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The Experience of Strategic Thinking in a Volatile, Complex, Uncertain & Ambiguous (VUCA) Environment

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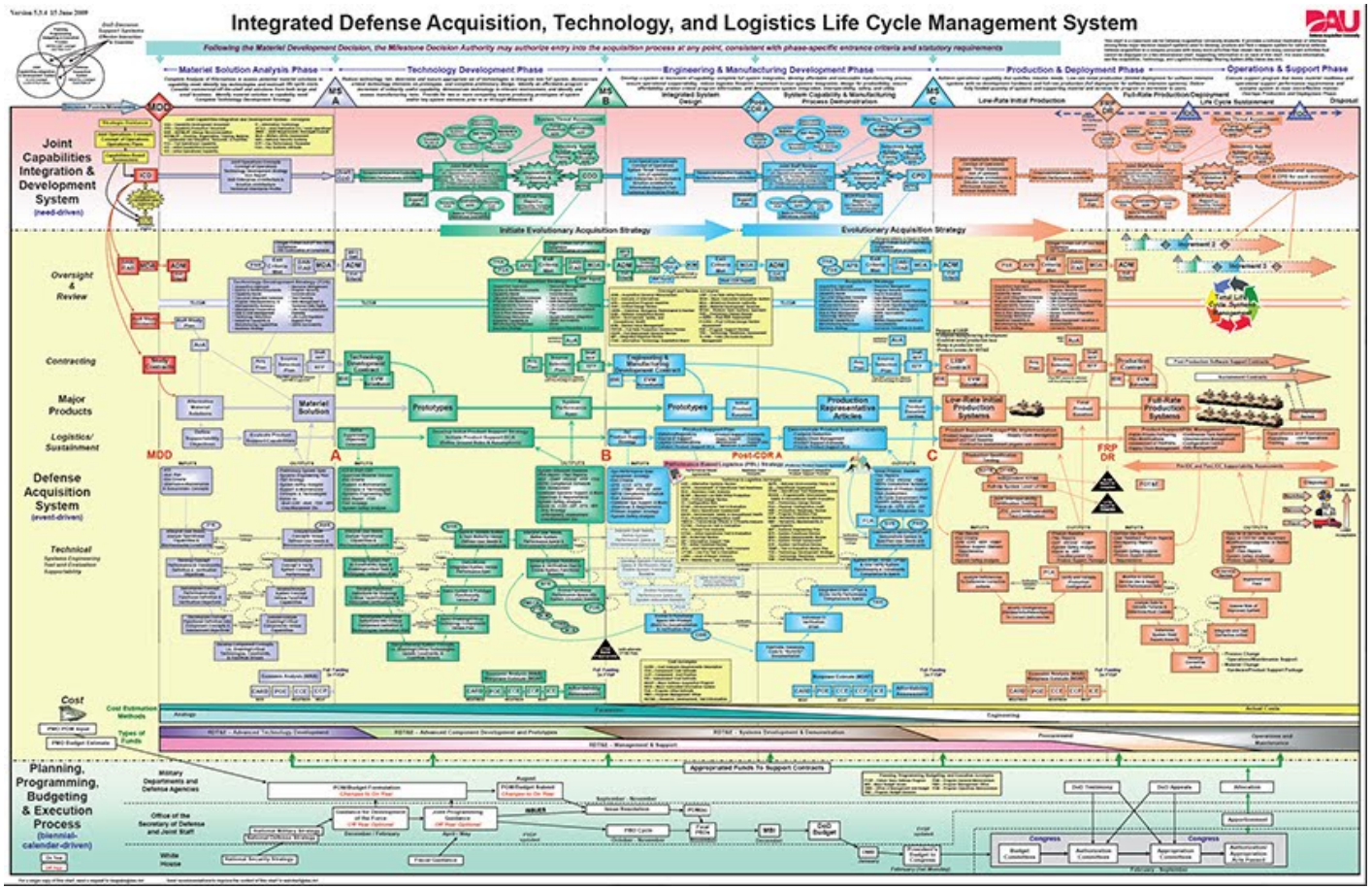
The Experience of Strategic Thinking in a Volatile, Complex, Uncertain & Ambiguous (VUCA) Environment



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Research Study Overview

Title: The Experience of Strategic Thinking in VUCA Environments

Purpose of the Study: To understand the experience of leaders when they think strategically in complex environments, where complex environments are characterized by volatility, uncertainty, complexity, and ambiguity (VUCA).

