Future-Centric Mindset Shifts: Strategic Foresight and Systems Thinking to Improve Micro- to Macro-Level Outcomes in the 2020s and 2030s

Aria Jones, DSL
Ariel Organizational Development Solutions (Ariel O.D.S.)
Roundtable: Foresight

Abstract

This paper explores the topic of strategic foresight and how its application can enable crucial future-centric mindset shifts across micro- and macro-levels. Strategic foresight is defined as the ability to anticipate potential futures and their implications through techniques like horizon scanning and scenario planning. Strategic foresight's history and growing importance, emphasizing systems thinking, is discussed. Individual, team, organizational, and macro-level mindset shifts required to thrive in today's volatile, uncertain, complex, and ambiguous (VUCA) environments are observed. At the personal level, shifting from reactive to proactive perspectives and linear to dynamic thinking is covered. Moving from siloed actions to collaborative solutions is addressed for teams and departments. Organizations must transition from short-term reactivity to long-term proactivity, from knowing to learning. Macro-level perspectives require considering interconnected challenges rather than single issues. The interrelatedness and interdependencies from micro- to macro-levels are illuminated. Two key strategic foresight tools—the futures wheel and causal loop diagrams (CLDs)—are presented at a high level as easy-to-use methods to enact strategic foresight. The futures wheel allows branching out implications of ideas, while CLDs illustrate feedback relationships. The paper concludes with actionable takeaways centered around practicing systems thinking, thinking the unthinkable, anticipating disruptions using strategic foresight methods and tools, and sharing strategic foresight broadly. Overall, the research argues that strategic foresight cultivates crucial future-centric mindsets and enhances future readiness, which can significantly improve outcomes when applied across micro- to macro-levels, especially in today's VUCA world.

Keywords: strategic foresight, systems thinking, future-centric mindset, mindset shifts, futures thinking, disruption management, strategy, learning, adaptation

The unprecedented times faced globally in recent years have highlighted the need for future-centered mindset shifts to navigate contemporary volatile, uncertain, complex, and ambiguous (VUCA) environments and maximize opportunities arising from extraordinary disruptions (World Economic Forum, 2023a). With the convergence of innovations like artificial intelligence, robotics, biotechnology, and the internet of things set to further transform numerous industries and domains of life during the 2020s and 2030s, developing strategic foresight and systems thinking skills (i.e., future-centric mindsets) has become imperative to ensure future readiness at the micro- and macro-levels.

Strategic foresight uses prescribed methods and tools (e.g., horizon scanning and scenario planning) to anticipate potential futures and their implications (Rohrbeck & Schwarz, 2013). By developing multiple plausible scenarios of how sociotechnical, economic, environmental, and political trends may evolve individually and how they interact in the medium to long term, individuals, organizations, and policymakers can identify strategic options today for transformational change tomorrow. Such proactive approaches help mitigate risks and disruption while harnessing opportunities through intentional, future-oriented decision-making and planning.

Complementing strategic foresight, systems thinking provides a holistic lens to understand how the interrelatedness, interdependence, and interactions between different elements within and across systems produce outcomes incrementally (Arnold & Wade, 2015). Whether analyzing an organization, community, nation, or the globalized world, systems thinking facilitates recognizing interdependencies, feedback loops, nonlinear changes, and unintended consequences of interventions. This helps design high-impact, sustainable solutions by accounting for complexity across technical, human, and social dimensions.

By cultivating strategic foresight and systems thinking skills, individuals, teams or departments, and entire institutions can develop future-centric mindsets essential for thriving in VUCA environments. This involves shifting perspectives from short-term reactivity to long-term proactivity, from single issues to interconnected challenges, from linear thinking to dynamic complexity, and from siloed actions to collaborative solutions. Such transformational changes in approaches and mindsets can significantly improve outcomes across micro to macro levels through the 2020s, 2030s, and beyond as the convergence of innovations accelerates change. Strategic foresight, combined with Systems Thinking, thus provides powerful frameworks for individuals, organizations, and societies to navigate unprecedented times and ensure future readiness successfully.

Strategic Foresight: Definition, History and Application

Strategic foresight and its relative tools and practices help us to see where we are (i.e., our current state) in comparison to where we want to be (i.e., our desired state) and illuminate the pathway and possible pitfalls between one state and the next, better equipping us to traverse the path successfully. Suppose we recognize and understand the levels at which people are currently operating—personally and professionally—and evaluate the expanse between the current and desired states. In this situation, transformational pathways are observable within the systems in which we live and work. Insights from such observations enable the creation of strategies most conducive to transformational change in any context. Developing and implementing such transformational change strategies induces *infectious* (so to speak) transformational change as it spreads from the individual to the individual's constituents, peers, and organizations. Herein lies the value of understanding and practicing strategic foresight in all aspects of life.

Definition

What, one might ask, *is* strategic foresight? Strategic foresight is a fast-growing academic practice yet a well-established field of practice (Jones, 2022, September 9-10). Strategic foresight, as described by the Global Center for Public Service Excellence (2015), is the proficiency to envisage possible or probable future occurrences using established methods that subsidize wide-ranging, progressive decision-making (see also Jones, 2022, September 9-10). The essence of strategic foresight comprises strategy founded upon purposeful anticipation. This section breaks down the term and concept of strategic foresight.

