

Causal Layered Analysis

A Four-Level Approach to Alternative Futures

Causal Layered Analysis (abbreviated as CLA) is an approach and a technique used in foresight to shape the future more effectively. CLA may be used when debating all types of issues, collectively or individually. It works by identifying different levels of analysis to create coherent new futures. The four levels are core to CLA: the litany, the social/systemic causes, the discourse analysis that legitimizes and supports the worldview, and underpinning that worldview, the myth/metaphor deeply linked to culture and long-term history.

APPLICATIONS SCOPE

CLA approach can be used as:

- a way to understand the inner world of current and future meanings (point of view of different stakeholders);
- a stand-alone methodology to help understand and gather different perspectives on a topical issue;
- a part of a larger foresight process, especially to explore issues and scenarios.

Time frame: The CLA approach encompasses phenomena and their analyses at different times and depths according to the four levels. The evolution of long-term paradigms is particularly well integrated in this approach.

Domain: All domains.

Number of participants: As a technique, CLA works especially well in workshops or in groups of five to a few dozen participants.

TECHNICAL REQUIREMENTS

It would be instructive to participate in an exercise using the CLA approach before any experimenting or facilitating. Mastering systemic analysis, deconstructing representations, and managing intercultural issues form a useful skill set.

TIME FRAME

When used for a complex issue that involves several stakeholders, the CLA approach can be of a short term nature, that is, a half or full day workshop. CLA as a research tool, that is, for doctoral work then requires weeks and months of analytic work.

RELEVANCE AND USE IN FORESIGHT

Now used around the world, CLA may be found detailed in several case studies as applied in international, thematic, and industrial projects. CLA could be considered as a “third way” between the North American and European approaches because of the emphasis placed on narrative/cultural aspects.

CLA's five most common uses: 1) Mapping the present/future; 2) Critically unpacking an issue; 3) Creating a preferred future; 4) Reconstruction from an alternative worldview; 5) Mapping of multiple perspectives leading to a transformed future that integrates difference.

TOOL IMPLEMENTATION COSTS

In a day session, the cost of a facilitator and other normal workshop costs.

For a broader engagement, that is, from workshop to organizational strategy then the costs of other experts.

For a research project, the costs of interviewing stakeholders, that is, as part of a national strategy the time required to interview citizens, associations, government, the private sector, thought leaders and others.

BASIC CHECKLIST

- The facilitator needs to have a theoretical and practical understanding of CLA.
- Participants need to be in a double loop learning environment where they are aware of their own worldviews and narratives.
- A clear task or case study to which CLA can be applied, as CLA works best from a current problem that must be addressed.
- Facilitator has the ability to move from problems to solutions.

Prospective and Strategic Foresight Toolbox

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Causal Layered Analysis

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Abstract

Invented in the late 1980s, Causal Layered Analysis (CLA) is a research theory and method that seeks to integrate empiricist, interpretive, critical, and action learning modes of research. In this method, forecasts about the future, the meanings individuals give to these forecasts, the critical assumptions used, as well as subsequent actions and interventions are all valued and explored. This applies to both the external material world and inner psychological worlds.

As a method, CLA's utility lies not so much in predicting the future as in creating transformative spaces for the analysis and the creation of alternative futures. CLA also proves useful in developing policies and strategies that are more robust, efficient, and effective as well as deeper, more long term and inclusive. Indeed, CLA has been used successfully with national governments, corporations, international think-tanks, communities, and cities around the globe. It has also been used as the primary research method for dozens of graduate students in over 20 universities worldwide.

CLA consists of four levels: the litany, social/systemic causes, discourse/worldview, and myth/metaphor. The first level, or the litany, presents the official unquestioned future. The second layer or level is the social, technological, economic, environmental and political causation level; *i.e.*, the systemic perspective. The data of the litany is explained, questioned, mapped and analyzed at this second level. The third level gives the discourse/worldview. Deeper, unconsciously held ideological and discursive assumptions are unpacked plus the ways in which different stakeholders construct the litany and system are explored at this level. The fourth level provides the myth/metaphor which contains the unconscious emotive dimensions of the issue.

The user's challenge lies in conducting research and praxis up and down these layers of analysis to ensure that different ways of knowing are included. Different perspectives including those of stakeholders, *e.g.*, their ideologies and epistemes are brought into the third and fourth levels, those of worldview and myth respectively. This allows for breadth. These different views are then used to reconstruct the more visible levels, *e.g.*, social policy and litany. As a result, in the transformed future, the system that supports the new reality and the litanies that quantitatively measure it are also transformed.

CLA may also be applied to the inner world of meanings. How? CLA explores current stories that we tell ourselves and seeks to create new narratives for individuals so that they may represent their desired futures more effectively.

Conceptual movement through depth and breadth allows for the creation of authentic alternative futures and integrated transformation. CLA thus begins and ends by questioning the future in its effort to create alternative futures.

CLA may be used as a stand-alone methodology, *e.g.*, to help understand a different perspective on a topical issue. If a client were preparing a foresight project on the futures of driverless cars, to give a current example, CLA could help determine the interests of such varied groups as citizens, unions, ministries of transport, ministries of health, police officers and insurers. This method may also be used to ensure that the strategy is more likely to be carried out by understanding the metaphors used by the various actors to make meaning. Stumbling blocks

Keywords

Critical theory | Narrative | Layers | Epistemology | Worldview | Metaphor

can thus be avoided or eliminated. As a stand-alone method, CLA can be applied not only to groups but to individuals, to the self. In fact, this CLA use ensures that the practitioner is reflective, aware of her or his bias.

