and a view that technology is evolution and can solve all our problems.

At the litany level, she notes that the painting is focused on a future rather than futures. At deeper levels, the image of evolution presented is flat, uni-directional with the future super-technological. She wonders how other cultures would construct evolution, asking which discourses do the painting silence. In her assessment of the image at the myth level she writes:

The myth driving this image is the triumph of the West. The nuclear family is literally 'on top of the world'. The imagery is also basically patriarchal, white and Christian. The sun, (source of light, life, Christ-like halo) is directly above the male's head. This is amplified by another super halo/aura/ nuclear ring above it, which extends into the heavens. Man *is* God. His arms rest on the woman and the son (who stands at his Father's right hand, where else?) Greek mythology offers a hint of Colossus in his wide-legged stance. The family dominates Earth with their long shadows. To their East, there is a shadowy image of an atom, beckoning like a modern star of Bethlehem.⁴⁴

Her assessment reminds one of Ashis Nandy's critique of utopias. To paraphrase Nandy: Today's utopias, unless resisted, are tomorrow's nightmares.⁴⁵

5. Aboriginal Deaths in Custody

Wildman has used CLA extensively. Indeed, he was present at the early stages of methodological developments where it was used extensively in workshops at Southern Cross University. This example summarizes Wildman's research on the nightmares of the Australian Aboriginal present.⁴⁶ He shows how layered analysis is not about being intellectually clever but about life and death. Reviewing commissions investigating Aboriginal deaths in custody, he finds that most solutions – recommendations - remain at the level of what to do when aborigines are put in jail. The social and economic causes, such as inadequate employment, health, and housing are marginal issues. Few mention why Aborigines are sent to jail in the first place. No reports seek to develop futures, alternatives, based on indigenous worldviews. The discourse remains within the Westminster legalistic framework and does not seek to understand Aboriginal views toward incarceration. The myth level, for Wildman, offers ways out, by focusing on Aboriginal rites of passage, telling a different story and legitimating it. This level of profound transformation, of seeing Aboriginal deaths in custody as a civilizational crisis, was beyond the Royal Commission. The result is that the tragedy continues, even though 500 million AUD have been spent on the deaths in custody issue.

As with the thousands of think tanks, the main issue remains the listing of problems and the development of easy solutions within the framed paradigm. Whether it is national commissions on the year 2000 or UN studies, they generally tend to remain at the litany and systemic level.⁴⁷ The result is symbolic language that succeeds (we are doing something about it, there is a Minister in charge of the problem or the problem has been decentralized to the community) and policies that often fail.

6. City futures and Deep Communication

David Wright has applied poststructural research and CLA in particular to a former small coal-mining town in Japan, Ashibetsu.⁴⁸ He tracks the conflict between the local government, the "futurecrats" who own the official view of the future, and the ordinary citizens, spearheaded by a subgroup of dissenting residents, the *katayaburi*.

The official discourse explaining the decline of Ashibetsu (and planning its revival) blames Japan's post-bubble economy and an ageing population. But as Wright delved into the issues, particularly how the city could be imaginatively reconstructed, deeper issues emerged. Pivotal was the issue of power – the centralization of who owns and creates the future in Japan. At a worldview level, the Japanese language itself reinscribes this power hierarchy. This makes creating a broader participatory community foundationally problematic. Wright argues that far more is needed than a new economic plan. As he shows, economic plans end up being state-run and state-sponsored. The solutions they engineer have no connection with the citizens, such as, for example, the creation there of a Canadian World theme park.

7. The Futures of the United Nations

We now turn to research developed for Futuresco, UNESCO's Environmental Scanning Project. If we take the futures of the United Nations as an issue, at the litany level, of concern is news of the difficulties of the United Nations (the UN's financial problems and its failure to produce anticipated and desirable outcomes in Bosnia, Somalia, and Rwanda).

Causes, at the second level in the UN example, include lack of supranational authority; no united military, and the perspective that the UN is only as good as its member nations. The solutions that result from this level of analysis are often those that call for more funding or more centralized power. In this case, the UN needs more money and power. Often, deeper historical reasons such as the creation of the UN by the victors of WW II are articulated as factors impeding structural change.

At the third level, the analysis of current UN problems then shifts from the unequal structure of power between UN member states to the fact that eligibility for membership in the UN is based on acquiring national status. An NGO, an individual, a culture cannot join the General Assembly or the Security Council. Deeper social structures that are actor-invariant include center-periphery relations and the anarchic inter-state system. They are the focus at this level. The solution that emerges from this level of analysis is to rethink the values and structure behind the United

Nations, to revision it. Do we need a super-ordinate authority or are market mechanisms enough to manage our global commons? One could at this level, develop a horizontal discursive dimension investigating how different paradigms or worldviews frame the problem or issue. How would a pre-modern world approach the issue of global governance (consensus, for example)? How might a post-modern one (global electronic democracy)?

At the fourth layer of myth and metaphor, in the case of the UN, some factors that could lead to an exploration of alternative metaphors and myths include issues of control versus freedom, of the role of individual and collective, of family and self, of the overall governance of evolution, of humanity's place on the Earth. Are we meant to be separate races and nations (as ordained by the myths of the Western religions) or is a united humanity (as Hopis and others have prophesied) our destiny? At the visual level, the challenge would be to design another logo for the UN, perhaps a tree of life or a circle of beings (instead of just flags of nations as currently displayed outside the UN headquarters or the official symbol of the world in a wreath of peace)

8. UNESCO/World Futures Studies Federation course

While the previous examples were logically derived, the following are based on actual futures-visioning workshops.⁴⁹ A CLA was conducted at a 1993 UNESCO/World Futures Studies Federation workshop in Thailand on the futures of ecology, where the issue of Bangkok's traffic problem was explored. Here were the results.

At the litany level, the problem was seen to be Bangkok's traffic and related pollution. The solution was to hire consultants, particularly transportation planners at local and international levels.

At the social cause level, the problem was seen as a lack of roads with the solution that of building more roads (and getting mobile phones in the meantime). If one were doing scenarios at this stage, then there would be scenarios on where to build roads and on which transportation modeling software to use.

At the worldview level, it was argued that the problem was not just lack of roads but the model of industrial growth Thailand has taken. At the myth level, this was the "Big City Outlook" that had come down through colonialism. The city is better and rural people are idiots. Wealth is in the city especially as population growth creates problems in the rural area. The solution then becomes not to build more roads but to decentralize the economy and create localism, that is, where local people control their economy and feel they do not have to leave their life and lifestyle. Psychologically it means valuing local traditions and countering the ideology and myth that "West is best and that Bigger is Better." New leadership and new metaphors on what it means to be Thai emerged as the solutions at this level. These, of course, are long-term identity issues. Specific medium-term actionable issues include decentralizing Bangkok, revaluing the role of agricultural, in particular farmers, and developing economic and political policies to stem the demographic tide into Bangkok. In the short term, Singapore's efforts at integrated transport planning were favored. Thus, by using CLA multiple actionable steps with different time horizons can be developed.

9. Faculty of Work, Education and Training, Southern Cross University, Australia

When used at a seminar to the Faculty of Education, Work and Training at Southern Cross University in 1994 on the future of enrolments, the results were as follows.

At the litany level, the problem facing the University was declining enrolments. University professors saw it as an external problem. It was believed that the government should do something about it, for example, increase the number of scholarships.

At the social level, alternative positions were explored. Among them was that the faculty was too busy doing research, that there was a job boom and students preferred to work rather than sit in institutions. It could also be that the pool of students had declined, suggested participants. The solutions that result from this level of analysis are often those that call for more research to investigate the problem – or to create a partnership with industry. A precipitating action in this case study was the changeover in government from Labor to Liberal⁵⁰, with the government seeing education less as a social concern and more in economic terms.

At the next level, we explore how different discourses (the economic, the social, the cultural) do more than cause the issue but constitute it, that the discourse we use to understand is complicit in our framing of the issue. At this third level, participants discussed how conventional education no longer fits the job market and students' experience of the world that they might get from community associations or high-tech TV. The solution that emerged from this level was the need to rethink the values and the structure of the educational institution, to revision it – quite different from the litany level where the issue was more student aid or different from the second level where the solution was partnerships between the university, government, and industry.

At this level, one could develop a horizontal discursive dimension investigating how different paradigms or worldviews (and related ways of knowing) would frame the problem or issue. How would a premodern world approach the issue of teaching and learning?⁵¹ How might a postmodern one?⁵²

At the fourth level of myth and metaphor, issues that arose are: does schooling free us or is it merely social control? Should education still be based on the Newtonian Ford-ist model of the factory or is education about transcendence, the return to mission, the re-enchantment of the world? At this level, the challenge is to elicit the root myth or metaphor that supports the foundation of a particular litany of issues. In this case, the metaphors used were that of the university as prison versus that of the university as a garden of knowledge. This latter root metaphor was then used to aid in the visioning process, of imagining and creating futures participants desire.