Problem Addressed: Across the Department of Defense (DoD), leaders in acquisition program management are faced with increasingly complex environments that challenge their ability to think strategically to guide acquisition program strategies that meet expectations and system requirements. Strategic thinking draws on both the strategy formation as well as cognition literature, however little is understood about the relationships of these topics. In addition, there is little in the literature about how strategic thinking in complex environments occurs, what triggers strategic thinking, what strategic questions are being asked, and what methods are being used to develop insight that help guide long-term strategies and short-term execution decisions.

Significance of the Study: The research study will help identify what happens when leaders think strategically in complex environments and how it occurs. As the complexity of the acquisition environment continues to increase, this research study will provide important information that can be used to help improve strategy development and execution decision-making. In addition, the individual participants will acquire knowledge about their own strategic thinking in complex environments.

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Research Question

This qualitative, phenomenological research study addressed the research question:

(1) What is the experience of leaders when they think strategically in a VUCA* environment?

Sub-questions:

(a) What happens when leaders think strategically in a VUCA environment?

(b) How does strategic thinking** in a VUCA environment occur?

Areas of specific interest:

(a) The triggers of strategic thinking,

(b) The strategic questions being asked, and

(c) The methods used to develop insight

*Note: The term VUCA stands for volatility, uncertainty, complexity, and ambiguity and is used interchangeably in this study with the term "complex" to represent the Department of Defense (DoD) acquisition program management environment (Army, 1998).

**Note: For this research study strategic thinking is defined as the cognitive phenomenon focused on strategic questions, using sensemaking and foresight to develop novel strategies.

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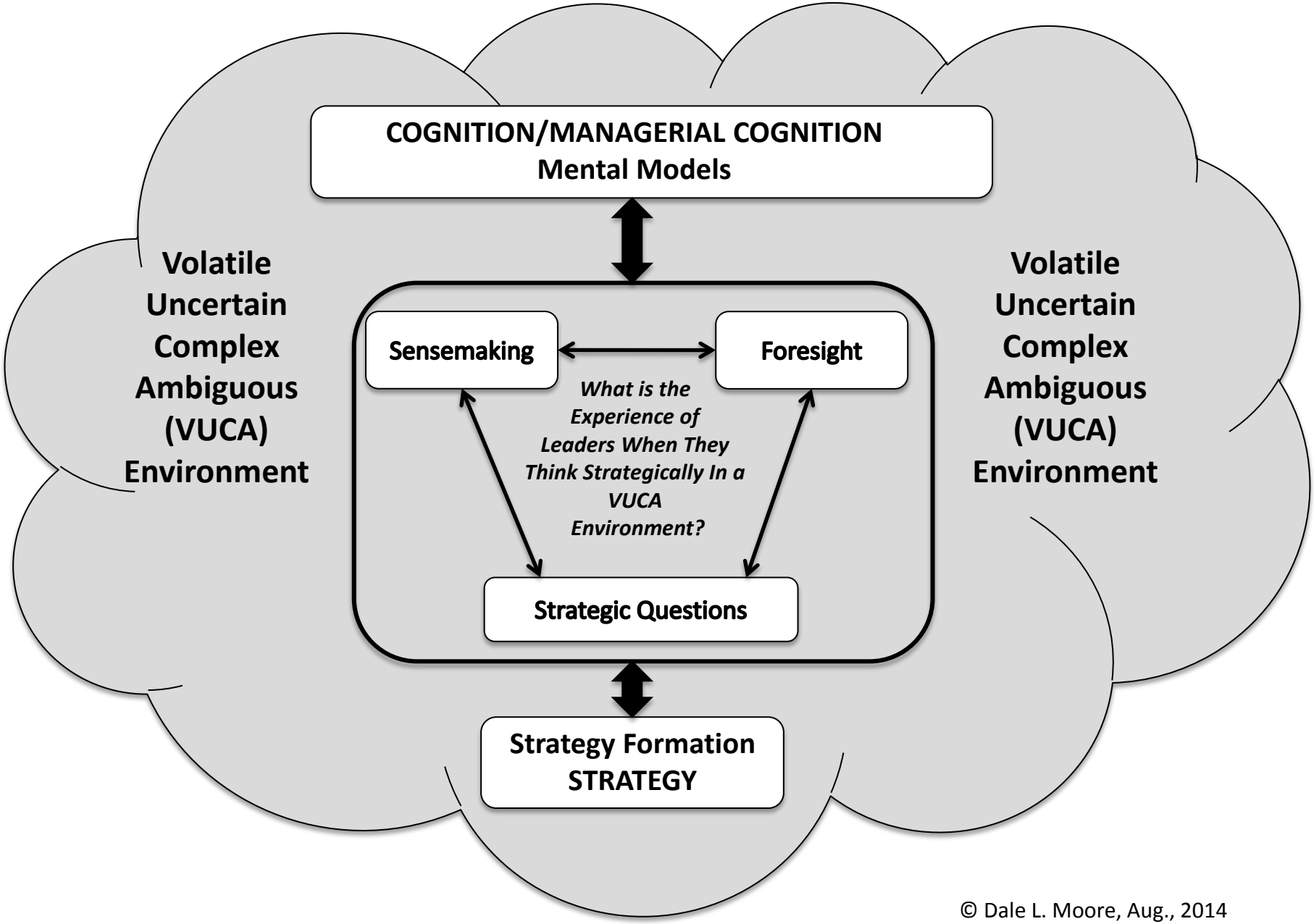
Strategic Thinking Research Study Conceptual Frame