CLA may also become part of a larger foresight process. For instance, in the Six Pillars model,¹ CLA is used in the deepening process. Issues are identified then explored from multiple perspectives. A map of the current reality charted along four levels is then developed. A map of the preferred or transformed future is also drafted. At this point, CLA may be applied to the narrative of the stakeholders, so that they better understand their inner metaphors and strategies. This application to narrative helps ensure that they are aligned in their thinking. After the deepening process, CLA is used in the incasting scenario phase so that each scenario includes not just drivers and weights of the past but the four layers/levels of analysis. Similarly, CLA serves in the transforming phase in backcasting.² It is important to keep in mind that not just events are ‘remembered’ from the past, but also the shift in metaphors that helped create the desired future.

In short, CLA is beneficial because it can do the following:

- (1) Expand the range and richness of scenarios (the CLA categories can be used in the incasting phase of scenario writing).
- (2) Promote the inclusion of different ways of knowing and accompanying interests among the participants when used in a workshop setting.
- (3) Appeal to a wider range of individuals who can use it because the method incorporates non-textual and poetic/artistic expression in the foresight process.
- (4) Recognize and layer participants’ positions (conflicting and harmonious stances).
- (5) Move the discussion beyond the superficial and obvious to the deeper and marginal.
- (6) Allow for a range of transformative actions by various actors.
- (7) Lead to policy actions that may be informed by alternative layers of analysis.
- (8) Lead to sustainable policy actions; *i.e.*, authentically solve problems instead of merely reinforcing current issues.
- (9) Develop strategy that links the short-, medium- and long-term future.
- (10) Reinstate the vertical in analysis; in other words, use different worldviews to understand the future and still decide on a preferred future. ■

1. This model has the following pillars: (1) Mapping the future using the method of the futures triangle; (2) Anticipating the future using the methods of emerging issues analysis and the futures wheel; (3) Timing the future using the method of the Polak and the Sarkar game; (4) Deepening the future using CLA; (5) Creating alternatives using scenario planning; and (6) Transforming the future using the methods of visioning, backcasting, and the transcend conflict resolution. For details, please see author’s article listed in the bibliography.

2. Backcasting is the process of working backwards from the definition of the possible future, in order to determine what needs to happen to make this future unfold and connect to the present. *Source: A Glossary of Terms commonly used in Futures Studies*, Forward Thinking Platform, September 2014. URL: http://www.fao.org/docs/eims/upload//315972/FTP_Glossary%20flyer_vso3.pdf. Accessed May 4, 2017.

Description

Embedded in the discourse of futures studies, Causal Layered Analysis (CLA) draws largely from poststructuralism, macrohistory, and postcolonial multicultural theory. It seeks to move beyond the superficiality of conventional social science research and forecasting methods insofar as these are often unable to unpack discourses, worldviews and ideologies, not to mention archetypes, myths, and metaphors. Most traditional methods forecast a future using the terms of the present instead of reframing it through alternative worldviews and narratives.

CLA is less concerned with predicting a particular future than with opening up both present and past to create alternative futures. CLA focuses less on the horizontal spatiality of futures and more on the vertical dimension of futures studies, of layers of analysis. It opens space for the articulation of constitutive discourses which can then be shaped as scenarios. In essence, CLA integrates methodologies, seeking to combine differing research traditions.

As an integrated and layered approach, CLA is not based on the idiosyncratic notions of any particular researcher. Nor is it a turn to the postmodern, in that all methods or approaches are equally valid and valuable. Hierarchy is not lost and the vertical gaze remains. However, CLA challenges notions of power and divorces hierarchy from its feudal/traditional modes. It should be emphasized that this eclecticism is not merely a version of pragmatic empiricism; *i.e.*, “Do whatever works, just solve the problem”. Indeed, the way in which myth, worldview, and social context combine to create particular litany problems remains foundational to CLA.

Scope of this Approach

CLA operates at a number of levels, delving deeper than the litany, the headline, or a data level of reality to attain a systemic level in understanding the causes behind the litany. Below the systemic, CLA plunges further, searching for worldviews or stakeholder views on specific issues. Each subsequent level below reveals a deeper cause as the method unpacks the deepest metaphor levels of reality.

Quality and safety issues in health care offer this sobering example. At the litany level, the United States faces a problem in that more than 100,000 deaths per year are related to medical mistakes. If we look no further into understanding causation, the business-as-usual strategy will prevail. That usually means focusing on the individual by offering more training

FIGURE 1. CLA: THE ICEBERG IMAGE WITH LAYERS



Source: author.

for particular doctors. By delving deeper, however, we discover that safety issues lie not just with particular doctors making errors, but rather with the medical and hospital system as a whole. Long working hours, poorly designed hospitals with an aging population, and miscommunication among different parts of the health system top the list of key issues in this sector.

Below the systemic level lies the worldview, the deep structure of modern medicine. At this layer, the reductionist scientific approach may be brilliant for certain types of problem solving but proves less useful in connecting with patients and in seeing the whole picture. As a result, patients opt for other systems which provide a deeper connection and more dialogue. They intuitively move to the deepest level, that of myth and metaphor. These organizing metaphors may be expressed in phrases like “The patient will see you now” or “I am an expert of my body”. This last example challenges the modernist view that the doctor is always right.

CLA broadens our understanding of issues by creating deeper scenarios. We can explore deep myths and new litanies based on the points of view of different stakeholders, *e.g.*, nurses, other caregivers, peer-to-peer health networks and future generations, to name a few, and then see how they construct problems and solutions.

Lastly, CLA may be used in implementing new strategies that address issues. The layered analysis process prompts questions such as:

- Does the new strategy ensure systemic changes (incentives and fines)?
- Does it lead to worldview and/or cultural change?
- Is there a new metaphor, a narrative for the new strategy?
- Does the new vision have a new litany, a fresh way to ensure that the strategies reinforce the new future and are not chained to the past?