Strategy is defined as "an adaptation or complex of adaptations…that serves an important function in achieving evolutionary success" (Merriam-Webster, 2023). Accordingly, *strategic* involves anything "of great importance within an integrated whole or to a planned effect" (Merriam-Webster, 2023). *Foresight* is the "act or…power of foreseeing" or the "act of looking forward" (Merriam-Webster, 2023). While *foresight* involves anticipation processes designed to expand one's discernment of available options, and *strategy* involves achieving evolutionary success, *strategic foresight* enriches effectiveness by helping with the identification of plausible opportunities and threats; it supports appropriate strategy development to address them (Global Center for Public Service Excellence, 2015; Jones, 2022, September 9-10).

Strategic foresight is an organizational, social, and personal practice that allows those who employ it to create functional and operational views of alternative futures and possibilities, become better prepared for potential threats, and become more apt to capitalize on hidden opportunities and mine the external environment for trends and issues (TFSX, 2015). Through the practice of strategic foresight, practitioners are

empowered to create maps of emerging landscapes, test existing strategies, develop breakthrough innovations, and produce transformative change (Jones, 2022, September 9-10).

Strategic foresight is an atypical planning approach based on conceptual planning from the future back to the present rather than from the present to the future (Marsh, et al., 2002). Strategic foresight is founded upon a framework of diverse ways of thinking that enable discovering and articulating a preferred direction (Jones, 2022, September 9-10). Such diverse thinking can elucidate primary drivers of change and their significance and effects while clarifying critical issues and strategic responses (Jones, 2022, September 9-10; Marsh, et al., 2002). Strategic foresight is most effective when used as a philosophy that runs in the background of an organization or any aspect of life—it is the operating system enabling all other processes (TFSX, 2015).

History

Strategic foresight originated in the 1940s, spawning from management science (Jones, 2022, September 9-10). The U.S. military's research units and think tanks first employed strategic foresight to develop innovative strategies and novel technologies (Global Center for Public Service Excellence, 2015). One of the most prominent historical examples of the early usage of strategic foresight is Herman Kahn's 1950s work at the RAND Corporation and his 1960s work at Royal Dutch Shell (Jones, 2022, September 9-10).

The late Herman Kahn, an American physicist and "the most celebrated and controversial nuclear strategist of his day, later to be also known as a futurist, political scientist, geo-strategist" (Aligica, 2022), is commonly referred to as "the father of modern Scenario Planning" (Carvalho, 2021) as he used scenarios as a "future-know" way of thinking at RAND (Carvalho, 2021). Kahn used scenarios to assess military strategies to engage the Soviet Union during the Cold War (Crews, et al., n.d.). Essentially, Kahn's implementation of strategic foresight involved combining deep analysis and imagination as primary sources to envision probable and alternative futures (Carvalho, 2021). Kahn asserted imagination as the foundation of exploration of the future and posited the importance of "thinking the unthinkable" to avoid blind-sightedness and challenge existing tenets and mental maps (Carvalho, 2021).

Application

The effective practice of strategic foresight comprises the non-negotiable necessity of maintaining systemic awareness and a mindset of extreme creative thinking to produce, evaluate, and prepare for a range of unthinkable scenarios (Jones, 2022, September 9-10; Marsh, et al., 2002). The integration of strategic foresight into personal, team, departmental, organizational, and strategy development necessitates and facilitates

innovative thinking, learning, engaging, and acting and yields increasingly coherent, insightful viewpoints of possible futures unobstructed by how things look today (Jones, 2022, September 9-10; Marsh, et al., 2002).

Following the requisite systemic awareness mentioned earlier, the effectual practice of strategic foresight in one's personal, professional, or other aspects of life involves an acute familiarity and habitual usage of systems thinking. At this point, one might ask, what exactly is systems thinking? At its core, systems thinking represents the persistent, active mindfulness that everything exists within one or more systems and that any changes occurring within and among interrelated systems or parts of systems will affect one or more other systems or parts of systems, thus causing additional changes (Jones, 2022, September 9-10).

Systems thinking is a non-linear language that enables communication surrounding the most vexing of problems amid an interwoven set of complex, dynamic, and circular (i.e., reciprocally causative), yet interconnected and interdependent relationships (V. Anderson & Johnson, 1997). Additionally, systems dynamics affords practitioners innovative ways to think and communicate about how we see the world, to collaborate more productively toward understanding and resolving complex problems, and to invoke constantly adaptive, dynamic thought processes in response to ever-changing environments (V. Anderson & Johnson, 1997). For more information on systems thinking, look up Peter Senge, a thought leader expounding on the topic starting in the 1980s.

Fundamentally, strategic foresight is about shifting one's mindset toward extreme creativity to envisage probable and alternative futures, maintaining persistent, active mindfulness that everything is connected (i.e., systems thinking). Most people likely are unaware that they are applying strategic foresight in some way already. Think about how you process seemingly trivial decisions in daily life. For instance, imagine setting a goal as simple as waking up early tomorrow to get a head start on your day. When deciding to set that goal of waking up early tomorrow, you may have thought about the consequences surrounding achieving that goal and not achieving it. You may have considered the chain—or the matrix—of events that could result from enacting that decision. If so, *that* is strategic foresight and systems thinking!

Similarly, teams, departments, organizations, governments, etc., employ strategic foresight when designing and implementing tactical and strategic objectives. Devoid of the constant practice of strategic foresight, the future is unnecessarily less manageable. Be mindful that, as Canton (2015) suggested, if you are not managing the future, the future is managing you!

If you're not managing the future, the future is managing you.

(Canton, 2015)

A subsequent section provides examples and high-level summaries of some of the most used strategic foresight methods and tools. However, let us first delve deeper into some examples of the meaning behind the phrase *future-centric mindset shifts*.