10. Senior Management, Southern Cross University

Later at the same university but at a workshop with senior management, the issue again was financial, this time a drop in funding for education from government. The solution that emerged from the social analysis (focusing on the history of the state and education) was to diversify the funding source, to ask where else can we get money. This approach is in contrast to the litany level where the focus was on how to convince the government not to change its policy or to hope that the Labor government would once again be elected. At the discourse/worldview level, discussions revolved around the changing nature of education – on the decreasing importance of traditional education, and increased emphasis on skills for a global economy. It was the change in worldview from knowledge as sacred, the idea of the scholar, and the idea of the scientist, to that of the education to create better skilled workers in a global competitive marketplace that became the focus of discussion. It was believed that it would have to be people that lobbied the government to rethink its educational policy, not just universities. At the last level, the issue became that of rethinking money and exchange as well as finding other ways to manage and fund a university.

Of all the many causal layered analyses done, this was the most difficult and least satisfying, largely because it was hard to see money in layered terms. It was nearly impossible to move outside the administrative-capitalist discourse – the jobs and futures of all in the rooms depended on that discourse. In this sense, spending more time on emerging issues that might change the funding nature of the university (or on what-if questions) might have been a better approach. Still, some important scenarios were developed from the analysis:

- (1) The collapse of the university system in Australia
- (2) A corporate/industry aligned university
- (3) A virtual university (expanding its customers and reducing its overhead)
- (4) A return to core enlightenment values. These helped to clarify alternative futures ahead as well as gain consensus on the preferred vision held by participants (a mix of a virtual university and core enlightenment values).

11. Queensland Advocacy Incorporated

This case study is based on a seminar conducted on the Queensland Advocacy Incorporated, Australia, a systems advocacy organization for people with disability. The broad issue under discussion was the practice of housing people with disabilities in institutions. At the litany level, the issue was framed as abuse and neglect within institutions. The solution by the state is often prosecution of offenders and the creation of better institutions for those with disabilities, said participants. The locus of action has been government with the media providing images of positive actions the state is doing for people with disabilities.

At the social causes level, it has been the anxiety and frustration resulting from an imbalance of power within institutional settings that has been the key issue facing the disabled. The solution is thus focused on the individual rather than the social structure, taking the form of therapy for individuals with professionals providing the solution.

At the worldview level, it is fear of difference and individualism that is the central problem. People with disability are "othered", seen as separate from "normal" communities. At this level, the solution offered was consciousness raising, a softening of individualism and a strengthening of community. The actors who could make this change are people with disabilities themselves – particularly through their various organizations.

Finally, at the myth and metaphor level, it is the story of inclusion/exclusion, of who is normal and who is abnormal that was paramount, said participants. The negative story is that of the Cyclops – the image of the one fundamentally different from us, and thus to be feared and loathed.

The scenarios that resulted were:

- (1) Society changes so that people with disability feel welcome
- (2) Genetic technology eliminates "disabilities" – a negative scenario for people with disability since this continues the location of their body in the space of non-acceptance
- (3) Continued ghettoization with occasional feel-good media-led campaigns.

12. Unpacking the Futures of Poverty

So far I've presented CLA based on my own case studies as well as summaries of articles that use the method. The following is an extensive quote of Ivana Milojevic's unpacking of poverty using CLA.⁵³ This is provided given its direct relationship to the *State of the Future* focus on global problems.

“At the litany level poverty is measured only through economic and other quantitative indicators. The discourse tends to focus on the overwhelming nature of global poverty, for example, estimates that currently 53% of the world population is classified as poor and that around 3 billion of people live on less than 2US\$ a day.

“At this level, the strategies for elevation of poverty mostly focus on the poverty relief and aid packages. The common response among the affluent is either *apathy* – the problem of poverty is so huge that it cannot be resolved; *helplessness* – I wish there is something I/we could do; or *projected action* – the government, UN or NGO's should do something! Sometimes, magical solutions, such as genetically modified rice and other crops, are also discussed.

“At the level of social causes, processes such as colonization, modernization, globalization, capitalism, urbanization, as well as national and international governance are discussed. Other indicators of poverty, such as access to education, health care, are included but poverty is still primarily measured through economic indicators, such as GNP and income per capita.

“Strategies usually include suggestions on how to increase economic growth rate or labor productivity and how to encourage foreign investment. Other suggested strategies include investments in agricultural research, education, health, creation of welfare safety net and so on.

“At the worldview discourse, the main debate is whether the economy needs to be regulated. Libertarians and conservatives argue against any or any significant interference in the free-

market economy and maintain that poverty can only be elevated through the free flow of capital and labor. Some also argue that the widening gap between the rich and the poor is “a natural, necessary and even desirable component and hallmark of the improvement of the human condition”⁵⁴. That is, poverty is the *normal* condition of men and if the rich were not allowed to get ever richer the poor would never have any chance to improve their conditions at all. This they could do through ever-increasing access to tools of ever-increasing productivity, through acquiring advanced technology and by “jumping on the bandwagon” of the general development and economic growth that entrepreneurs create.⁵⁵

“Left-liberals, environmentalists and socialists argue that global Casino capitalism is directly complicit in creation of poverty where previously there was none as well as that the unregulated, “free” economy/markets is a myth. They stress that poverty is not created through production (or the lack of it) but because of the way profits are distributed. They argue that although global economic activity has grown at nearly 3% each year and doubled in size twice over the past 50 years the number of people living in absolute poverty hadn’t been reduced at the same pace. In regard to the widening gap between rich and poor they argue that this indeed is a problem because in the future world where “two-thirds are poor and deprived of basics and promise, there will not be any peace and security”⁵⁶. Contrary to the focus only on the competitive aspects of the human nature it is the cooperation that is seen as the only possible way out. The future is seen as a collaborative enterprise in which “well-being of the poor demands on the cooperation of the rich, and the safety of the rich relies on justice for the poor”⁵⁷.

"Discussions on this level also allow for an analysis of the ways in which the discourses themselves not only mediate issues but also constitute them. Or how discourses we use to understand poverty directly influence strategies that are being put in place. For example, if poverty is understood predominantly in terms of economic indicators, only economic measures are going to be suggested. The strategies will therefore not include measures that work against oppressive social structures that are complicit in creation and sustenance of poverty, such as, patriarchy, for example.

"At the myth/metaphor level, deeper cultural stories are discussed. For example, in which ways western advertisement or other propaganda makes indigenous populations believe that their own culture, dress, food, or language are inferior as well as how are needs for products and lifestyles produced elsewhere created. Or, in which ways are local and global narratives creating a situation in which some become easy prey for economic exploitation by others.

"At this level, we can see how deep beliefs, such as the belief that humans are inherently competitive and selfish, create a worldview that informs discussions that formulate policies that determine the actions (or the lack of it). Or how these actions and policies differ from those that are formed by the worldview that emphasizes the role of communication, cooperation, altruism, caring and nurturing as the main themes in human evolution.

"At this level we can also investigate deep cultural myths and their relevance for poverty creation and elevation. For example, in western history two basic narratives about the relationship between men and nature exist. One is the myth of “The Land of Cockayne”, the land of milk and honey, the “golden age” where the nature provides abundant resources and the magic bowl

of porridge never empties. This is the land of unlimited consumption, limitless choices, and ever increasing growth and progress. The current version is consumer-based global capitalism where new wealth and products are constantly being created. Abundance is achieved through technological and economic innovations as well as through the commodification of nature, lands, peoples, and space.

"Another myth is that of Arcadia, where nature is bountiful but humans do not indulge themselves beyond their needs. It is the idea and the image about the harmony between humanity and nature rather than the image of domination and control of the nature by humanity so as to produce society and civilization. Throughout European history, the Land of Cockayne was especially popular during medieval ages and among lower classes which sought to relieve the drudgery of their everyday lives "through the pure satisfaction of sensual pleasures"⁵⁸ Arcadia, on the other hand, originated in ancient Greece and was revived by Renaissance humanists that were "seeking to restrain the selfish tendencies of the rich and powerful classes"⁵⁹. Its modern version is today's ecological, New-Age and anti-globalization movements."