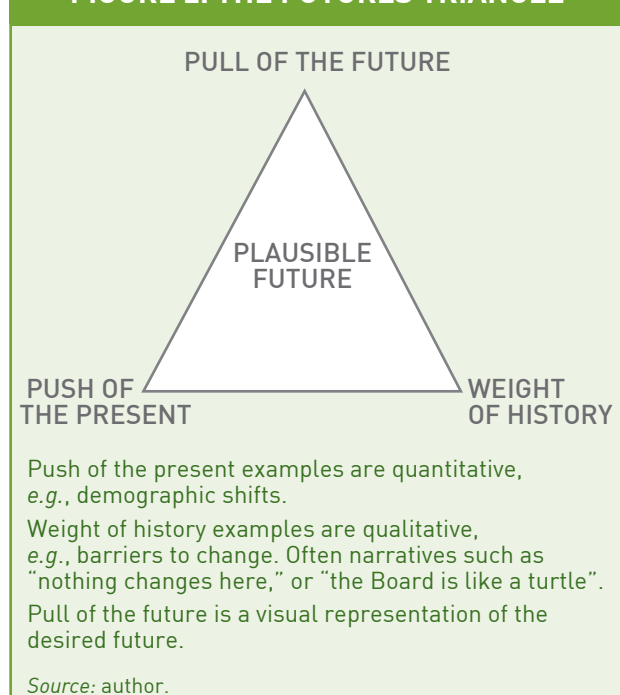
CLA thus enriches everyone’s understanding of strategy while mapping reality from the vantage point of multiple stakeholders enables users to develop more robust scenarios. CLA thus helps all those involved better grasp the current reality and provides a tool to dig deeper. On balance, it allows users to create an alternative future that is robust in its implementation.

Prerequisites

As mentioned, CLA can be used as a stand-alone methodology in a workshop format or as part of a normal foresight strategy event of one day or more. If a stand-alone methodology, facilitators or partners should provide the reasons for choosing CLA. One suggestion is to explain how this foundational methodology is useful because of increased differentiation in views of space-time and reality. Participants readily accept that we are now experiencing a heterogeneous rate of change whose very nature is disputed. After some theoretical background, it is best to present the conceptual framework, case studies, CLA game, and then proceed to actual analysis.

As part of a broader foresight workshop, CLA works best when initiated after either methods that map the future, *e.g.*, the futures triangle, or methods that anticipate the future.

FIGURE 2. THE FUTURES TRIANGLE



CLA can be used after the future has been opened up through scenarios or even before scenario building to comprehend how different groups construct the future.

The facilitator needs a solid grasp of foresight methods plus an understanding of how different worldviews create different futures. A basic example comes to mind right away: people who use science to understand the world and people who rely on one text; *i.e.*, those who believe that reality and the future are givens.

As a research project, be it client-based or academic, CLA requires:

- An extensive literature review.
- An understanding of four different knowledge domains — (i) empiricism; (ii) systems thinking including causation in social sciences, science, and philosophy; (iii) cross-cultural psychology, philosophy plus religion; and (iv) mythology.

Given the above criteria, CLA scholarly research requires a generalist. Of course, this is the profile of most futurists.

Various Uses of CLA

TABLE 1. USES OF CLA		
	Function	Result
1	Mapping the present/future	Prevents worldview blindness and creates whole-of-worldview and narrative solutions
2	Unpack an issue	Avoids the quick-fix reflex and creates longer lasting strategies
3	Create a preferred future	Moves from how things are to the desired future and enhances the visioning process
4	Deconstruction and reconstruction from an alternative worldview	Challenges assumptions so that other solutions are developed
5	Mapping leading to a transformed future	Includes multiple positions plus a transformed or integrated future
6	As gaming, role-playing	Embodies learning with real time solutions and demonstrates the four layers
Source: author.		

CLA can function in several ways, as charted above and detailed below.

First, CLA can map the present or a possible future. The issue or problem is mapped across different stakeholder views or worldviews. Deeper insights result as to how ‘the other’ views the issue. This can lead to more robust strategies because the ‘other’ is now included in the analysis. Often researchers and organizations perceive both problem and solution from their own perspective only. They live in their own mythology which they consider as an objective reality. By bringing in different worldviews, objectivity and the politics of the present are challenged. Worldview blindness can thus be avoided as a whole-of-worldview approach is used.

Second, CLA may serve to unpack an issue. After articulating the litany of the issue, systemic causes are explored. The worldview that creates the system is identified. Finally, the underlying supportive myth or core metaphor that underpins the worldview is articulated. Solutions for every level are explored. Moreover, by digging deeper, the intent is to seek more effective solutions that are less tied to short-term or quick-fix solutions.

Third, a preferred future can be created using CLA. The issue or problem is understood from the grid of four levels as it currently exists and as it could be, that is to say, the preferred/desired future.

Fourth, CLA enables users to deconstruct and reconstruct their world by challenging the current reality. Once the current reality has been unpacked or deconstructed across the four layers, an alternative worldview is considered. The issue may then be understood from that perspective. After participants consider both the current reality and deconstructed alternative, a transformed solution or future is articulated. The key point is that the resulting alternative future now has an oppositional perspective built into it.

Fifth, CLA makes it easier to map multiple worldviews and create an integrated future. This last approach adds complexity to the previous CLA type precisely because of other worldviews. Along with the current and the alternative reality, other worldviews are considered, and an integrated strategy inclusive of multiple positions is negotiated. Horizontal space is thus expanded by including multiple frames of reference.

Finally, CLA can be used to “game” the future. This means that in a workshop setting, different working groups use roleplay to process the various levels. One group assumes the role of the litany and defines the issue and the headlines. A second group adopts the role of the system and speaks from the view of systemic causation. A third group represents the different worldviews (each group member becomes a different stakeholder) relevant to the issue, including the view from future generations, from 2030 and beyond. The last group holds the space of metaphors, and finds new stories to create new litanies. As the game moves along there is interplay and a new narrative, which may fuel an alternative future. Most often, the metaphor table suddenly finds a new story that changes the direction of the debate. This group can hone a new lens through which to view and create a different future. What is critically significant is that the game helps forge an alternative future strategy more likely to succeed because the perspectives of the four levels have been consulted. As the iterative nature of the game develops, there is weaving in and out, and the litany group often begins to see the core metaphor underlying their objective position. Note that the metaphor group can articulate new litanies as well.