Future-Centric Mindset Shifts: Micro to Macro

The importance of mindset shifts has been emphasized repeatedly in efforts to drive home the point that success and failure in any context are hinged upon the thought processes of individuals and groups and the consequent actions or inactions that result from their respective thought processes. The incessant practice of strategic foresight will inevitably yield increasingly optimal outcomes compared to not doing so. This is true for individuals, teams (and departmental units), and organizations, as well as at the macro level. However, it is important to note that individuals are at the core of everything. "Employing Strategic Foresight mindsets and practices removes the passivity of allowing the future to happen <u>to</u> us rather than <u>for</u> us" (Jones, 2022, September 9-10). With this in mind, existing and aspiring leaders are behooved to employ strategic foresight and systems thinking to improve individual (i.e., of self and others), organizational, and macro-level outcomes. "We can improve outcomes…and shorten the timespans involved in reaching development and performance goals by integrating Strategic Foresight practices, tools, and mindsets into [our] systems, programs, and processes" (Jones, 2022, September 9-10). Figure 1, an original graphic, represents the realization that the mindsets and consequent behaviors of individuals affect that of their teams, their departments, and their organizations, ultimately affecting societies and the world.

Critical future-centric mindset shifts, which serve as a pathway to the effective practice of strategic foresight and systems thinking, can be achieved by individuals, teams, departments, organizations, and at macro-levels through the deliberate and purposeful development of a few simple habits, most of which are effective in all contexts. Achieving these vital mindset shifts is easier than one might imagine. Let us look at some high-level examples of practices that can be enacted at the individual, team, departmental, organizational, and macro levels.

Figure 1.
Representation of the Interrelatedness of Mindsets and Consequent Behaviors
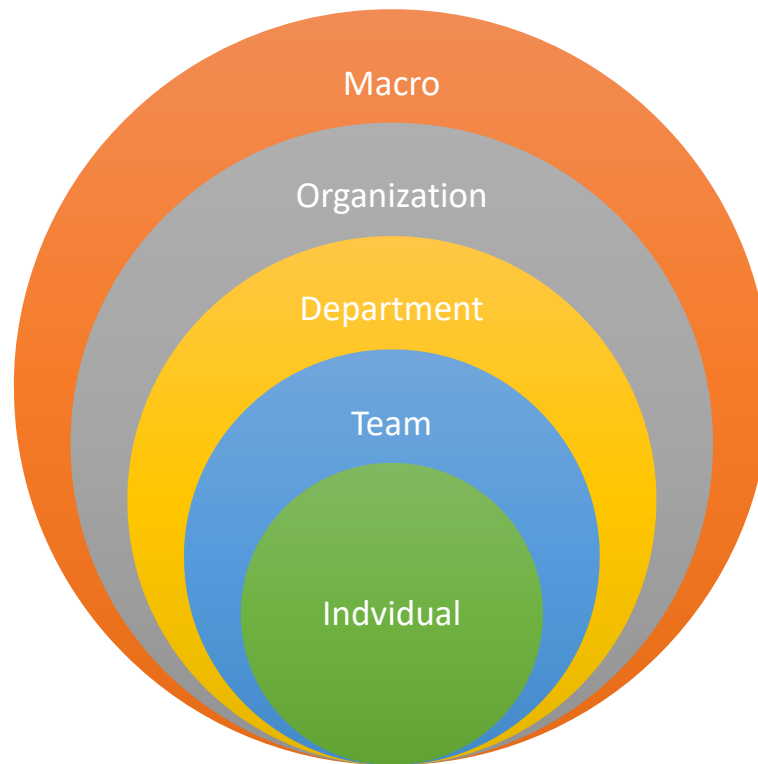
Individual Mindset Shifts

For ages, a sort of fundamental tension has persisted between humankind and "our inability to know and control" (i.e., uncertainty) "and our capacity to anticipate, imagine, and create the future" (i.e., the practice of strategic foresight; Wilkinson, 2017). This tension is a critical factor "in the evolutionary success" of individuals and humankind as a whole (Wilkinson, 2017). To address and benefit from this tension, future-centric mindset shifts are necessary.

Individuals must embrace lifelong learning, seeking to learn from people, cultures, and environments unlike their own. Additionally, developing a systemic mindfulness; seeking the awareness and some level of understanding that everything is connected, interrelated, and often interdependent; and realizing that everything affects and is affected by one or more other things, that is systems thinking (V. Anderson & Johnson, 1997). Doing this enriches the individual, elevates their level of consciousness, and forms the individual's timely and appropriate adaptability in response to, or in preparation for, new developments in an ever-changing world. These feed into the practice of strategic foresight in that learning from others and from various environments opens our minds. As such, the practice of strategic foresight enhances our ability to think creatively and to envision and invent our desired futures. We are our

own leaders. We are the designers and creators of our own futures. Adopting a future-centric mindset and enacting strategic foresight practices equip us to design and create the best possible futures.

Team and Departmental Mindset Shifts

In addition to the individual adaptations involved with developing a future-centric mindset to enhance the self-leadership process, leaders of others—in this context, leaders of teams and departments—are behooved to take things a step further. Leaders must ensure that they and their constituents recognize that strategic foresight is not a mystical way to predict the future. Rather, the practice of strategic foresight "is a learning process that [affords practitioners and decision-makers innovative] and refreshing perspectives" on existing circumstances (e.g., VUCA environments) and is a means by which to engage "with uncertainty as a friend rather than as a foe" (Wilkinson, 2017).