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Methodology

The methods for this research followed:

Qualitative research methods based on specific criteria (Creswell, 2007) with a constructionist epistemology and phenomenology** as the theoretical perspective per Merriam (2009).*

*Constructionist epistemology, which has the view that "all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interactions between human beings and their world, and developed and transmitted within an essential social context" (Crotty, 2007, p. 42).

**Merriam (2009) defined phenomenology as "a study of people's conscious experience of their life-world, that is, their 'everyday life and social action' (Schram, 2003, p. 71)" (p. 25).

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Research Participant Criteria

Participants Sought for the Study: Participants are being referred by naval aviation acquisition program executive officers or their deputies to satisfy three specific criteria:

1) be someone who has performed in a senior acquisition program management role for over 2 years to include Program Manager or Deputy Program Manager position,
2) operate at a senior level of the organization (military 0-6/civilian GS-15 or equivalent and above) with significant fiduciary responsibility (acquisition categories I, IA, II, or III as defined in Department of Defense [DoD] Instruction 5000.02 dated December 8, 2008) representative of complex programmatic, technical, and budgetary/fiscal environments, and
3) have been involved with and responsible for developing and conceptualizing long-term acquisition program strategies and plans (e.g., program objective memorandum submits, program acquisition strategy, and/or future years defense program budget exhibits).

Participants will be asked to submit a resume describing their background and the organizations where they have worked and to participate in three 90-minute interviews.

The interviews will explore three main areas:

(1) responsibilities, history, and views regarding strategic thinking and complex environments;
(2) recollection and reconstruction of experiences; and
(3) reflections on those experiences.

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Research Study Participants

- Ten acquisition program managers and deputy program managers for major DoD acquisition programs were selected as referred by naval aviation acquisition program executive officers. Data were collected through in-depth interviews and transcribed to capture the program managers' lived experience and the meaning they made (Seidman, 2006). Data were analyzed and themes developed using Moustakas's (1994) modification of the Stevick-Colaizzi-Keen method as a guide.

Program management experience (years)	Rank/grade*
14.5	GS-15
6.0	0-6
6.0	0-6
5.0	0-6
4.5	0-6
3.0	GS-15
3.0	GS-15
2.5	0-6
2.0	0-6
2.0	GS-15

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Data Collection & Analysis

- Data were collected through three 90-minute in-depth interviews, which were transcribed to capture “the lived experience of other people and the meaning they make of that experience” (Seidman, 2006, p. 9).
- From the initial interview, cognitive maps*, defined as “graphic representations that locate people in relation to their information” (Fiol & Huff, 1992, p. 267), were developed and refined to represent the participants strategic thinking experience.
- These cognitive maps were used during subsequent interviews as a triggering mechanism and as a point of departure to coalesce inputs and build a reference for thinking strategically in a VUCA environment (Huff & Jenkins, 2002; Weick & Bougon, 1986).
- Data analysis commenced once all interviews had been completed, as recommended by Seidman (2006).
- The Moustakas (1994) suggested modification of the Stevick-Colaizzi-Keen method of analysis of phenomenological data was used as a guide for this study.