An example of this took place May 20-23, 2013 in Bellagio, Italy, at a UNESCO-sponsored meeting of futurists focused on the future of foresight. The initial headline was “Futurist wins Nobel Prize”. Systemic reasons were given to explain why this headline was possible, *e.g.*, forecasts had led to major policy change; scenarios, to peace initiatives. The views of different stakeholders followed accompanied by their underlying metaphors. As the CLA process snaked back and forth, the greatest resistance came from the systems perspectives. The participants challenged the view that one particular futurist should win an award because the new narrative was focused on community, expressed as “We are in this together” or “Our future, not my future”. In other words, both the systems and narrative group challenged the litany headline, suggesting that it was not appropriate for this group. The worldview approach chimed in with the futurist stakeholder suggesting that futures studies was not about any individual claim to fame but rather a desired focus of Gaian or planetary health. In their words, the role of the futurist was not to take credit but to get things done. It was a compelling argument, so the headline group suggested another litany: “Community of futurists wins Nobel award.” This then circulated back and forth between the different levels and perspectives with the guiding narrative of “Futurists finally get respect” and “Crystal ball thrown out.”

However, one particular worldview, the critical futurist stakeholder’s, was that the headline of the Nobel Prize did remain within today’s future. This aspect was not sufficiently challenged. Moreover, the role of a futurist is to disturb current categories of understanding and to challenge the business-as-usual attitude. A third headline thus emerged: “Futurists win new Gaian

alternative award.” The systems group contribution was that the award needed to focus on alternatives, offer new solutions, be based on the community and be oriented toward the long-term future. In other words, it should not reinforce the current paradigm but help forge a new one. Essentially the new narrative sounded like “New future, new award,” as opposed to “Old award, futurists finally given respect” and “Old award, futurist finally wins it.” One result of this CLA process was that the futurist’s role acquired new meaning.

A CLA game conducted for students enrolled in Australia’s Swinburne University Masters in Foresight, September 20, 2013, revealed a similar twist. The initial headline read that the *Australian Financial Review* awarded futurists for correct predictions. This led to a stakeholder discussion on why it mattered (the citizen’s viewpoint) to “I’m on board” (the small business owner’s viewpoint). The metaphor offered was that of the Oracle. However, the person playing the role of the futurist suggested that “we [futurists] do not make predictions *per se*, but offer alternatives, indeed, we help shape alternative futures”. Suddenly the worldview challenged the core metaphor previously offered. The story then shifted to that of the “canary in the coal mine”³, and the “crow’s nest of a ship”.

The second headline sounded tautological: “Futurist found to talk about the future.” It actually was a sarcastic reference to Australia’s tall poppy syndrome. Australian culture has characteristically pushed or cut down anyone who stands up above the crowd. The intention is to maintain a flatter society, but the unintended consequence is that the best and brightest often leave or work under the radar to stay below the metaphorical knife. It is worth noting here that the tall poppy syndrome reflects a culture where people of high status are resented or criticized because they have been classified as better than their peers. The image has been employed in other English-speaking countries and the phenomenon is not unique to Australia.

In short, the headline revealed that futurists had become too successful, so they were being mocked. Some participants accepted this as the price of success. Others heard this as an alarm bell reminding them about failure in long-term strategy. In short, it was time to move futures work from the expert level to the citizen level, to teach futures in high schools.

At this stage, the person playing the role of citizen became excited because she could see how the future might be used to her benefit. Earlier, she had remained distant, unable to see the utility of futures studies. The solution to mockery moved from “this is great, we are successful” to “we need to further decentralize futures” in this exercise. The group thus challenged the tall poppy syndrome by moving toward flatter power approaches. And one disengaged student of futures studies found a new metaphor and meaning which may clarify her future role.

In yet another CLA game, organizers’ inner contradictions plus various conflicts of interest emerged clearly when the inner narrative was exposed. The question focused on civil servants’ working from home. However, as the game progressed, what became clear was that participants in the system group and those holding the worldview of the ministry believed that workers were lazy. In other words, while officially they were to develop policy for the State on a teleworking policy, personally, they believed that employees should not work from home. This insight into their implicit inner views was thus confronting their strategic intentions. The unearthing of deep metaphors helped to expose this contradiction, the social process of finding strategies through metaphors, desired futures and strategies was then enabled.

At an event for a university group considering the same issue of teleworking, all stakeholders/worldviews agreed that working from home would be more beneficial. The system group argued that it would save money and reduce traffic congestion. Professors argued that they would be more productive while students asserted that they wanted the choice of when to go

3. An old-fashioned early warning system to detect poisonous gasses, killing the canary first, giving miners time to escape.

to campus or stay home. Resistance came from the person holding the space of the “mother/wife”. She argued that she had been excluded from the public sphere, and now with her husband coming home, he would attempt to dominate the private sphere, or home; *i.e.*, her domain of control. The position in the stakeholder’s own words: “I prefer he stay in the office, at least then I have some free time at home.” In other words, her workload would increase if the strategy were pursued.

In another instance, when the CLA game was used to unpack the futures of infrastructure and facilities at a university, the divide between students and professors widened. Students had the worldview of autonomy and freedom (“I want it my way”). They wanted to leave home and move to campus. Professors had the opposite desire. They wished to work from the comfort of their homes without surveillance from deans and others in regulatory positions. Students also sought to escape regulation; however, for them, this meant escaping the family rules system. The tension between the two viewpoints placed the coordinator of university facilities in a dilemma. The traditional plan of endless new dormitories would not work as the campus would certainly have students but few professors. Later, in scenario planning, it emerged that the solution lay partly in rethinking the role of the dean of student housing. As academics moved out of the university and students moved in, the dean’s role would be not only official responsible for student surveillance (the regulator), but also the advisor, the friend, and less the parent. All of the dean’s new roles would help students become young adults, given their need for autonomy. This dean would need to advise on matters ranging from physical space to virtual friendships and learning how to learn.