For many leaders, uncertainty and the apparent lack of control may bring some apprehension when it comes to setting and achieving strategic objectives, especially in this era of rapid change. Hence, developing (for self and others) a future-centric mindset that embraces complexity and uncertainty and lays a strong foundation for strategic foresight practice is vital. Likewise, team and department leads must exemplify and foster systemic mindfulness and cross-functional collaboration to create environments conducive to continual learning (which builds collective intelligence.

Another future-centric mindset shift necessary for leaders of teams and departments is recognizing the importance of experimentation and learning. Leaders must shift their mindsets from *knowing* to continuously *learning* (Wilkinson, 2017). Cross-functional collaboration and building collective intelligence are two simple examples of how to enact systems thinking and maintain a systemic awareness during strategic foresight processes.

Cumulatively, these future-centric mindset shifts can facilitate the development of progressively higher orders of consciousness (i.e., heightened stages or structures of mind), which contribute significantly to leader effectiveness (Jones, 2022, September 9-10). Similarly, consciousness and competence rise in tandem, mastery emerges with maturity, and extraordinary leadership arises with higher-order consciousness (J. Anderson & Adams, 2016).

Organizational Mindset Shifts

Obviously, organizations (i.e., business systems) are comprised of departments and teams, which are comprised of individuals. The purpose of stating the obvious is to point out that all the mindset shifts necessary at the individual, team, and departmental levels are applicable and compulsory at the organizational level. Organization leaders

can use the same future-centric mindset shifts and cultivate a strategic foresight culture and a future-centric mindset at the organizational level. Continuous learning, adaptability, systemic mindfulness, and embracing uncertainty and complexity have been emphasized at all levels thus far. Organizations must perpetuate an environment of constant learning, remain ready and willing to adapt to new developments and remain mindful of the systemic nature of organizational effectiveness or the lack thereof. Moreover, interdepartmental collaboration contributes to the collective intelligence mentioned earlier. The enablement of holacratic and emergent strategies based on a combination of localized and collective intelligence can afford organizations notable benefits and advantages.

Organizations of all sizes are players in the global system. In this era of rapid change, it is important for organization leaders to enact these and other future-centric mindset shifts to initiate or enhance their strategic foresight practice. While it is impossible to decelerate the speed of change in many instances, enacting these mindset shifts and practicing strategic foresight accelerate practitioners' ability to learn their way into the future by creating, envisioning, and thinking through multiple conceivable alternative stories about the future and strategizing accordingly (Wilkinson, 2017).

Macro-Level Mindset Shifts

Just as organizations are comprised of departments and teams, which are comprised of individuals, all of these comprise, affect, and are affected by our global system. At the macro-level, all the future-centric mindset shifts mentioned earlier are applicable and necessary for the effective practice of strategic foresight and to reap the related benefits of doing so. However, at the macro-level, complexity is drastically more prevalent with the introduction of many more systemic considerations at play. The acronym STEEPLE provides an easy way to remember the key macro-considerations. STEEPLE involves sociocultural, technological, economic, environmental, political, and ethical considerations. Some people may be more familiar with STEEP or PESTLE. Strategic foresight practitioners often use STEEPLE as a guideline while contributing to the development of strategic objectives and plans.

Figure 2, an original graphic, illustrates the STEEPLE components and their interrelatedness. Every component affects and is affected by all other components. This is a good way to envision how systems thinking works. When practicing strategic foresight, it is important to consider that one existing factor or change anywhere in the system either balances or reinforces one or more other factors. Later, we look deeper into this type of reciprocal causality with a strategic foresight tool called a causal loop diagram (CLD).