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Findings

A. **Description of the Environment:**
   1. Battleground
   2. Chaotic
   3. Volatile
   4. Uncertain
   5. Dynamic
   6. Complex
   7. Bureaucratic

B. **Triggers for Strategic Thinking:**
   1. Having the Responsibility
   2. Having Discussions
   3. Solving Problems
   4. Changes in the Environment
   5. Events

C. **Definition of Strategic Thinking:**
   1. Taking a Holistic, Long-Term View
   2. Determining Goals
   3. Influencing Things

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Findings (cont.)

Themes:

1) **Strategic thinking utilizes an extensive range of knowledge, abilities, and conditions that enable clarity of thought**
   - **Understanding Self**
   - **Understanding the Business**
   - **Imagining the Possible**
   - **Being Open to New Perspectives**
   - **Making New Connections**
   - **Adapting to Environmental Change**
   - **Possessing Wisdom**

2) **Strategic thinking occurs deliberately as both a high-level creative and a tactically grounded process**
   - **Stepping Back**
   - **Envisioning**
   - **Thinking Things Through**

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Findings (cont.)

3) **Strategic thinking is fueled by iterative individual and group analytical and dialogical activities to address the knowledge needed to create strategic-to-tactical linkages and frameworks**
   - **Traditional Strategic Planning Activities**
   - **Communication Activities**
   - **Decision-Making**
   - **Questioning**
   - **Synthesis of Perspectives**

4) **Strategic thinking is a deeply personal experience that evokes a wide range of positive and negative emotions**
   - **Happiness**
   - **Hope**
   - **Surprise**
   - **Fear**
   - **Challenge**
   - **Pride**
   - **Interest**
   - **Frustration**
   - **Sadness**

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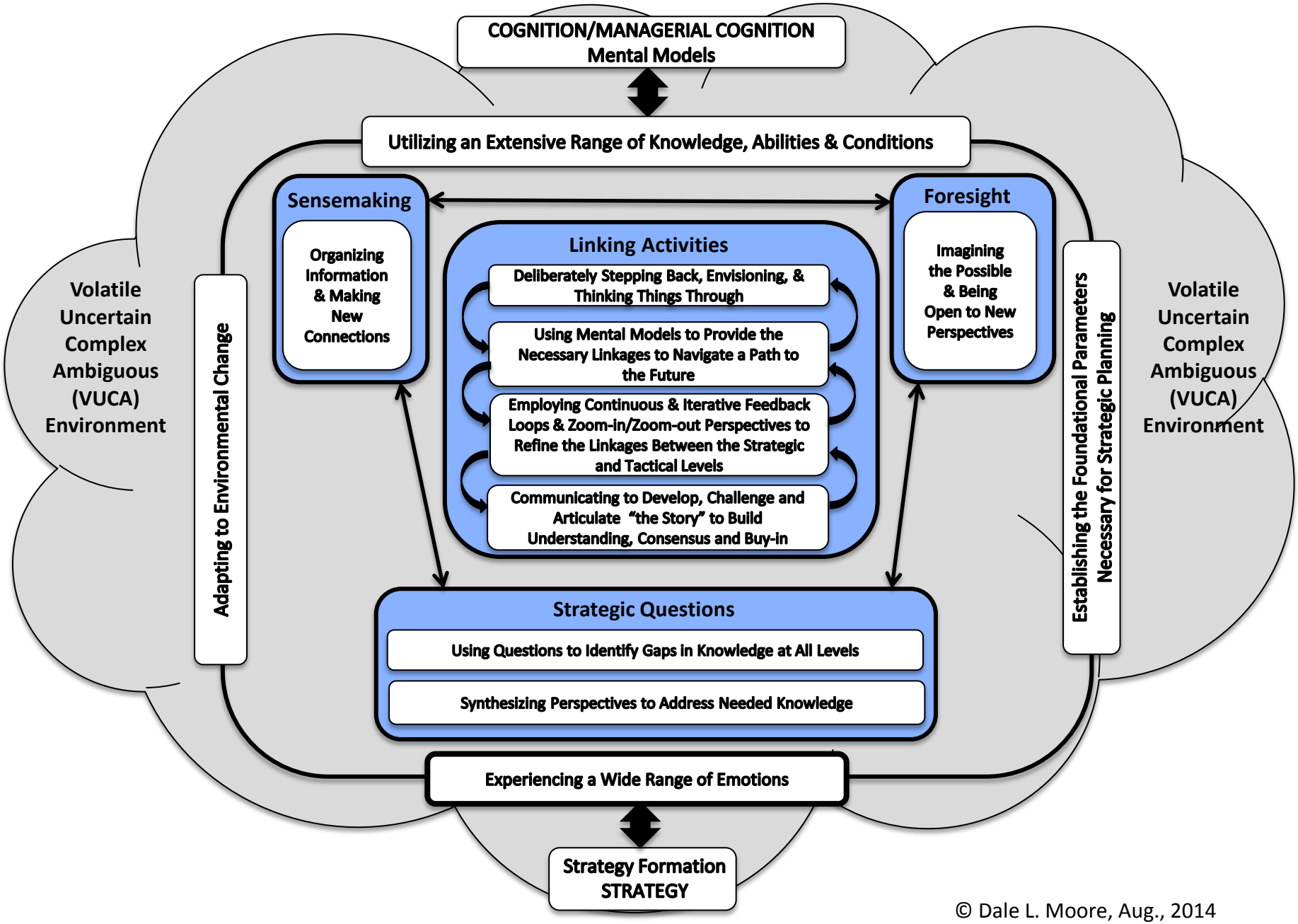