All of the above examples underscore how the CLA game yields insight as to what occurs at deeper levels. Questions flow quickly:

- Is strategy in contradiction with the underlying narrative, with the story?
- Which stakeholders will resist? Why?
- Which new strategies can be followed then?

Decidedly not linear, causality is complex, multi-variable, emergent, and driven by narrative. Following this gaming process, CLA is thus analytically used to map out perspectives, and when appropriate, create a new integrated way forward.

Tips and Best Practices

The following practical advice is offered to optimize the teaching and use of CLA.

- First and foremost, **explain the theory**, the rationale behind CLA and then the conceptual framework.
- **Give case studies**, as many people learn through practical examples. Ensure these are interactive by asking participants questions. Include people, their questions and contributions.
- **Have them experience the CLA game**. Along with the examples of the CLA game given earlier of dividing a group by the four layers, one can simply, as Debbie Terranova (2004) has done, divide the room into four worldviews. If using this approach:

- (1) Define in concrete specific terms a litany statement: “Aging in a city in 2030 with 25% of council employees over 65 years of age.”
- (2) Identify social, technological, economic causes.
- (3) Ensure the room is divided into different worldviews or groups (four demographic groups, for example the matures, the baby boomers, generation X, and generation Y). Have

participants talk about the issue from their perspective. Make sure each group hears the other groups.

(4) Have the groups share their core metaphor for the issue. Conclude with solutions at every level, if possible, or at least insights. When CLA is used in a gaming or roleplay situation, it is important to ensure that participants gain insights into the levels of CLA, the power of depth (worldview and metaphor), and how the wisdom of multiple perspectives can lead to new solutions.

► After the CLA experience, **engage the participants in analysis**. This could be a “before and after”; *i.e.*, the current situation and then the transformed reality. This exercise helps move insight into more rigorous analysis.

The best CLA links a new metaphor with a new systemic strategy. This is made possible by exploring multiple worldviews. Of course, the proverbial cherry on top comes in the form of a new litany. The new litany can be a headline or a quantifiable objective.

► For the facilitator, one goal is to **model CLA for the participants**; *i.e.*, truly understand and appreciate different worldviews.

► In a research setting, the main mistake doctoral candidates and younger professors make is getting lost in the data that emerges in a CLA process. As there are four levels of data, so they can confuse levels and simply crunch in endless information. This is fine for the initial analysis, but when presenting material, **it is best to simplify, or focus on elegance**; *i.e.*, present two to three systemic interventions and one new metaphor instead of ten interventions and five metaphors. The goal in using CLA is greater insight, not more information.

TABLE 2. OPTIMAL USE OF CLA IN SIX STEPS

1	Explain theory and conceptual framework
2	Present case studies Ensure these are interactive by asking participants questions Include the participants, their questions or contributions
3	Experience the CLA game
4	Select the CLA technique to use (<i>e.g.</i> , mapping, unpacking, from present to future)
5	Conduct a CLA
6	Have participants present back to the entire group ensuring that they provide focused feedback; <i>i.e.</i> , what worked and what can be improved
Source: author.	

Errors to Avoid

Below are five common pitfalls in the most basic application of CLA with practical suggestions to avoid them and improve the process.

► Confusion of Levels

First, it should be noted that level 1 (the litany) can often be described in quantitative terms or expressed as if a newspaper headline. Second, levels three and four often get confused. In workshop settings, participants need to be reminded that level four is best seen as a metaphor,

perhaps a proverb or an idiomatic expression. It is intended to communicate complex reality in simple terms. If you need to explain the metaphor, it is not one that communicates and persuades effectively. In fact, facilitators should politely stop any workshop participant who starts explaining a metaphor in detail. Again, level three is a foundational worldview of how either the organization or the actor sees reality including time, “the other”, gender, nature, and authority, to name just a few dimensions. In workshop settings, this level may prove easier to access when the slightly philosophical term “worldview” is eschewed for the more business-like expression of “stakeholder perspective”. Once individuals understand the categories, the transformation process becomes easier. Moreover, the purpose of the exercise is not to fill in the boxes of a CLA table but rather to gain insight into the content of the issue debated and the process itself. The facilitator, researcher or professor must ensure that participants are active in what is a learning context. Again, facilitators should focus not on full CLA charts but on insight capable of changing policy or strategy.

► Presentation Order

When groups present back their CLAs, it is better to move from the litany of today downwards to causation, worldview and metaphor. Similarly, go down again from the new litany, or the transformed future, through the levels. Do not move across levels.

► Over-emphasis on the Cognitive Process

If groups are confused, set up the CLA game so that participants can get a taste of CLA. Facilitators can choose a current topic, any issue that people are trying to tackle today. Examples abound ranging from the refugee crisis and disintegration of the EU, to increased populism and even the rise of pure meat and veganism.

► Worldview Blindness

As CLA may be difficult for those who believe they hold the only truth, it is important to explore how everyone holds different perspectives and worldviews; *i.e.*, that difference is foundational to who we are. The Sarkar game helps participants to explore the archetypes of worker, warrior, intellectual and capitalist (Inayatullah, 2017). Also useful, the Polak game (Polak, 1973) divides the room into four groups. Participants stand wherever they feel most comfortable within these four quadrants:

(Quadrant 1) The future is bright, and I have the ability to change the world.

(Quadrant 2) The future is bright, but there is little I can personally do.

(Quadrant 3) The future is bleak, and I have little influence.

(Quadrant 4) The future is bleak, and I can change it.

Case studies help to explain that organizational blindness may arise if one does not understand the metaphors and worldviews of others.