Figure 2.
STEEPLE: Macro-level Considerations
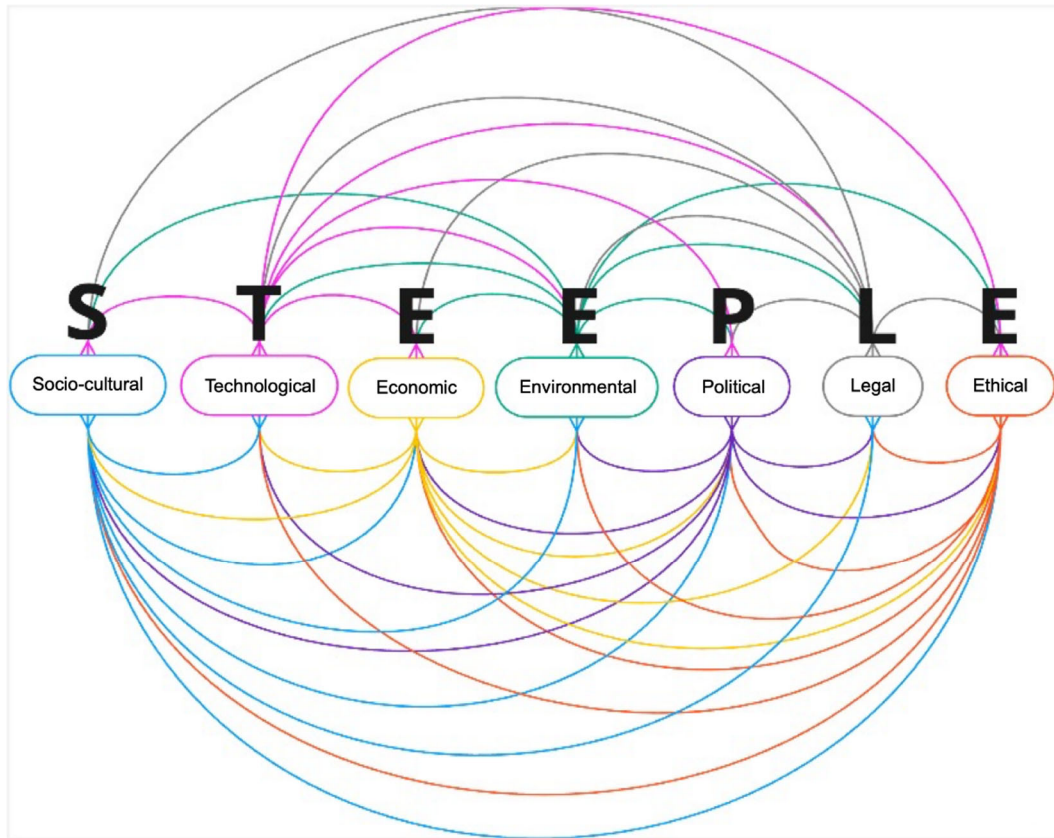
The Fourth Industrial Revolution delivered myriad disruptions in all areas of STEEPLE that will continue to unfold throughout the 21st century, many of which are fueled by the convergence of technological innovations merging the physical, digital, and biological worlds (World Economic Forum, 2023b). Future-centric mindset shifts and the effective practice of strategic foresight equip leaders to navigate the futures of all the STEEPLE areas before they happen through creative, systemic thinking, storytelling, and appropriate adaptations. While there are no facts about the future (because it has not yet happened)—as facts, by definition, are of the past—strategic foresight allows us to experience plausible futures (Wilkinson, 2017) and create our desired futures. In addition to the technological advancements characterizing the Fourth Industrial
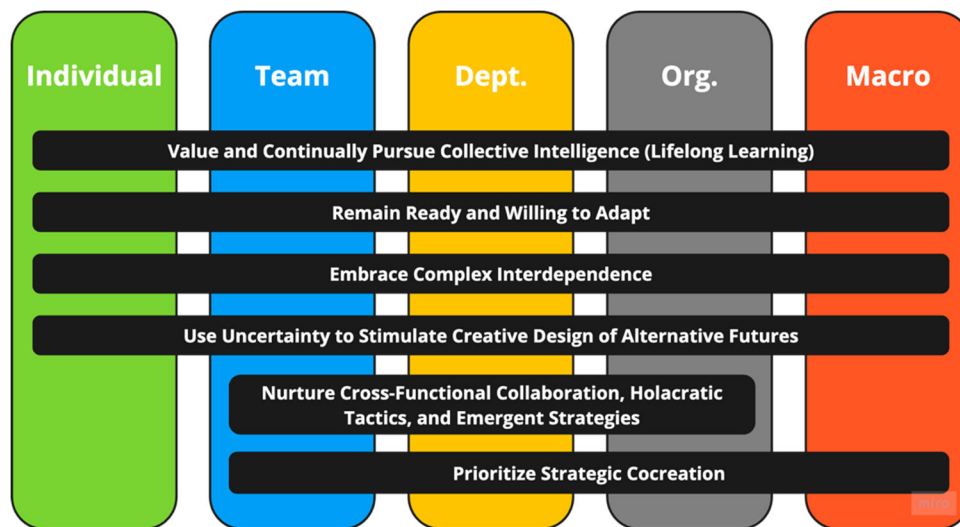

There is no such thing as a fact about the future.

Facts are elements of the past.

Revolution—for example, artificial intelligence, robotics, automation, job transformation, biotechnology, genetics, clean energy, and transportation—other key megatrends, including demographic shifts, urbanization, climate change, resource constraints, and more will touch every STEEPLE element and reshape the next 20 years. Espousing future-centric mindsets, maintaining systemic awareness, and practicing strategic foresight using established methods and tools afford leaders innumerable advantages.

It was mentioned that the mindsets and consequent behaviors of individuals affect that of their teams, their departments, and their organizations, ultimately affecting societies and the world. Some commonalities are observable after considering the essential future-centric mindset shifts at each level. Figure 3, an original graphic expounding upon Figure 1, illustrates the widespread applicability of the suggested future-centric mindset shifts spanning the individual, team, departmental, organizational, and macro levels. The next section introduces two strategic foresight tools that can be game-changers for existing and aspiring leaders at all levels.

Figure 3.
Future-centric Mindset Shifts to Enact Strategic Foresight

Individual	Team	Dept.	Org.	Macro
Value and Continually Pursue Collective Intelligence (Lifelong Learning)				
Remain Ready and Willing to Adapt				
Embrace Complex Interdependence				
Use Uncertainty to Stimulate Creative Design of Alternative Futures				
Nurture Cross-Functional Collaboration, Holacratic Tactics, and Emergent Strategies				
Prioritize Strategic Cocreation				

Tools to Enact Strategic Foresight

Those who want to begin practicing strategic foresight or novice practitioners who want to turn it up a notch have several methods and tools available to facilitate their unique processes. Major methods and tools include horizon scanning, trend analysis, monitoring and projection, brainstorming and idea mapping, visioning, the Delphi method, modeling, serious games, scenario planning, the futures wheel, backcasting, causal layered analysis, and CLDs.

- *Horizon scanning* involves looking for early warning signs or changes in the environment.

- *Trend analysis, monitoring, and projection* involve examining trends; identifying nature, causes, speed, and impact; reporting changes to decision-makers; and visualizing numerical data.

- *Brainstorming* and idea mapping involve collaborating to generate new ideas and build upon existing ones without criticism.

- *Visioning* involves envisioning desirable futures and identifying ways to move toward them.

- *The Delphi method*, sometimes called polling, involves consulting field experts to gather their insights through a series of predetermined questions separately and anonymously.