Milojevic thus begins with the data of poverty and then moves the discourse vertically to what she considers the foundational myths that structure society and civilization. Using CLA she provides an integrated and layered reading of how to understand poverty and how to think about means for creating poverty-free futures. As she writes: "the worst thing that the mainstream discourse and both the 'left' and 'right' worldviews do is to describe poverty in such terms that it becomes unthinkable to imagine poverty-free futures."⁶⁰

13. Workforce Futures

This final example is of the use of CLA in a workshop process. I quote extensively from the work of Debbie Terranova.⁶¹ Her context was using CLA for a human resource planning workshop at Brisbane City Council, Australia. The purpose of the workshop was to open up and expand the strategic thinking of senior managers about workforce ageing. A selection of senior managers and human resources professionals was invited to a two-hour workshop to examine the problem, leading to the development of suitable interventions. Terranova writes that she used CLA in order to ensure that business-as-usual interventions did not result.

In preparation for the workforce, "one week prior to the workshop pre-reading material about ageing workforce issues was distributed, including statistics, projections, and relevant literature which framed the issue in both positive and negative terms."⁶²

And: "At the start of the workshop, participants were evenly divided between four tables. They were advised of the desired outputs, however they were not told about the CLA methodology that underpinned the workshop process."⁶³

Instead of starting with the litany, Terranova chose to start with the system as she understood that for senior managers, systems issues would be the easiest point of entry.

Writes Terranova, "The first activity was designed to reach a common understanding of the social causes of the problem, including social, technological, economic and political aspects."⁶⁴ Via brainstorming, issues were raised. The most frequent were:⁶⁵

- financial capability of governments to support an ageing population and increased taxation to support non-workers
- financial capacity of individuals to support their retirement
- loss of knowledge, skills and organizational wisdom
- safety of older workers
- suitability of the type of work available
- availability of flexible work options
- ability of older workers to adapt to change and new technology.

From here, she moved to the litany level. Instead of focusing on quantitative data, she asked managers to speculate on headlines of the future that would be relative to an ageing workforce. Some of the headlines were:⁶⁶

- "Sewage in the Streets – Council powerless. The people who know how to fix it have retired and gone fishing."
- "Spain comes to Brisbane. Elderly employees now work part-time and have afternoon siestas."
- "Brisbane City Council's Budget Balloons. Council has lost the employees they want, huge costs to keep workers they don't want."
- "Stay healthy and active with Brisbane City Council. Free arthritis tablets, seminars about living with Alzheimer's, pensioner discounts for employees."

With the system and litany understood, Terranova moved to the worldview/discourse level.

"For the next activity each of the tables was assigned a "generation", Generation Y, Generation X, Baby Boom and Mature Generation. Participants were asked to "become" a person from their assigned generation. To facilitate exploration of their roles, participants referred to a stimulus sheet, and used their knowledge of others in that age cohort, such as parents, children or siblings. The stimulus sheet covered current age, a description of the social context, defining events/music, and "where were you when...?"⁶⁷

Using role-playing – gaining worldview via stakeholder interests – she moved to the metaphorical. She did this by asking generational groups: "How do the issues of an ageing workforce affect or impact on your generation now and into the future?"⁶⁸

After discussion at their tables, a representative of each generation told their story to the larger group. A brief summary of their stories follows:⁶⁹

Matures (Aged 58 and older):

"I'm out of here soon – I'll leave when I'm ready. Until then just let me be, and don't try to teach me anything new."

Baby Boomers (Aged 40-57):

“Cool Runnings – We’ve always been able to change the world. Although we have some worries, we’ll work things out to suit ourselves”.

Generation X (Aged 22-39):

“Feeling threatened here – We will have to pay for the ageing population, but have no opportunity for promotion until the Boomers leave. How will we cope?”

Generation Y (Aged 21 and younger):

“Opportunity knocks – We are well educated, and have high expectations. We’ll dictate our own terms.”

Terranova concludes:⁷⁰

"The success of this exercise was in its capacity to significantly broaden discussion about workforce ageing, and to turn the problem from a predominantly negative focus into a more positive one. Participants realized that ageing meant different things to different generations. The problem was no longer restricted to managing the retirement of old and ailing workers. Instead it had the potential to tap into benefits and opportunities for each generation of worker. For example, if employees of the Mature Generation were not interested in learning new techniques themselves, they might be interested in passing on their know-how to younger people.

Her analysis vis-a-via CLA was: "whilst it is vital that the facilitators have a good working knowledge of the methodology, participants need to have neither awareness nor understanding of CLA. The tool establishes a logical, step-by-step process to build a broader and deeper collective understanding about an issue or problem in a manner that is non-threatening and non-judgmental."⁷¹

Her conclusion on the use of CLA was: "Causal Layered Analysis is more than a theoretical framework. It is a practical methodology which is easily adapted to delivery of a workshop process. For the facilitator the strength of CLA lies in its ability to broaden and deepen discussion and understanding about an issue or problem, to move from the obvious and superficial, to the deeper levels of beliefs, experiences and emotions. This can be achieved in a non-threatening and non-judgmental way that eventually leads participants to consider a wider range of policy solutions than would otherwise have been possible."⁷²

IV. STRENGTHS AND WEAKNESSES

The strength of CLA is its capacity to move beyond the superficiality of conventional forecasting methods insofar as these methods are often unable to unpack worldviews, ideologies and discourses, not to mention archetypes, myth, and metaphors. They give ready-made default futures forgetting the institutional practices and values that go into making them.

While CLA is not concerned with predicting a particular future, it does open up space for the articulation of constitutive discourses, which can then be shaped as scenarios.

Rick Slaughter considers it a paradigmatic method that reveals deep worldview commitments behind surface phenomena.⁷³ Writes Slaughter, "Causal layered analysis ... provides a richer account of what is being studied than the more common empiricist or predictive orientation which merely 'skims the surface'.⁷⁴ However, "because mastery of the different layers calls for critical and hermeneutic skills that originate in the humanities, some futures practitioners may find the method challenging at first."⁷⁵ This is especially so for practitioners who are living in homogenous environments, where other worldviews are either not present or are assimilated in the dominant worldview.

Andy Hines and others of the Association of Professional Futurists have commented that in arenas where the corporate cultural is homogenous or where hegemony is strong, CLA is far more difficult to use.⁷⁶ Where empiricist perspectives dominate (and discussions of worldview is rejected) then certainly CLA will lead to cognitive dissonance. The key here is to engage in a discussion on the perspectives of the other - a conversation that has become far easier with globalization.

This cognitive dissonance can be for the few expressed as rejection of the levels of the method.⁷⁷ This is largely because from a strict empiricist perspective there are no levels to reality. There is truth as discovered through the scientific method, and falsehood based on interest. Truth is thus clouded by worldview and values, not revealed by it as argued in CLA. Science calls for disinterest so that the empirical can be made apparent. CLA, however, does not seek to hold in abeyance – to control for - worldview or myth and metaphor but rather seeks to layer them.

The litany of the scientist is not dissimilar to the litany of the ideologue, who believes that there is only one future or one correct rendering of reality – a theory of everything, for example. For them, CLA is problematic in that it deconstructs their view that they hold the keys to the gates of enlightenment (idealist, spiritual, integral, religious, technological, or).

Finally, CLA as it brings in inner layers – the official self that is presented, the systems of the self, the dominant worldview of the self, and the inner stories we tell ourselves – can be challenging to those who do not wish to include the subjective in the objective world.

Nevertheless, causal layered analysis has been successfully used in a variety of workshops and futures courses in the last seventeen years. It is especially useful in workshops with individuals either of different cultures and genders or different approaches to solving problems or with varied stakeholders (CEO, customer, employee, manager, competitor, for example). It is best used prior to scenario building as it allows a vertical space for scenarios of different categories. CLA is now used extensively in policy and strategy development⁷⁸. Writes Jennifer Bartlett of Brisbane City Council, "CLA has given our policy developers and program planners an invigorating and robust framework for a breadth and depth of analysis previously inaccessible. CLA is an extraordinarily inclusive and versatile tool - enabling a wide range of sometimes preciously held views to be placed 'on the table', made explicit and navigable. The CLA tool is empowering our staff, giving them a 'way through' in dealing with complexity especially relevant in a large local government with a broad policy agenda."⁷⁹ Jennifer Brice, formerly of Fuji Xerox Australia has called it, "an exceptionally valuable tool" for the corporate arena.⁸⁰ And

sociologist Kate Donnelly, comments, "I've especially found using the CLA methodology useful in my Community Futures practice."⁸¹

Moreover, CLA for most can be quite easy, be they professionals or first year students. Writes Ryota Ono about his course in Futures Studies at Nanyang Technological University, Singapore, "To explore alternative futures, they used the Causal Layered Analysis (CLA) as a method. It is a very useful method to explore possibilities from different dimensions and I find that it can be used with a little help even by the first time students."⁸² Remarks a first year undergraduate student exposed to CLA by Professor Ono at Aichi University, Japan. "Regarding CLA, I feel that it is the most useful tool I learned during this course. It sort of integrates all we have learnt. I feel that this course taught us something that is very personal and valuable to our lives – to dare to dream for our future. Futures studies has, subtly, taught me that I should have the guts to dream what I want to do in my life and taught me what I should do now so that I can achieve my vision. Another thing that futures studies has taught me is that an individual's effort can be significant in eliciting a change that can affect the world. "

And a third writes: "There is always more than one answer or solution to anything and I should not be quick to jump to a conclusion soon after I have digested a situation. Generally speaking, futures studies has forced me to weigh my options more carefully, made me realize that I do have options in the first place and to help me temporarily put aside my mindsets and free my imagination. I must admit that at times it was much easier to resort to quick-fix solutions and also more comforting to return to tried and tested methods. But exercises like scenario development and CLA all trained me to free my imagination and be a more flexible person."