► Facilitator’s Occupational Hazard

Facilitators try to be the expert (“the sage on the stage”) or demonstrate the occupational hazard of over-explaining. It is best to use the wisdom of other participants in case there is someone who is confused, agitated or aggressive. A facilitator needs to demonstrate CLA in the teaching process itself. One cannot simply teach about CLA, one must model it; in other words, show flexibility combined with an understanding of different worldviews and metaphors.

Frequently Asked Questions (FAQs)

Certain questions about CLA routinely crop up. Here are three typical queries.

► What is the difference between the worldview and myth/metaphor level?

Worldviews are deeply held perspectives on the way things are. These perspectives about the nature of reality, often non-negotiable, have developed over time from a foundational event which could be a moment of transcendence or an episode of trauma. They may frequently be expressed in views about creation (evolution or intelligent design), immigration (economic growth versus purity of our culture), time (linear versus cyclical), reality (material versus spiritual or both), governance (democracy versus the ability to provide basic needs). For those in the business world, one perspective often expressed roughly is profit versus social responsibility. Myths and metaphors tend to be more difficult to access than perspectives. In the business example, underneath the worldview of “profits first” lurks “What’s the bottom line?” or “Show me the money”. Alternative groups have adopted the worldview of social responsibility with the tagline of people, planet, purpose, and prosperity or Gaia. Level four consists of metaphors, proverbs, idioms, and even marketing slogans from time to time. Note that religious texts, science fiction authors, artists, storytellers access this level with ease.

For example, in a project for a national ministry of education, participants described four different futures of their educational system using CLA. The worldview for the first future was called Market-led and the foundational metaphor was named Ala-Carte, that is, many choices, or an educational system like a menu. In their second future, the worst-case scenario, the worldview was called Bureaucratic-led with Force-fed as the metaphor. In the third business-as-usual scenario, the metaphor was Spoon-fed; *i.e.*, lecturers and the ministry had to feed students text and curriculum. In the outlier scenario with a worldview dubbed Technology-led, the metaphor was intriguingly baptized AI-fed; *i.e.*, artificial intelligence systems would endeavor to predict student needs, personalize those needs, and collaborate with students to navigate curriculum and job possibilities.

In a project for librarians, the contemporary worldview was called Expert-led and the myth-metaphor was “keepers of the collection”. In their transformed future, the worldview shifted to facilitator and co-creator with the myth-metaphor of “innovators in the gardens”. For the librarians, the gardens (at the systemic level) meant experimentation in 3-D printing, holograms, mobile libraries, and peer-to-peer libraries.

► How is the litany different from the myth-metaphor level?

The litany is the official uncontested future, unchallenged because construed as reality. The litany is often quantitative, *e.g.*, “Cancer rates in Australia continue to rise for females, reaching up to 270 per 100,000”. At the systems (or systemic) level, we explore causes. Is the rise attributable to more effective screening or greater tobacco use by females? Is the cause increased stress because of neo-liberalism; *i.e.*, longer working hours for females thus less time for healthy eating and exercise. At the worldview level, we can draft a map to illustrate how the use of different worldviews leads to different causation models. For example, if neoliberalism is the cause, do we need to change the system to allow for work-life balance? If better screening has led to increased reporting, then the headline is not of significance. If greater tobacco use appears to be the culprit, then create anti-tobacco programs targeting female teenagers.

The myth/metaphor level is the deepest with several possible stories to underpin the above possible causes. These myths or metaphors might be expressed as one of the following

idiomatic phrases: “It’s a man’s world”; “Be cool like blokes [guys]”; “Women can do it all”; “the Octopus worker [multi-tasker]”. In a workshop setting, participants flesh out the metaphors. In a research setting, textual/discourse analysis is employed. Of course, the confusion between litany and myth arises regularly when headlines lead off with a catchy phrase to entice the reader.

► Are there differences in using CLA in scholarly research and workshop settings?

An important distinction should be made here. In workshop settings, we are looking for an *aha* moment, or *Eureka*, in which a participant suddenly understands the new strategy or realizes that a specific worldview and metaphor was the barrier to achieving results. For example, in one national bank, the official strategic goal was to set up a center of knowledge excellence. In the CLA process, when participants exchanged narratives of knowledge, they realized they actually believed that success was defined not by “what you know but who you know”. Consequently, any center of knowledge excellence would become dysfunctional over time. That single insight became important as it showed participants that the core area to transform was the narrative, not just the policy and logistics involved founding a new center.

At a doctoral or academic level, far more rigor is required. In the example above, interviews with the board and other stakeholders would be required along with qualitative methods to sort the data, e.g., sense-making (Kelly, 2008). Thus, the different metaphors need to be mapped with surveys to ascertain which metaphor has had the strongest or greatest resonance. In academic research, data is gleaned from multiple sources such as literature reviews, quantitative data, interviews, and workshops.

In a workshop setting, the goal is information that leads to more robust scenarios and powerful strategies for change. In university settings, the data needs to be solid, tested and retested, as accuracy is critical. In short, relevance would be the word for the real world; rigor, the word for academia.

Case Studies: Five Different Sectors

This section presents an array of case studies. Readers may opt to examine each case or focus on the one most relevant to them.

Cybersecurity: Mapping

CLA was used to map the issue from the worldviews of police, consumers, Internet providers, civil liberty organizations, the government and citizens. The most useful result of the process for the federal crime prevention organization came through understanding the deeper narratives. These made it clear to the analyst why national cybersecurity strategies were failing. Citizens, for example, did not consider the federal strategy urgent and important as they believed in the saying “see no evil, hear no evil”. Privacy advocates challenged the legitimacy of the national strategy as they believed it to be “a fairy tale” employed to gain additional state powers. Police, on the other hand, felt they were continuously falling behind as failure became routine. More than additional spending, what was needed was strategy that acknowledged these different worldviews. What was useful was the mapping of worldviews and narratives as well as their corresponding litanies and systems. Metaphors revealed different perspectives on the issue thus opening up the possibility of dialogue. The same revelation took place in the study below.