- *Modeling* involves the use of substitutes in place of things that are more difficult or impossible to experiment with otherwise.

- *Serious games* involve simulations of real-world situations using role-play or virtual gaming.

- *Scenario planning* is a process in which participants describe the future development of a trend, strategy, or wild card event in a story or outline form.

- *The futures wheel* is a tool used to illustrate the direct and indirect consequences of a particular change.

- *Backcasting* is a method that involves charting a path from the desired future back to the present.

- *Causal layered analysis* is a means to examine what is happening beneath the surface.

- *CLDs* illustrate the interrelatedness of several systemic factors in their balancing or reinforcing effects on one or more other factors.

Figure 4, an original infographic, summarizes these methods and tools as a quick reference. In this section, we scratch the surface of only two: the futures wheel and CLD.

Figure 4.

A sampling of Strategic Foresight methods and tools

Horizon Scanning
- Look for early warning signs or change in the environment

Trend Analysis, Monitoring & Projection
- Examine trends; identify nature, causes, speed, and impact
- Report changes to decision makers
- Visualize numerical data

Brainstorming & Idea Mapping
- Collaborate to generate new ideas and build upon existing ideas without criticism

Visioning
- Envision desirable futures
- identify ways to move toward them

Delphi Method (or Polling)
- Field experts provide insights by answering predetermined questions separately and anonymously

Modeling
- Use substitutes in place of things that are more difficult or impossible to experiment with

Serious Games
- Simulate real-world situations using role play or virtual gaming

Scenario Planning
- Describe the future development of a trend, strategy, or wildcard event in story or outline form

Futures Wheel
- Illustrate direct and indirect consequences of a particular change

Backcasting
- Chart a path from the desired future back to the present

Causal Layered Analyses
- Look at what's going on beneath the surface

Causal Loop Diagrams
- Illustrate the interrelatedness of several systemic factors and their balancing or reinforcing effects on one or more other factors

The Futures Wheel

The futures wheel, depicted in Figure 5, can be used to help illuminate consequences beyond the first-order consequences of a change and can help unveil causality by mapping the ripple effects caused by the initial change (Swanson, 2020). Armed with this information, futures wheel users can examine those implications, gain clarity on how to best navigate the change, and asses additional potential changes that otherwise might not have been considered (Swanson, 2020). The futures wheel, essentially an idea generation tool usable by individuals or groups for planning and decision-making, was created in the early 1970s to help envisage the implications—direct and indirect—of a specific trend, event, or decision (Swanson, 2020). The main objective of using the futures wheel, as a part of one's newfound future-centric mindset and effective strategic foresight practice, is to think beyond the direct, easily recognizable consequences of a change (Swanson, 2020)

Figure 4.
The Futures Wheel. (Swanson, 2020).
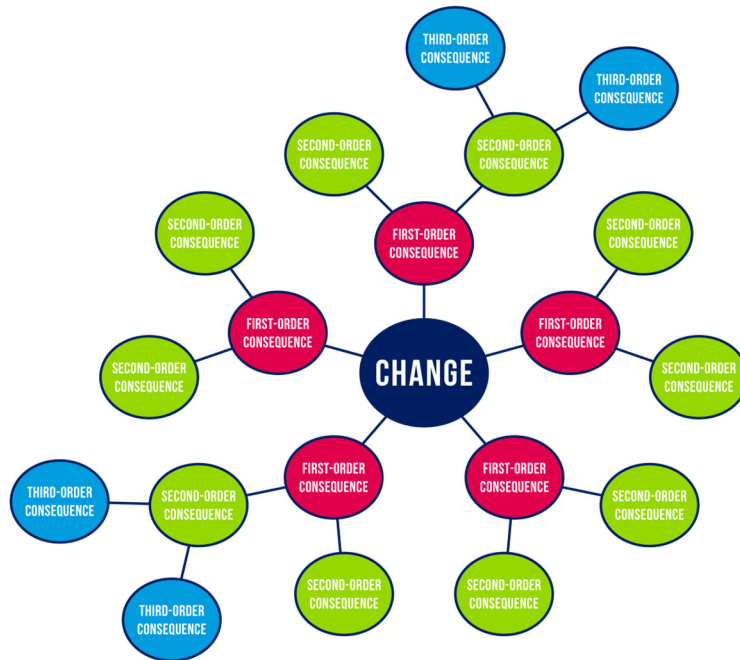
Jason Swanson (2020), Senior Director of Strategic Foresight at KnowledgeWorks, summarized six steps to effectively employing the futures wheel:

1. Gather your materials and choose a scribe.

2. Identify the change.

3. Identify direct, first-order consequences.

4. Identify indirect, second-order consequences and beyond.

5. Analyze implications.

6. Prioritize and plan.

Causal Loop Diagrams

CLDs "are graphical renditions of systemic structures that can help users explore dynamic interrelationships among variables that previously may not have been considered" (Jones, 2021, September 9-10). "CLDs are simple maps of the interconnections in a closed-loop system of cause and effect relationships; they create a space for hypothesizing and testing problem resolutions without risk" (Jones, 2021, March 8). CLDs reveal the exchanges and latent impediments ensuing within and

amongst disparate systems and subsystems that shape changes or events and produce systemic behaviors (V. Anderson & Johnson, 1997). CLDs typically involve "one or more feedback loops, variable cause and effect relationships, and delays" (Jones, 2021, March 8).