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Conclusions

Definition of Strategic Thinking: The study concluded that strategic thinking is a cognitive, emotional, and behavioral phenomenon that is both high-level and tactically grounded and is fueled by individual and group analytical and dialogical activities to address needed knowledge, enable clarity of thought, and create strategic-to-tactical linkages and mental models to develop enabling strategies.

Characteristics of the VUCA Environment: The characterization of the VUCA environment needs to include the structural elements that may impede the ability to adapt and respond.

Triggers for Strategic Thinking & Strategic Questions: Two additional triggers for strategic thinking and questions should be expanded and clarified in the literature. The first is having the responsibility for strategic thinking. The second comprises event and calendar-driven triggers.

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Recommendations

Recommendations for Theory

1. Expanding the application of strategic thinking to include key behaviors inc. role of influence, fundamental change and consideration of views and perspectives from the surroundings.
2. Expanding the scope of consideration for strategic thinking to include strategic-to-tactical linkages.
3. Expanding the role of strategic questions and questioning.
4. Expanding the strategic environment beyond VUCA to include structural impediments.
5. Incorporating the emotional aspects of strategic thinking.

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Recommendations

Recommendations for Practice

1. Enhancing strategic thinking knowledge and skills
2. Stepping back to take a look at the big picture
3. Embracing the use of strategic questions and questioning
4. Creating the conditions that foster strategic thinking
5. Provide the requisite emotional support for strategic thinking

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Recommendations

Recommendations for Future Research

1. The role of mental models in individual and group strategic thinking
2. Synthesis and application of diverse perspectives
3. Adaptation, change, and transformation of mental models
4. Role and nature of communication
5. Role, influence and management of emotions
6. Role of past experience in strategic thinking in a VUCA environment
7. Social contributions to strategic thinking in a VUCA environment

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Concluding Thoughts

- The phenomenological approach used for this study, utilizing in-depth interviews for thick descriptions of the participants' experience coupled with cognitive maps, provided a rich and valuable research context.
- The use of open-ended questions and follow-up probes during the interviews allowed participants to express their experiences in an unencumbered fashion and explore those experiences in areas they had not consciously considered.
- The development of codes and themes in this study was particularly complex and the use of analytical questions to help organize and structure codes was of significant benefit.
- As the nature of the VUCA environment continues to extend into ever-more complex and disruptive domains, the role of leaders and their ability to think strategically become increasingly important.
- This study provided important contributions to the understanding and theory of strategic thinking in VUCA environments and opened the door to new areas of research as well as new approaches and considerations to improve practice.
- It is suggested that strategic thinking is rapidly becoming a prerequisite skill at all levels of the organization to enable success in the increasingly VUCA and bureaucratic environments anticipated for the future.