Alcohol and Drug Policy: Mapping

In this example, drawn from a futures project on alcohol and drug policy, a map was crafted from four differing worldviews: rights, politics, techno-utopia and security.

As mentioned above, new stories lead to new strategies; however, integration of all four layers is crucial for any significant change to take place.

TABLE 3. ALCOHOL AND DRUG POLICY

Level/Layer	Rights	Politics	Techno-utopia	Security
Litany	Safety data	Number of critical newspaper articles	Hospital admissions data	Crime data
System	Harm minimization	Muddling through	Medical science advancement	Surveillance
Worldview	Rights — the activist	Politics — the Minister	Techno-utopian — the scientist	Security — the police
Myth/Metaphor	What works	Out of sight, out of mind	Magic bullet	Clean sheets

Source: author.

Iran-USA Relations: Mapping

In a CLA carried out by Iranian scientists, participants focused on creating spaces for Iran-USA solutions. The scientists argued that from their side, the narrative of the USA as “the Great Satan” had become so deep that they were unable to see any other story. That was the only worldview, indeed, not a worldview, but an unquestioned truth. And indeed, systemically, given the CIA’s involvement in Iranian politics and American sanctions against Iranians, it appeared logical to continue to believe so. From the American side, the metaphor was “the Axis of Evil”. Given litany statements by Iranian presidents to attack America’s ally, Israel, and to fund Hezbollah, Hamas and other organizations that counter American interests and politics, this metaphor also made sense. The challenge was to search simultaneously for new stories and new systemic interventions. These are baby steps in improving the relationship and the construction of each ‘other’. Although not sufficient, narrative transformation remains crucial for any substantial movement towards improved bilateral relations between these countries.

Higher Education: Deconstruct and Reconstruct

While the above three cases focused on revealing deep narratives held by various stakeholders, this example maps reality in terms of how the future is currently understood. The view is then deconstructed; *i.e.*, unpacked at four levels. The deconstruction may be done from any worldview. Finally, the reconstructed, transformed perspective is given. In Table 4 below, the current reality is that of higher education as perceived from the official point of view. This is then challenged and deconstructed from the student viewpoint. The concluding CLA moves to the transformed future, to the solution space summarized below.

The original story of the “one-man show” and “lecturer knows best” has been counterpoised with the perspective of the students, who find themselves pulled in both directions (a tug of war) between the different actors. The narrative solution, or reconstruction, appears in the new story with the orchestra, where the actors play in harmony for the greater national good.

TABLE 4. HIGHER EDUCATION FUTURES

Level/Layer	Student Worldview	Current Reality	Transformed Future
Litany	Student-centered learning	Traditional teaching and learning	Holistic teaching and learning
System	Learning outcome should not be predetermined Flexible learning	Rigid — one-way learning	Quality issues Assessment (self-assessment and benchmarking) Recognition
Worldview	Democratic teaching and learning	Lecturers dominate teaching and learning	Creative partnerships between independent human beings
Myth/Metaphor	Tug of war between students, the ministry, and lecturers	One-man show and lecturer knows best	The orchestra — in sync and in harmony
<i>Source: author.</i>			

This exercise gave a particular university a new guiding metaphor from which to channel their current strategies for change. Interventions in the system did ensue as a new narrative needs to be supported by systemic changes, if it is to take hold.

Library Futures: Reading from the Current to the Emergent Narrative

In this process, the CLA driver is triggered when the deep metaphor is shifted from the current story to the new story. The other dimensions of CLA are then fleshed out. In this case, for a state library, the old story chronicled a “keeper of the collection”; whereas, the new emergent story told of “innovator in the gardens”. This fresh story generated the participants’ preferred vision. Again, how a narrative drives the future may be seen in the table below.

The participants in this workshop needed to acknowledge the past narrative that was driving their work; *i.e.*, “keeper of the collection”. Moreover, this past narrative had by now become the used future. By doing so, they succeeded in drafting a new story, “innovator in the gardens”, and new strategies. By doing so, they felt this state library was granted a second lease on life. Despite the external changes, the library would continue with a transformed purpose and a

TABLE 5. LIBRARY FUTURES

Level/Layer	Current	Emergent
Litany	Budget based on books loaned	Budget based on people traffic
System	Books organized by categories controlled by librarians budgeted by governments	Workshops, 3-D printing, virtual programs, books and e-books
Worldview	Expert	Co-curation, co-creation
Myth/Metaphor	Keeper of the collection	Innovator in the gardens
<i>Source: author.</i>		

host of new activities. Once again, narrative solutions were then taken as a guide to implementing systemic changes.

In yet another example, a national department of statistics focused on the deep story, moving from being “score keeper” to “trusted expert”. For participants, this translated to not merely collecting statistics. Instead, through big data, they would play a significant role in deciding what needed to be measured, what ought to be the key national indicators.

Given time restrictions, not all organizations complete the full CLA process. In fact, some groups are satisfied with uncovering the new narrative and using that to organize new strategy.

Further Reading

Application Techniques

The pedagogical process of CLA involves moving individuals and organizations from the unexamined, taken-for-granted, single future to alternative futures and then to the preferred future. It is most commonly based on the Six Pillars futures conceptual framework designed to help participants (1) Map, (2) Anticipate, (3) Time, (4) Deepen, (5) Create alternatives to the futures that they envision, and (6) Transform those futures. The pillars (MATDCT) include futures methods and tools such as the futures triangle, emerging issues analysis, the futures wheel, macrohistory and the Sarkar game, CLA, scenario planning, visioning and backcasting. Prior to using these tools to create deeper alternative futures, facilitators begin the process by questioning the current future. A series of seven questions are asked to help participants research their core question. These might include something like what is my life story, my organization or my nation in 2030, to mention just a few examples. Here are the seven questions generally used to shepherd groups to new transformative narratives:

- (1) What is the history of the issue?
- (2) What is your forecast if current trends continue?
- (3) What are the critical assumptions you used in your forecast?
- (4) What are some alternative futures based on different assumptions?
- (5) Out of these alternative futures, which is your preferred one?
- (6) Which strategies can be employed for you to realize the preferred future?
- (7) What is a new narrative or metaphor that would support your preferred future?