Some believe that CLDs originated in 1918 from Sewall Wright, an American geneticist renowned for his work on evolutionary theory and path analysis (Harvard Square Library, n.d.). Wright used words and arrows to represent cause-and-effect graph models (Jones, 2022, September 9-10). Lay persons can use CLDs to take a systems approach to learn and understand the scale and scope of multifaceted issues without being trained extensively in a quantitative discipline (Jones, 2022, September 9-10).
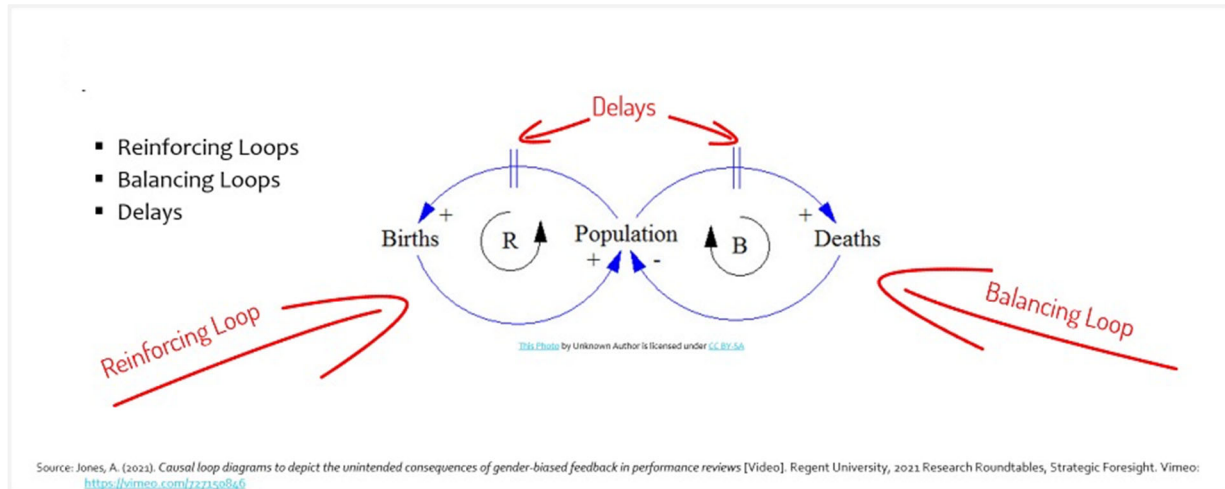
CLEExchange (2016) created a short video, *Introduction to Connection Circles*, that well summarizes the five steps involved with using CLDs, emphasizing the importance of the parts of a system rather than the parts themselves, how they connect with one another, and their cause-and-effect relationships:

1. Read the story or understand the situation (or current state).

2. Highlight key parts that can change over time, writing up to 10 of them around the outside of the circle.

3. Draw arrows to illustrate cause-and-effect relationships.

4. Add more arrows until as many relationships as possible have been represented.

5. Use the connection circles as a basis for conversation as you seek to discover loops within the circle among the arrows. For example, one thing causes another, which causes another, which causes another.

Using CLD, we can visualize what is (i.e., the current state), evaluate relationships between structure and behavior, and decide which structural or behavioral changes to implement first, based on the highest value—that is, the desired future state (Schaffernicht, 2010). Figure 6, an original graphic, is an example of a simple CLD: "[…] births and population exist within a reinforcing loop, deaths and population exist within a balancing loop […]. The population increases; […] births [increase] (i.e., increased human reproduction reinforces population growth); […] population

decreases as…deaths [increase] (i.e., increased mortality rates balance out population growth; Jones, 2021, March 8).

Figure 5.
Causal Loop Diagram Example: Population, Births, and Deaths

Source: Jones, A. (2021). *Causal loop diagrams to depict the unintended consequences of gender-biased feedback in performance reviews* [Video]. Regent University, 2021 Research Roundtables, Strategic Foresight. Vimeo: https://vimeo.com/727150846

Conclusion

In conclusion, Strategic Foresight and Systems Thinking are essential skills that enable individuals, teams, organizations, and policymakers to anticipate potential futures, understand their implications, and develop proactive strategies for transformational change. By cultivating future-centric mindsets, individuals and institutions can navigate VUCA environments successfully and harness opportunities while mitigating risks and disruption. The Futures Wheel and Causal Loop Diagrams are two easy-to-use tools that individuals and organizations can utilize to enact Strategic Foresight. Sharing Strategic Foresight broadly and practicing Systems Thinking are crucial takeaways for individuals, teams, and organizations to thrive in unprecedented times and ensure future readiness. Finally, we must remember that Strategic Foresight and Systems Thinking are not one-time practices but an ongoing process of learning, adapting, and transforming to stay ahead of the curve in the dynamic and complex world of the 2020s, 2030s, and beyond.

Call to Action

As we navigate an uncertain future full of disruptions and challenges, it is crucial to develop Strategic Foresight and Systems Thinking skills. Whether you are an individual, team, organization, or policymaker, cultivating future-centric mindsets and

utilizing Strategic Foresight tools like the Futures Wheel and Causal Loop Diagrams can help you anticipate potential futures and develop proactive strategies for transformational change. Therefore, it is time to take action and invest in Strategic Foresight and Systems Thinking training, practice, and sharing widely. By doing so, we can navigate VUCA environments successfully and create a better future for ourselves and future generations. Let us embrace the power of Strategic Foresight and Systems Thinking and work together to create a future we can all be proud of.

About the Author

Dr. Aria Jones is an award-winning technologist and practicing futurist. She is the founder and principal solutionist at Ariel Organizational Development Solutions (Ariel O.D.S.), a management consulting firm providing organizational development, leadership development, and operational improvement solutions.