Some of the benefits of CLA include:

- (1) Expands the range and richness of scenarios (the CLA categories can be used in the incasting⁸³ phase of scenario writing)
- (2) Leads to the inclusion of different ways of knowing and accompanying interests among participants when used in a workshop setting
- (3) Appeals to and can be used by a wider range of individuals as it incorporates non-textual and poetic/artistic expression in the futures process
- (4) Takes recognition and layers participant's positions (conflicting and harmonious ones)
- (5) Moves the debate/discussion beyond the superficial and obvious to the deeper and marginal
- (6) Allows for a range of transformative actions by various actors
- (7) Leads to policy actions that can be informed by alternative layers of analysis
- (8) Leads to policy actions that are sustainable, that is, authentically solve problems instead of merely reinscribing current issues
- (9) Develops strategy that links the short, medium and long term
- (10) Reinstates the vertical in social analysis, that is, from postmodern relativism to global ethics

The utility of causal layered analysis is that it can categorize the many different perceptions of realities while remaining sensitive to horizontal and vertical spaces. Often individuals write and speak from differing perspectives. Some are more economic, others are concerned with the big picture; some want real practical institutional solutions, others want changes in consciousness.⁸⁴

CLA finds space for all of them. It does so by pushing those focused on the litany to deeper levels as well helping those immersed in depth to see the utility of developing quantifiable indicators, visible characteristics, of their preferred future. While individuals may not change the level they feel most comfortable in, CLA gives strategic reasons to understand other levels in that policies are more likely to be successful if participation is broad based (not just stakeholders but worldviews) and transformative.

The layered approach largely resolves the classic contests of empirical versus theoretical, scientific versus non-scientific, leadership versus participation, and qualitative versus quantitative. Its “both-and” position respects civilizational ways of knowing, cultures' different research traditions, and individual proclivities as well as the structures of power and knowledge they intersect with. The result can be methodological renewal. In essence, CLA seeks to integrate different methodologies, seeking to combine differing research traditions.

Like all methods, CLA has its limits. For example, it does not forecast the future per se and is best used in the conjunction with other methods such as emerging issues analysis and visioning. It could, like any epistemologically rich approach, lead to a paralysis of action i.e. too much time spent on problematizing and not enough on designing new policy actions. Moreover, as CLA is a new method, while there are dozens of articles using the method, and a dozen plus doctoral and MA thesis written on the method, empirically based case studies that demonstrate that CLA is a more effective tool in policy making have yet to be completed.⁸⁵

For newcomers to the futures field, it may dampen their inner creativity, since it categorizes reality instead of allowing for a free for all visioning. For a few, it is too difficult. This is especially so for empiricists who see the world as either true or false (who insist on being right instead being located in layers of reality) or postmodern relativists who reject the vertical gaze CLA implies and who insists that facts do not exist (as opposed to the CLA perspective which attempts to nest facts in different epistemological positions). CLA endeavors to find space for these different perspectives. It does not reject the empirical or the ideational but considers them both along a continuum.

In this sense CLA, while part of the poststructural critical tradition, is very much oriented toward action learning and integrated methodologies. Answers are neither right nor wrong. Rather a dialogue that uses multiple ways of knowing is sought between the different levels. Interaction is critical here. By moving up and down levels and sideways (depth plus breadth) through scenarios, different sorts of policy outcomes are possible and discourse/worldviews as well as metaphors and myths are enriched by these new empirical realities.

Of course, if at a workshop, a discussion does not fit into our neat categories of litany, social causes, worldview, and metaphor and root myth, it is important to work with the individuals to create new categories. Thus, CLA is flexible. However, in general, these categories work because they capture how we think and categorize the world – they capture the differences that are us.

Engagement with others, interaction at inner and outer levels, and movement up and down multiple levels allows an escape-way from the method itself, ensuring that CLA itself does not become a straightjacket stopping innovation.

V. CLA, SCENARIOS AND OTHER METHODS

The poststructural framework from which CLA derives has similarities in other methods as well. Critical futures research seeks to disturb us from our conventional categories of understanding, asking how it is that a certain category has been constituted in the first place. This can be similar to emerging issues analysis. Emerging issues analysis,⁸⁶ for example, at one level predicts issues outside of conventional knowledge categories but it does so by disturbing conventional categories, by making them problematic; it reorders knowledge. For example, the notion of the "rights of robots" forces us to rethink rights, seeing them not as universal but as historical and political, as hard fought political and conceptual battles. It also forces us to rethink intelligence and sentience – posing the question: what is life? Thus, a futures method such as emerging issues analysis, conventionally used to identify trends and problems in their emergent phase, should not merely be seen as a predictive method; it is also be a critical one. By challenging traditional categories, CLA can be used to help identify emerging issues.

CLA is of great value in creating richer scenarios. This is accomplished through searching for alternatives at the worldview level, or indeed, if one desires, developing different types of scenarios for each level. Thus, one can develop litany scenarios (alternative growth projections); systemic scenarios (different types of society, technology, environment and polity based on different economies); worldview scenarios (differing visions of economic growth as well as "growth" in general) and myth/metaphor scenarios (different narratives).

CLA can be used as well in the incasting phase. While many use the STEEP (society, technology, economy, environment and polity) to build scenarios, using CLA, the scenario could be divided into the four levels. The litany would be focused on the visible characteristics – what the future commonly looks like; the social systemic level would use STEEP; the worldview level would develop the base concepts and values and the myth/metaphor would articulate the underlying often unconscious emotive dimensions.

However, CLA is of particular use in futures visioning workshops. These workshops are designed to help participants (stakeholders in a factory, a university, a non-governmental organization, government, an industry) develop their vision of their preferred future, as well as action steps needed to create that future.

Generally, the format I have used is: (1) Develop a shared map of past and present. (2) Map the trends, images of the future and the weights that make realizing the future difficult. (3) Identify emerging issues that might challenge this map. (4) CLA. It is at this stage that CLA is of utility in that it can sort out trends, emerging issues, images of the future in layered categories thus giving participants a deeper map of the future. (5) Develop scenarios. (6) Create a preferred future, (7) Backcast the steps to get to that preferred future and (8) Decide on action steps.

CLA as well could potentially be used in risk management simulation programs, that is, not just focusing on risk that can be easily measured by assigning probabilities to systemic level risk, to worldview risk and perhaps the far more difficult myth/metaphor risk. This has yet to be done; however, it is possible, given the appropriate qualitative modeling methods.

The next phase of CLA – the frontiers – would include its use in large global future projects (that tend to focus on the litany) to discern if complexity can be brought into them. Quantitative and qualitative research studies to determine if CLA enhanced the scenario process or the overall futures project as well are required.

VI. STATE OF THE FUTURE

The varied examples and case studies presented in this chapter have illustrated alternative ways of performing and using CLA. However, this type of multi-varied, trans-disciplinary unveiling and complex thinking rarely occurs. The worldviews of other civilizations and cultures are usually not considered as cultural assets or as central to understanding the future or even the present, but more usually as obstacles to be overcome. What results are flat scenarios and futures projects that often fail, since others are neither asked nor included.

As Rick Slaughter argues, most futures work remains at the pop futurism level. The default future is given as the only possible future, it is not questioned. This focuses on getting attention, the latest gee-whiz technology or environmental spill. John Naisbitt's *Megatrends* is perhaps the best example of this type of work. The utility of futures studies is seen within the problem-oriented framework. This futures work consists of listing the world's problems, inattentive to the ideological interests behind these problems. Two examples Slaughter cites are the Millennium Project's *State of the Future* report and Peter Schwartz' "Long Boom" scenario of the future. What is needed, instead, are critical and epistemologically oriented futures studies. These studies would "explore the deeper processes of meaning-making, paradigm formation and the active influence of obscured worldview commitments". For Slaughter this means searching for dissenting visions of the future and bringing new voices into the conversation.