The last question is critical within the narrative foresight framework. Participants are asked number seven because without an underlying narrative to support the desired future, it is unlikely that the desired future will be realized because neither the story nor an existing cognitive frame will allow it.

After the question period, participants engage in the above-mentioned Six Pillars process. Of course, the narrative foresight work has already begun in answering question seven, because participants articulate new metaphors to match their preferred visions. That narrative dimension is further reinforced and expressed in the fourth pillar (deepening). Using CLA, participants deconstruct an issue through the four layers — the litany, system, worldview and metaphor — and then reconstruct the alternative futures, either based on the vantage point of a different stakeholder or from the perspective of their preferred future. In sum, the core metaphor is now linked to the cultural or worldview shift, to the systemic changes or to changes in measurement.

Inner Narrative, or CLA of the Self

CLA can be applied to any situation, a collectivity or an individual. At the individual level, individuals can move through the CLA process to discover their new narrative. The litany becomes the words we usually say repeatedly about ourselves. Accordingly, the system is the rules of behaviour that we use to organize identity and expression. The worldview is how we actually map our mind. For example, do we believe the mind is neural pathways, the id, *ego* and *superego* (Freud) or the layers of actualization (Maslow, 1968) or the approach focused on the multiplicity of selves (Stone and Stone, 1993)? At the metaphorical level lies “the story of our life”. Through questions we essentially use CLA to pen a new life story with a new life strategy, if the previous one is seen as no longer functioning or beneficial.

The challenge, as with most foresight work, resides in moving from fragmentation to the preferred future. This is the integrated way forward. By identifying the issues (the internal research question) and the double binds that restrict their solutions, individuals chart alternative maps of their consciousness and head toward a new metaphor, a new life narrative, and consequently an alternative future.

The following questions and subquestions serve to lead individuals to new transformative narratives.

- ▶ What are the things I say over and over about the way the external world is? What are the things I say over and over about how I feel about the world?
- ▶ What is disowned in this process, what do I push away, which selves are seen as less important? What external behaviors in others irritate and upset? Can this provide insight into the disowned selves?
- ▶ What are the origins of the issue? Are there any trigger events that have created this overarching inner worldview about the ways things are or should be?
- ▶ Is there a core metaphor that describes this situation?
- ▶ What might be a new story, a different metaphor that can reduce or transform the double bind?
- ▶ How can this new metaphor be supported by behavior and practice?
- ▶ What new indicators or measurements lead forward from this new behavior?

These questions start at the litany and continue through to the system and the worldview then move to the current metaphor. The new metaphor may then be solidified by a new system and a new litany.

An example that we all can appreciate is an individual pressed for time and stressed by decisions that needed to be made. The metaphorical transformation came from “running out of time” to “making time”. The worldview switched from a linear view of the future to an ecological view providing more pluralism. Systemic changes included rethinking how the day was organized, as well as spending more time on reflection and meditation. Litany changes included not just how much got done (the mind as check-list), but how to be present while doing things (mindfulness). This process is summarized in the table below.

In a similar example, a CEO found herself becoming less efficient largely because the external world had become more complex. The story of her life that had previously worked was a tennis match. However, this was a tennis match played on one surface. Now this executive found that she was becoming confused as the business world appeared to be played on different surfaces

so that she was never sure which surface she would play on next. Her first new systemic shift was to develop new skill sets to play on grass, clay and hard courts; i.e., new languages, scenario planning and emotional intelligence. However, the deeper shift lay in recovering her inner child. That

TABLE 6. CLA OF THE SELF		
Level/Layer	Current	Emergent
Litany	The checklist of activities	Being present while doing
System	Daily chores	Meditation and reflection
Worldview	Linear	Pluralistic-ecological
Myth/Metaphor	Running out of time	Making time
Source: author.		

meant playing for the fun of it while envisioning that in the long run, metaphorically, she wished to become a coach. Playing for fun required tapping into her child self, repressed since becoming serious about the competitive nature of business and life in general. The first phase was enhancing her ability to deal with new types of competition. Phase two involved moving outside of competition to “the flow” and to fun.

In another case a woman used CLA to rethink matrimony. While pondering if she should marry, this lady realized that her two core stories were in conflict. Wanting both stories, she found herself in a double bind of freedom and autonomy (a bird in flight) with security and safety (bird in a cage). The solution? Get married but reconstruct her story (bird on the ledge). In this version, she would find ways to keep some autonomy while married. At the litany and systemic level, this could mean keeping her maiden name in negotiations, separate accounts, to give simple examples. The CLA process relieved her from having one future in the binary worldview inherited from her parents.

Participants frequently report how such insights at the individual level help them restore their own agency and enable them to move away from cynicism and helplessness toward renewal. The CLA of the self also effectively ensures that the practitioner is engaged in deep learning and self-discovery. This implies learning about learning, too.

Conclusion

CLA is both a theory of knowledge and a practice for enhanced policy making and strategy. As a practice, the CLA game explores how the different levels of reality construe a specific problem. Robust strategies and new litanies can be invented using this game.

As a research or analytic method, CLA may be used in a variety of ways. First, it assists in mapping the differentiated worldviews and core narratives. Second, it may help to articulate a transformed future in which the future is contemplated from multiple realities and a new future created. Third, the CLA process can propel an organization or collectivity from a current future to an emergent future. Fourth, CLA may serve to explore an individual’s current life story and move forward to a new narrative and a new guiding metaphor.

CLA seeks not to question and deconstruct the future only but, as the case studies above suggest, to transform the future, open the present, and reinterpret the past.

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