Dr. Jones holds a Professional Doctorate in Strategic Leadership and Foresight, a Master of Science in Information Systems, and a Bachelor of Science in Business Management.

For two decades, Dr. Jones led software development projects and teams within multinational and global firms in the healthcare, financial services, and tech industries. She currently serves as an adjunct professor in the Master of Science in Information Systems program at Saint Louis University.

Dr. Jones holds in high regard the understanding and personal and professional application of strategic foresight and systems thinking. She has a heart of service and a passion for learning and sharing knowledge to contribute to the continuous improvement of people, processes, and systems. She seeks to catalyze transformational change using strategic foresight.

Connect on LinkedIn: http://www.linkedin.com/in/doctorariajones

Correspondence concerning this article should be addressed to: 16105 Swingley Ridge Rd., #4005, Chesterfield, MO 63017. Email Address: AskAria@ArielODS.com

References

Aligica, P. D. (2022). Herman Kahn. Retrieved from
https://www.hudson.org/experts/174-herman-kahn

Anderson, R. J., & Adams, W. A. (2016). *Mastering leadership: An integrated framework for breakthrough performance and extraordinary business results*. John Wiley & Sons, Inc.

Anderson, V., & Johnson, L. (1997). *Systems thinking basics: From concepts to causal loops.* Pegasus Comm., Inc.

Arnold, R. D., & Wade, J. P. (2015). A definition of systems thinking: A systems approach. *Procedia Computer Science, 44*, 669-678.

Canton, J. (2015). *Future smart: Managing the game-changing trends that will transform your world*. Da Capo Press.

Carvalho, P. (2021, August 9). *Scenarios: Learning and acting from the future Part 1: A blueprint of the history of scenarios*. Retrieved from https://www.ifforesight.com/post/scenarios-learning-and-acting-from-the-future-part-1-a-blueprint-of-the-history-of-scenarios

CLEExchange. (2016). *Introduction to connection circles* [Video]. Retrieved September 2023, from https://www.youtube.com/watch?v=hUb7SmgDE1Q

Crews, C., Farrington, T., & Schlehuber, L. (n.d.). *Understanding strategic foresight: The history of scenario planning*. Retrieved September 2023, from https://kalypso.com/viewpoints/entry/understanding-strategic-foresight-the-history-of-scenario-planning

Global Center for Public Service Excellence. (2015, November 8). *Foresight as a strategic long-term planning tool for developing countries.* Retrieved from https://www.undp.org/sites/g/files/zskgke326/files/publications/GCPSE%20Foresight_Summary.pdf

Harvard Square Library. (n.d.). *Wright, Sewall (1889-1988)*. Retrieved September 2023, from https://www.harvardsquarelibrary.org/biographies/sewall-wright/

Jones, A. (2021, September 9-10). *Causal loop diagrams to depict the unintended consequences of gender-biased feedback in performance reviews* [Video]. Retrieved September 2023, from https://vimeo.com/727150846

Jones, A. (2021, March 8). *Systems dynamics: The importance of avoiding gender bias in performance reviews*. Retrieved September 2023, from

https://www.wwt.com/blog/systems-dynamics-the-importance-of-avoiding-gender-bias-in-performance-reviews

Jones, A. (2022, March). *Future-centric leadership development: Strategic foresight & systems thinking to improve individual and organizational outcomes*. Regent University, School of Business & Leadership.

Jones, A. (2022, September 9-10). Future-centric strategy development: Strategic foresight & systems thinking to transform critical infrastructure sectors [Paper presentation]. *Annual Research Roundtables*. Regent University.

Marsh, N., McAllum, M., & Purcell, D. (2002). *Strategic foresight: The power of standing in the future.* Crown Content.

Merriam-Webster. (2023, September 10). Strategic. In *Merriam-Webster.com dictionary*. Retrieved from https://www.merriam-webster.com/dictionary/strategic

Merriam-Webster. (2023, September 13). Strategy. In *Merriam-Webster.com dictionary*. Retrieved from https://www.merriam-webster.com/dictionary/strategy

Merriam-Webster. (2023 September 12). Foresight. In *Merriam-Webster.com dictionary*. Retrieved September 12, 2023, from https://www.merriam-webster.com/dictionary/foresight

Rohrbeck, R., & Schwarz, J. O. (2013, October). The value contribution of strategic foresight: Insights from an empirical study of large European companies. *Technological Forecasting and Social Change, 80*(8), 1593-1606.

Schaffernicht, M. (2010). Causal loop diagrams between structure and behavior: A critical analysis of the relationship between polarity, behavior and events. *Systems Research and Behavior Science, 27*(6), 653-666.

Swanson, J. (2020, April 29). *Futures thinking now: Futures wheels*. Retrieved from KnowledgeWorks: https://knowledgeworks.org/resources/futures-thinking-now-futures-wheels/

TFSX. (2015, January 1). *What is strategic foresight?* Retrieved from TFSX: https://tfsx.com/2015/01/what-is-strategic-foresight/

Wilkinson, A. (2017). *Strategic foresight primer.* Retrieved from European Committee of the Regions: https://cor.europa.eu/Documents/Migrated/Events/EPSC_strategic_foresight_primer.pdf

World Economic Forum. (2023a). *Fourth Industrial Revolution*. Retrieved from World Economic Forum: https://www.weforum.org/focus/fourth-industrial-revolution

World Economic Forum. (2023b, January 11). *Global risks report 2023*. Retrieved from World Economic Forum: https://www.weforum.org/reports/global-risks-report-2023/digest/