For example, while an excellent initiative, indeed groundbreaking, the *State of the Future*⁸⁷ report could be enhanced by the CLA approach. Currently the State of the Future report elegantly presents key global problems (the litany). It then proceeds to offer solutions. These solutions are generally at the systemic level, i.e. enhancing partnership between governments and nongovernmental organizations, or better technology to monitor terrorism.

However, what is not explored is how certain worldviews in themselves constitute both the problems and the solutions. Worldviews and the epistemological positions underneath them are not explored.

Let me give some examples. A litany concern is that of quality and safety in health. Up to 100,000 Americans die each year because of the health system in itself (viruses at hospitals, falls in hospitals, misdiagnosis, etc).⁸⁸ The traditional approach is to offer suggestions such as enhancing general practitioner training. However, at the systemic level (and fortunately the *State*

of the Future has reached this level), the issue is the information flows between nurse and GP, between hospital staff and administrators. However, if we go deeper the issue is the vertical relationship between GP and patient. This is endemic to the western tradition. By exploring other traditions, solutions can be developed, for example, listening to the patient as in homeopathy. Finally, alternative futures can be derived from exploring mythical dimensions. At this level, the issue is often trust in expertise, i.e. loss of confidence in self because of the complexity of the medical system. It is also a focus on quantity of life instead of quality of life.

Thus, merely listing problems and solutions without exploring how the solutions themselves are part of the problem and vice versa leads to failed policies. Policies do not succeed, not because we do not see the solutions, but because solutions are presented in a flatland framework, ignoring that individuals hold different worldviews. Exploring how these different interests create certain solutions and problems thus becomes a way to unveil and unpack the present, and thus the future.

We can see this well in discourses on terrorism. For example, stopping Palestinian suicide bombers through collective punishment, more high-tech surveillance, and occupation is informed from a perspective that assumes that the sole problem is the bomber. Certainly this is the case at the litany level, but at the systemic level, it is perhaps the complex web of passes, security relations, checkpoints and other political, economic and social subsystems that define Israeli and Palestinian relationships. Essentially, this is unemployment and no hope for the future. There is no agency by which unemployment can be addressed, thus suicide. Thus, as important is a solution that seeks to give Palestinians dignity or that allows their movement, or that ensures that the system works for everyone – that offers an economic future to the Palestinian. Hence, while the bomber is certainly a problem so is the political-economic system in which the bomber exists. At the worldview level, at issue is the Israeli sense of being the chosen people, who must defend their homeland against evil. For the Palestinian, at the worldview level it is the notion of paradise – Jihadist Islam. Since there is no hope in this world – no compelling but realistic image of the future – it is to the next world that one aspires toward. At this level, leadership is required to undermine the sense of "Chosenness" among the Israeli and the jihadism among the Palestinian. A bright future must be offered and built with each side in this world. This means challenging or at least beginning a conversation of the worldviews of Jew and Muslim. Focusing on the "father" of each religion, Abraham (and unpacking the many stories of Abraham), is certainly one way to begin this questioning.

But, of course, far more important is the myth-metaphor level. Both sides suffer from trauma, Israeli Jews from the Holocaust, obviously, and Palestinian suicide bombers have all witnessed collective punishment, or the death of their parents. The trauma congeals identity, making transcendence nearly impossible. Healing and reconciliation are required as well as a new story of what it means to be Israeli or Palestinian. The antidote to trauma is transcendence, built peacefully a step at a time. Again, leadership is required here.

What this means is that while a state of the world's future problems or issues is an excellent effort in pointing attention to the future, unless these problems address or unpack worldviews and underlying stories, they will only reinscribe⁸⁹ the present. This is not to say the litany should be avoided. Quite the opposite. CLA seeks to move up and down levels, asking how might the litany and system look through different lenses. It seeks to move beyond technocratic solutions,

that is, those devised at the systemic level. As well, it seeks to move beyond the worldview to the mythic level. However, the challenge is to engage all levels. Solutions to the world's issues require no less. Solving terrorism, for example, is both an issue of better intelligence to catch the criminals, and creating better and safer systems (marshals on airplanes) and one of establishing a dialogue of worldviews. This is a dialogue between civilizations and within each civilization (for example, between Wahhabi and other forms of Islam).⁹⁰ Finally, it is an understanding of divergent traumas, moving to a Gaian position that we are all in this together, that the terrorist is part of our existence; whether pathological or evil, it is a litany that must be dealt with at multiple levels.

Thus, there are no simple ten or so megatrends to list and grab attention (the PowerPoint and overhead transparency view of the world). There is no list of global problems we must align the world's research institutes to. It will not be possible to reach global solutions without consideration of alternative worldviews.

But we should be clear, the solution to trend listing is not worldview discussions. That is, the other side of simplistic research is ideological research. The best examples are in the Islamic world and the former communist world. Here, the truth is already known and the future is understood; we have merely to implement solutions. When implementation fails, analysis remains at the worldview level, leading to an abundance of conspiracy theories and theorists. The resulting policies do not reflect the levels of reality. The New Age movement also articulates notions of an ideal world, but based on uncontested assumptions of the spiritual. There is no interaction with the real world, nor is there analysis of power as social structure – race, core/periphery relations. In contrast, the layered approach argues for movement up and down levels, each enriching the other, and each testing the assumptions – a complex and reflexive network of alternative logics.

Thus for the *State of the Future* alongside a list of problems could be a list of the causes and who is required to solve them. This is the litany level. Next would be the systemic problems (the world system of nations, financial flows, etc) and systemic solutions. This would be nested in worldviews (modernist, traditional, emerging cultural creative, for example) which would then be nested in myths and metaphors required for lasting transformation. Strategies are thus both short term, understanding the challenges at the litany level, and much longer term: systemic changes, shifts in worldview and the telling of new stories of possible transformation.

VII. CONCLUSION

While there are numerous other examples, the hope here is that the above examples give an indication of the possible beneficial uses of CLA.

To summarize, the causal layered approach:

1. Constructs problems through context.
2. Sees context at multiple levels.
3. These levels are generally the litany, the systemic, the worldview/discourse, and the myth/metaphor.
4. The challenge is to move and down multiple layers, rethinking the implied future at each level.
5. Depth emerges allowing solutions that are longer lasting, that do not reinscribe the present.
6. Thus CLA allows authentic alternative scenarios and preferred futures to emerge.

Complex layered analysis is not a goal in itself. What it can do is to create the possibility for real transformation of our empirical and ideational worlds and ensure deep participation in this transformation. This is not merely *better* representation, but a genuine engagement with others' ways of knowing (without letting any particular way become hegemonic).

The ultimate benefit will be a better world at all levels.

APPENDICES

CAUSAL LAYERED ANALYSIS

1. CONTEXT

- How one frames the problem, creates the solution
- Language is not neutral but part of the analysis
- Wisest inquiry goes up and down levels of analysis and across constitutive discourses
- As one move down the level, solutions are longer term and more difficult to achieve

2. Horizontal Levels

- Identification of Problem (what is the problem)
- Associated Solution (what is the solution)
- Associated Problem-Solver (who can solve it)
- Source of Information of problem (where is the problem/solution textualized)

3. Vertical Levels

The "Litany" official public description of issue

- Problem seems unsolvable or it is up to government or power to solve it
- Little personal responsibility
- Often appearing as News – the headlines. Mediated by interstate system and conventional accounts of reality. Short term approaches. Government solves the problem.
- Generally quantitative or having a quantitative dimension

Systemic (Social) Analysis

- Short term historical factors uncovered
- The relationship between the parts of the system is key
- Attempts to articulate causal variables (correlation, causation, theory and critique of other theories)
- Often State or monopolistic interest group has ownership
- Solution often in civil society in interaction with other institutions (values with structures) - partnerships.
- Often appearing as Op-Ed piece
- Overall, the social, technological, economic, environmental and political (STEEP) approach

- * *Discourse analysis/Worldview*
 - Problem constituted by frame of analysis
 - Strong focus on genealogy of problem
 - Many frames: paradigms, mindscapes, discourses
 - Solution often in consciousness transformation, in changing worldview, in rethinking politics of reality.
 - Solution long-term action based on the interaction of many variables
 - Often appearing in fringe/peripheral journals
 - This can be epistemic, worldview or stakeholder-based

- * *Myth/metaphor analysis*
 - Problem constituted by core myth (unconscious structures of difference, basic binary patterns)
 - Solution is to uncover myth and imagine alternative metaphors
 - Often appearing in the work of artists and visions of mystics
 - Solution can rarely be rationally designed

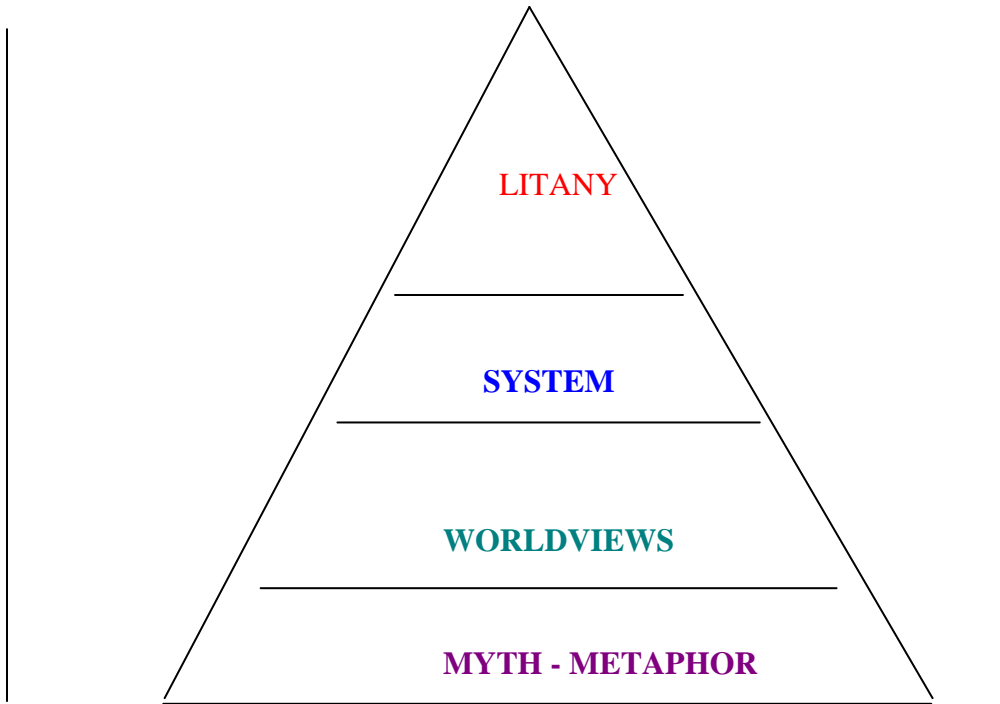
CAUSAL LAYERED ANALYSIS TABLE (developed by Jennifer Fitzgerald).

Level	Problem	Solution	Who can solve it?	Source – Information
Litany Official public discourse	Problem seems difficult to solve or easy to solve as depth is not seen	Short term approaches	Government	Television Newspaper
Systemic, Social Science analysis Society, Technology, Economy, Environment and Politics	Problem because of short term historical factors	Integrated approaches – systemic solutions	Partnerships between different sectors of society – government plus business plus civil society plus individuals	Policy Journals, editorials
Worldview (Discourse – Paradigm)	Constituted by frame of analysis – deep structure.	Transform consciousness, change worldview, rethink self and other	Writers, philosophers, those outside the dominant discourse	Peripheral journals, ideological journals, philosophy courses
Myth and Metaphor	Constituted by core myth, derived from often a traumatic or transcendent event	Uncover myth and metaphors and create processes to imagine alternative stories of what it means to be. Cannot be rationally designed. Emergence is necessary	Collective unconscious often guided by visionary, mystic, leader.	Works of artists, visionaries, mystics, and certain movies

CAUSAL LAYERED ANALYSIS

Visible

Short Term



Depth

Long Term

CAUSAL LAYERED ANALYSIS FURTHER READING

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ENDNOTES

¹ Dator, James, "Theories, Methods and Approaches to Teaching Futures Studies: A backward glance." Keynote Speech, Tamkang University International Conference on Teaching Futures Studies. November 5-7, 2002. Dator, James, "Teaching Futures Studies: Some lessons learned," *Journal of Futures Studies* 2003, 7(3), 1-6. One anonymous reviewer objected to CLA being associated with a particular inventor in that multi-level analysis was common to the field. However, the reviewer was unable to provide citations or other evidence to show its use or publication elsewhere. Moreover, multifold analysis is different from multilevel analysis. Finally CLA is not just a layered methodology but also a new theory of knowledge.

² Galtung, Johan. Social Cosmology and the Concept of Peace. *Journal of Peace Research* 1981, 18 (2). Also: Galtung, Johan. Western Civilization: Anatomy and Pathology. *Alternatives* 1981, vol. 7.

³ Galtung J. Structure, culture and intellectual style. *Social Science Information* 1981, 20(6): 816-856.

⁴ Foucault, Michel. *The Order of Things: An Archaeology of the Human Sciences*. New York, Vintage Books, 1973. Shapiro, Michael, *Reading the Postmodern Polity: Political Theory as Textual Practice*. Minneapolis, University of Minnesota Press, 1992

⁵ Sarkar, P.R. *Idea and Ideology*. Calcutta, Ananda Marga Publications, 1978, fifth edition. Also: Inayatullah, Sohail and Fitzgerald, Jennifer, Eds. *Transcending Boundaries*. Maleny, Australia, Gurukul, 1999.

⁶ Slaughter, Richard. *Futures Concepts and Powerful Ideas*, Kew, Victoria, Australia, Futures Study Centre, 1991.

⁷ It is crucial to see CLA, as with all theories and methodologies, as evolving, each case study refining and adding to the knowledge base and each user adding something of his or her own perspective/insight.

⁸ Stone, Hal and Stone, Sidra, *Embracing Our Selves: The Voice Dialogue Manual*, New World Library, Novato, CA, 1989. For more on how their work is used in futures thinking in general and CLA in particular, see Inayatullah, Sohail, "Six Pillars: Futures thinking for transforming," *Foresight* 2008, 10 (1) 4-21.

⁹ In particular, the work of Bert Hellinger and his constellation therapy lends itself to a spatial mapping of the self. See: Hellinger, Ber, *Acknowledging What Is*. Zeig, Arizona, Tucker and Co. 1999. Translated by Coleen Beaumont.

¹⁰ See, for example, Linstone, Harold, "What I have Learned: The Need for Multiple Perspectives," *Futures Research Quarterly*, Spring 1985, 47-61. He divides futures into the

technical, organizational and personal. Linstone's model is the multilevel analysis of CLA but does not access the discourse/worldview level or the myth/metaphor level. It does an excellent job of expanding the systemic level of analysis, however. Also see Masini, Eleonora and Gillwald, Karin, "On Futures Studies and Their Social Context with Particular Focus on West Germany," *Technological Forecasting and Social Change*, 38, 1990, 187-199. They take Linstone's model and apply it historically to Europe and the US, seeing futures as going through technical, organizational and personal phases. See also, Sardar, Zia, "Colonizing the future: the 'other' dimension of futures studies," *Futures* 1993, 25 (2), 179-187. Sardar argues for a colonization/decolonization dialectic. The classic map of futures studies remains Roy Amara's division into preferred, possible and probable. See his, Amara, Roy "The Futures Field," *The Futurist*, February, April and June 1981. See also, Bezold, Clement and Hancock, Trevor "An Overview of the Health Futures Field". Institute for Alternative Futures, Washington DC, 1993. 29 pages. Bezold adds the plausible to Amara's three categories.

¹¹Inayatullah, Sohail, "Deconstructing and Reconstructing the Future: Predictive, Cultural and Critical Epistemologies," *Futures* 1990, 22(2): 115-141.

¹²Inayatullah, Sohail, "From Who am I to When am I?: Framing the Time and Shape of the Future," *Futures* 1993, 25(3): 235-253.

¹³ Varna (or color) builds on Marx's class by including episteme (the boundaries of knowing) and social-psychological type. Traditionally it referred to caste. Sarkar, however, has transformed it, taking it out of its Hindu framework and squarely into social theory macrohistory. Thus Sarkar posits four historical types: the worker, the warrior, the intellectual and the merchant. The goal in Sarkar's system is to ensure a rotation of elites, so that any particular varna does not dominate for too long. See, Sohail Inayatullah, *Understanding Sarkar: The Indian Episteme, Macrohistory and Transformative Knowledge*. Leiden, Brill, 2002.

¹⁴ This article is derived from material in chapter two of Inayatullah, Sohail, *Questioning the Future: Futures Studies, Action Learning and Organizational Transformation*. Tamsui, Taiwan, Tamkang University Press, 2002 (2007, third edition) as well as a special issue of *Futures* titled, Layered Methodologies. *Futures* 2002, 34(6). Additional articles using CLA have been featured in the *Journal of Futures Studies*. For example, see Marcus Bussey, "Sustainable Education: Policy in Search of a New Language," *Journal of Futures Studies* 2001, 6(1), 71-88 as well as Bussey, Marcus; "Critical Spirituality: Neo Humanism as Method," *Journal of Futures Studies* 2000, 5(2); May, Graham, "Worldviews, Assumptions and Typologies of the Future", *Journal of Futures Studies*, 2000, 5(2); Philip Graham, "Contradictions and Institutional Convergence," *Journal of Futures Studies* 2001 5(4), 1-30. May, Murray and Hill, Stuart. "Unpacking Aviation Travel Futures – An Application of Causal Layered Analysis," *Journal of Futures Studies* 2002, 7 (1), 41-66. In addition, dozens of MA and Ph.D. students' have used it as their organizing methodology – to begin with, David Wright, Patricia Kelly, José Ramos at the Queensland University of Technology, Ivana Milojevic at the University of Queensland, and Phillip Daffara, Kate Teske, Steven Gould and Marcus Anthony at the University of the Sunshine Coast and José Polo at Tamkang University. Resultant publications include: Anthony, Marcus, *Integrated Intelligence*. Rotterdam, Sense Publishers, 2008, Milojevic, Ivana, *Educational Futures*. London, Routledge, 2005 and Kelly, Patricia. *Toward Globo Sapiens*. Rotterdam, Sense Publishers, 2008.

A description of CLA was first published in the following article by Inayatullah, Sohail, Ihsan, Samar and Obijiofor, Levi, "The Futures of Communication," *Futures* 1995, 27 (8), 897-904. Later CLA was presented in: Inayatullah, Sohail, "Futures Visions of Southeast Asia: Some Early Warning Signals," *Futures* 1995, 27 (6) 681-688. Also see: "Causal Layered Analysis: Poststructuralism as method," *Futures* 1998, 30 (8), 815-830; Inayatullah, S., "Civilizational Futures and Beyond," *Futures* 1996, 28 (6), 590-593; Wildman, Paul and Inayatullah, Sohail, "Ways of Knowing, Civilization, Communication and the Pedagogies of the Future," *Futures* 1996, 28(8), 723-740, (with Paul Wildman). As a book chapter, see, Inayatullah, Sohail, "Methods and Epistemologies," in Slaughter, Richard, ed. *The Knowledge Base of Futures Studies: Foundations*. Vol. 1, Melbourne, DDM Publishers, 1996, 187-203; and Inayatullah, Sohail, "Further and Closer Than Ever Before: A Social Science/Futures Studies View of the Contributions of Religion to Peace in Marti, Felix, ed. *The Contribution of Religion to the Culture of Peace*, Barcelona, Centre UNESCO de Catalunya, 1995, 95-105. Also, see, Inayatullah, Sohail, "Pedagogy, Culture and Futures Studies," Dator, James, *Advancing Futures: Futures Studies in Higher Education*, Westport, Ct, Praeger, 2002, 109-124. Articles and essays using CLA have been combined in a Reader. See Inayatullah, Sohail, ed., *The Causal Layered Analysis (CLA) Reader: Theory and Case Studies of an Integrative and Transformative Methodology*. Tamsui, Tamkang University, 2004. Contributors include: Johan Galtung, Michael Shapiro, Zia Sardar, Richard Slaughter, David Turnbull, Patricia Kelly, Phil Graham, Leigh Canny, Dennis List, Alan Fricker, Ivana Milojevic, Sanne Tikjoeb, Paul Wildman, Jennifer Gidley, Marcus Bussey, Christopher Jones, Murray May, Stuart Hill, James White, David Wright, Marcus Anthony, Serafino De Simone, José Ramos, and Colin Russo.

¹⁵For the classical treatment of this, see Slaughter, Richard, "Towards a Critical Futurism," *World Future Society Bulletin*, July/August and September/October 1984 and Wendy Schultz, "Silences, Shadows, Reflections on Futures," in Dator, Jim and Roulstone, Maria, eds. *Who Cares? And How? Futures of Caring Societies*, Honolulu, World Futures Studies Federation, 1988. Richard Slaughter writes that "critical futures study is itself an approach to futures questions that arises from a deep understanding of the dysfunctions of the Western worldview. This can seem threatening to those whose professional interests are bound up with ... the industrial growth ideology. But, in fact, the analysis of dysfunctions at this deep level is only a ground-clearing exercise. Beyond this the task of exploring new domains of cultural possibility and potential." See Slaughter, Richard, "Developing and Applying Strategic Foresight," 11.

¹⁶ For example, *The Futurist* 2003 (March-April), 48-50 features an article titled "Winning the War Against Aging," by João Pedro de Magalhães. The interpretive question is would other cultures construct aging as a war? In Taiwan, for example, aging is not seen as something to battle but as part of life.

¹⁷ The term *constitute* is used here as civilizations not only see or describe but their social structure is complicit in how a particular category such as population is created. That is, the knowledge frame precedes the meeting of the knowledge category.

¹⁸See, Manas Ray, "India, Fifty Years On: Revisiting Modernity," research paper, School of Media and Journalism, Queensland University of Technology, Research paper quoting Kaviraj, Sudipto, "Religion and Identity in India" *Ethnic and Racial Studies* 1997, 20 (2), 331.

¹⁹ However, it is not that the pre-existence of reality is denied but that the communication of reality is through language, coded through civilization and history.

²⁰For the best discussion, See Shapiro, Michael, *Reading the Postmodern Polity*, Minneapolis, University of Minnesota, 1992.

²¹Postmodernists would reject the idea that deconstruction etc. should be seen as a method. It is considered an anti-method, focused on problematizing not on providing recipes for policy. Moreover, there are no practitioners of postmodernity, if at all, the episteme of postmodernity practices on us.

²² For example, that there is one truth, that there are multiple truths, that there is no truth, that truth is situationally constituted. CLA differs from critical realism in that critique is layered and that truth is constituted by the level of analysis being employed.

²³ Peter Bishop, email communication. 2 January 2003. Bishop writes that his primarily substantive problem is that: "the implication is that the "deeper" layers are somehow "better" than the "shallower" layers. Even the concept of layers and depth casts a negative image on the empirical layers above it. I'm surprised that a technique that purports to be so conscious of how language constructs reality would label the various parts of the technique with such value-laden words. I understand that values permeate everything, but one can keep it to a minimum. I don't think that was done here--the most egregious example being the concept of the litany."

²⁴ For more on this, see, Sardar, Ziauddin, *Postmodernism and the Other*. London, Pluto, 1998. Especially see Sardar's chapter on Fairytales of Science.

²⁵ Using Pitirim Sorokin's typology, civilizations that focus on the deeper levels are Ideational. Civilizations focused on the first two levels are Sensate. Civilizations that have balanced all four levels are Integrated. For more on this, see Galtung, Johan and Inayatullah, Sohail, *Macrohistory and Macrohistorians*. Westport, Ct, Praeger, 1997.

²⁶ For example, one Australian insurance company used CLA to develop new products and services for banks. CLA sorted out the levels of analysis. It was also useful in relating products to marketing campaigns.

²⁷ The Club of Rome's *Limits to Growth* and other studies is a modern example of this.

²⁸ Of course, those whose development of the litany required great not only analytic capability but as well as the capacity to touch the system, the worldview and myth/metaphor level. A litany is not a litany unless it has something to rest on. For example, the litany of economism rests on the world financial system which rests on the worldview of capitalism which rests on the myth of greed, the invisible hand, and self-interest.

²⁹ See, Inayatullah, Sohail "The Futures of Communication," *Futures* (with Samar Ihsan and Levi Obijiofor), 1995 27(8): 897-904 and Inayatullah, Sohail "Futures Visions of Southeast Asia: Some Early Warning Signals," *Futures* 1995, 27(6): 681-688;

³⁰ Johan Galtung, "Enactment of a Universal Drama – Ethnic Conflicts," *New Renaissance* 1996 7 (1), 13-15.

³¹ In Pakistan, for example, parking spaces are rare – parking as a regulatory discourse is not active there.

³² Of course, there is some overlap here; the leader focused on the systemic level, for example. But generally the actor engaged in the policy tends to see solutions appropriate to his or her role. Leaders tend to focus on the litany and the myth/metaphor level. Managers on the litany and the systemic level, even as they use myths/metaphors – "the bottom line" – to convince others to act.

³³ Most policy thus merely reinscribes the modern capitalist worldview. However, by noticing how a particularly litany is shaped by a particularly worldview, this allows us to enter alternative worldviews and articulate different policy statements based on them. At the same time, CLA in itself is part of a worldview – one committed to methodological eclecticism but in the framework of a layered, post-postmodern view of reality. It thus not only challenges the "totalizing nature of the empirical paradigm" (to use Paul Wildman's phrase) but as well the horizontal relativism of postmodernism.

³⁴ See Sohail Inayatullah, "Six Pillars: Futures thinking for Transforming," *Foresight* 2008 10(1), 2008, 4-21.

³⁵ One such slogan is: "water is king, and Here is its Kingdom," posted at the Imperial Irrigation District's Headquarters in the Colorado desert. Huck, Peter, "Midnight at the Oasis: California water politics coming to boil," *The Weekend Australian Financial Review* 2003, 1-2, February, 45.

³⁶ www.i-m-c.org. I am thankful to the insights of Robert Burke and Gordon Wills. See: Revans, R.W., "*The Origins and growth of Action Learning*", London, Chartwell-Bratt, 1982.

³⁷ And, of course, what should be obvious is that the stating of these questions can themselves be deconstructed, that is, how my writing – as the author of this piece – is complicit in this particular use of CLA.

³⁸ Fricker, Alan, "The conscious purpose of science is control of nature: its unconscious effect is disruption and chaos," *Futures* 2002; 34(6): 535-546. Special issue of *Futures* edited by Sohail Inayatullah, "Layered Methodologies."

³⁹ Ibid.

⁴⁰ Ibid., 544.

⁴¹ Ravetz, J. The science of 'what-if?' *Futures* 1997; 29(6): 533-540. Ravetz, Jerome. Ed. *Futures*, special issue. 1999; 31(7).

⁴² Kelly, Patricia, "In occupied territory: future.con," *Futures* 2002; 34(6): 561-570. Special issue of *Futures* edited by Sohail Inayatullah, "Layered Methodologies."

⁴³ www.futurefoundation.org

⁴⁴ In contrast see the works of Robert Pope, whose paintings open up the possibilities of the future. See them in Inayatullah S, Wildman P. *Futures Studies – Methods, Emerging Issues and Civilizational Visions*. Brisbane, Prosperity Press, 1998. Also at: science-art <sciart@norex.com.au>www.science-art.com.au

⁴⁵ Nandy, A. *Tradition, Tyranny and Utopias*. Delhi, Oxford University Press, 1987, 13.

⁴⁶ Wildman, Paul, "The litany of death: a deep futures critique of the Australian Royal Commission into aboriginal deaths in custody," *Futures* 2002, 34(6): 571-581. Special issue of *Futures* edited by Sohail Inayatullah, "Layered Methodologies."

⁴⁷ The Club of Rome's Limits to Growth report had a great influence in moving thinking to the systemic level as has the environmental movement.

⁴⁸ Wright, David, "Applying Foucault to a future-oriented layered analysis in a post-bubble Japanese community," *Futures* 2002, 34(6): 523-534. Special issue of *Futures* edited by Sohail Inayatullah, "Layered Methodologies."

⁴⁹ See, Inayatullah, Sohail "Teaching Futures Workshops: Leadership, Ways of Knowing and Institutional Politics" *Futures Research Quarterly* 1998, 14 (4), 29-36;

⁵⁰ In the USA system, labor is Democratic and liberal relates to the Republican.

⁵¹ Perhaps: community learning, through more spiritual approaches that revive the ideas of initiation into meaning and culture systems that current educational institutions lack, wherein merely an application form suffices.

⁵² Perhaps: Focused on distance learning or interactive learning where boundaries between student and teacher, text and context disappeared.

⁵³ Milojevic, Ivana, "Creating Spaces for Poverty Free Futures," *Development* 2001, 44 (4), 19-23.

⁵⁴ www.libertarians.org quoted in Ivana Milojevic, "Poverty-Free Futures." Accessed January 2001. Now at www.freedomkeys.com.

⁵⁵ www.libertarians.org quoted in *ibid*.

⁵⁶ Udayakumar, SP, "The Futures of the Poor," *Futures* 1995, 27 (3), 347 quoted in *ibid*.

⁵⁷ Udayakumar, 347 quoted in *ibid.*

⁵⁸ Hollis, DW, *The ABC_CLIOI World History Companion to Utopian Movements*. Santa Barbara, California, 1998, 14 quoted in *ibid.*

⁵⁹ Hollis, 14, quoted in *ibid.*

⁶⁰ Milojevic, 23.

⁶¹ Terranova, Debbie, "Fathoming the Ageing Workforce Debate: Causal Layered Analysis in Action," *Journal of Futures Studies* 2004, 9 (2), 37-42.

⁶² Terranova, 39.

⁶³ *Ibid.*

⁶⁴ *Ibid.*

⁶⁵ *Ibid.*

⁶⁶ *Ibid.*, 39-40.

⁶⁷ *Ibid.*, 40.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*

⁷¹ *Ibid.*, 41.

⁷² *Ibid.*

⁷³ Slaughter, Richard, "Developing and Applying Strategic Foresight," *The ABN Report* 1997, 5 (10), 7-15.

⁷⁴ *Ibid.*, 11.

⁷⁵ *Ibid.*

⁷⁶ In a series of emails, edited by Richard "kaipo" Lum, "Uncut, Unedited and Not-Yet-Rated: Discussions of Futures Ideologies. World Futures Studies Federation, *Futures Bulletin* (Vol. 27, No. 2 and 3, 2002).

⁷⁷ Remarked one anonymous reviewer, "I perused the CLA paper and find it remarkably obtuse and only partly comprehensible. It is at such an abstract, philosophical, mythic level that coming from a science/technology background, I certainly cannot hope to give it an objective evaluation."

⁷⁸ In Australia, for example, at Brisbane City Council, Gold Coast City Council, Endeavour Foundation, numerous departments in the Queensland Government (Health, Main Roads, Education, Communities), Western Australia Department of the Premiere and Cabinet, Australian Federal Police and the Australian Government Department of Agricultural, Fisheries and Forestry. CLA is also used in the Asia-Pacific region, for example, with the Singapore Government, Office of the Prime Minister (Public Service Division), Singapore Government Ministry of Trade and Industry; Malaysian Government, Ministry of Education, Malaysian Government Industry-Government Group for High Technology (MIGHT), University Sains Malaysia, Penang; and the Thailand-based APEC Centre for Technology Foresight. CLA has been presented in a workshop setting to dozens of associations and organizations including the Australasia Association for Health Quality Care, Queensland Advocacy Incorporated, Queensland Catholic Education Commission and Australia Biosecurity.

⁷⁹ E-mail, Jennifer Bartlett, February 19, 2004.

⁸⁰ E-mail, Jenny Brice, March 30, 2004.

⁸¹ E-mail, Kate Donnelly, February 5, 2004.

⁸² Ono, Ryota, *Helping Students Realize their Full Potentials: Teaching Futures Studies in Singapore and Japan*. Paper Presented at the Tamkang International Conference on Teaching Futures Studies. Tamsui, Taiwan, November 5-7th, 2002. Also, a shorter version of this paper is in the *Journal of Futures Studies*, (7) 3, February 2003, 41-50

⁸³ Wherein the details of the scenario are developed.

⁸⁴ For an exploration of these differences, see Wildman, Paul and Inayatullah, Sohail "Ways of knowing, culture, communication and the pedagogies of the future," *Futures*, 1997 28 (8), 723-741.

⁸⁵ *The CLA Reader* addresses this lack of evidence. Also, for the latest research see, <http://www.metafuture.org/causal-layered-analysis-papers.html>. The site is regularly updated with new CLA research.

⁸⁶ Emerging issues analysis is a method which identifies issues before they reach the trend or problem phase. It makes the assumption that issues follow an s-pattern growth curve from emerging to trend to problem. For more on this method, see the path-breaking work of Graham T.T. Molitor, gmolitor@comcast.net. Public Policy Forecasting, 6343 Saucon Valley Drive Fayetteville, Pennsylvania 17222, USA.

⁸⁷ Glenn, Jerome and Gordon, Theodore, *2002 State of the Future*. Washington DC, American Council for the United Nations University, 2002.

⁸⁸ Institute of Medicine, November 1999 Report. www.iom.edu. Also, see: <http://www.ahcpr.gov/qual/errorsix.htm>. Also see, www.who.org. According to the World Health Report 2002 almost 17 per cent of patients suffer "measurable" harm while undergoing unrelated treatment in health care facilities.

⁸⁹ By reinscribe, we mean far more than merely repeating the present. Reinscribing refers to the boundaries of the text – the epistemic framework that precedes the text – being restated. Not only is change thus far more difficult since the past is repeated but the categories of the present are as well reinforced.

⁹⁰ For details on this, see, Inayatullah, Sohail and Boxwell, Gail, eds. *Islam, postmodernism and Other Futures: A Ziauddin Sardar Reader*. London, Pluto Books, 2003.