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Back-Up

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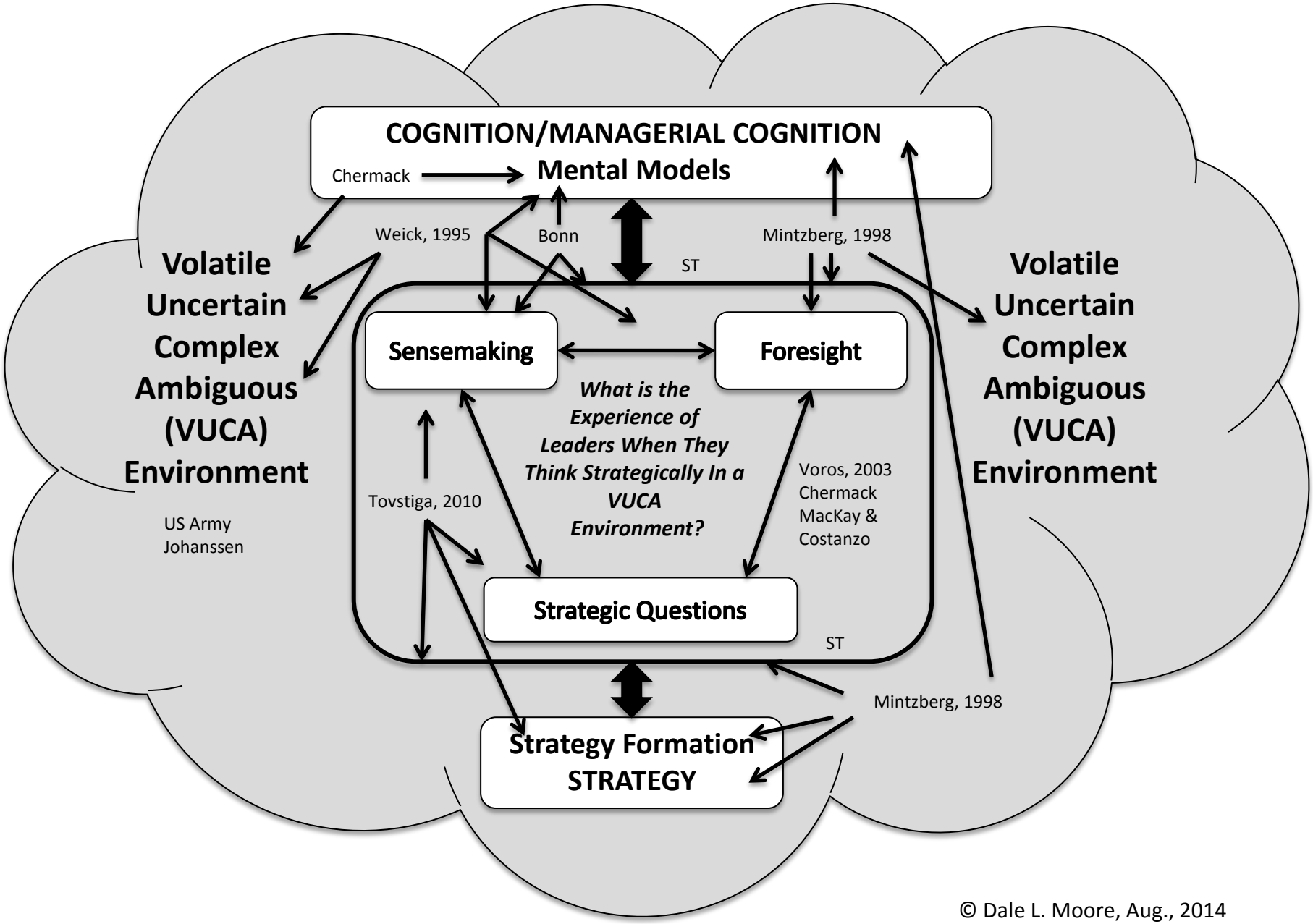
Strategic Thinking Research Study Conceptual Frame with Literature Linkages



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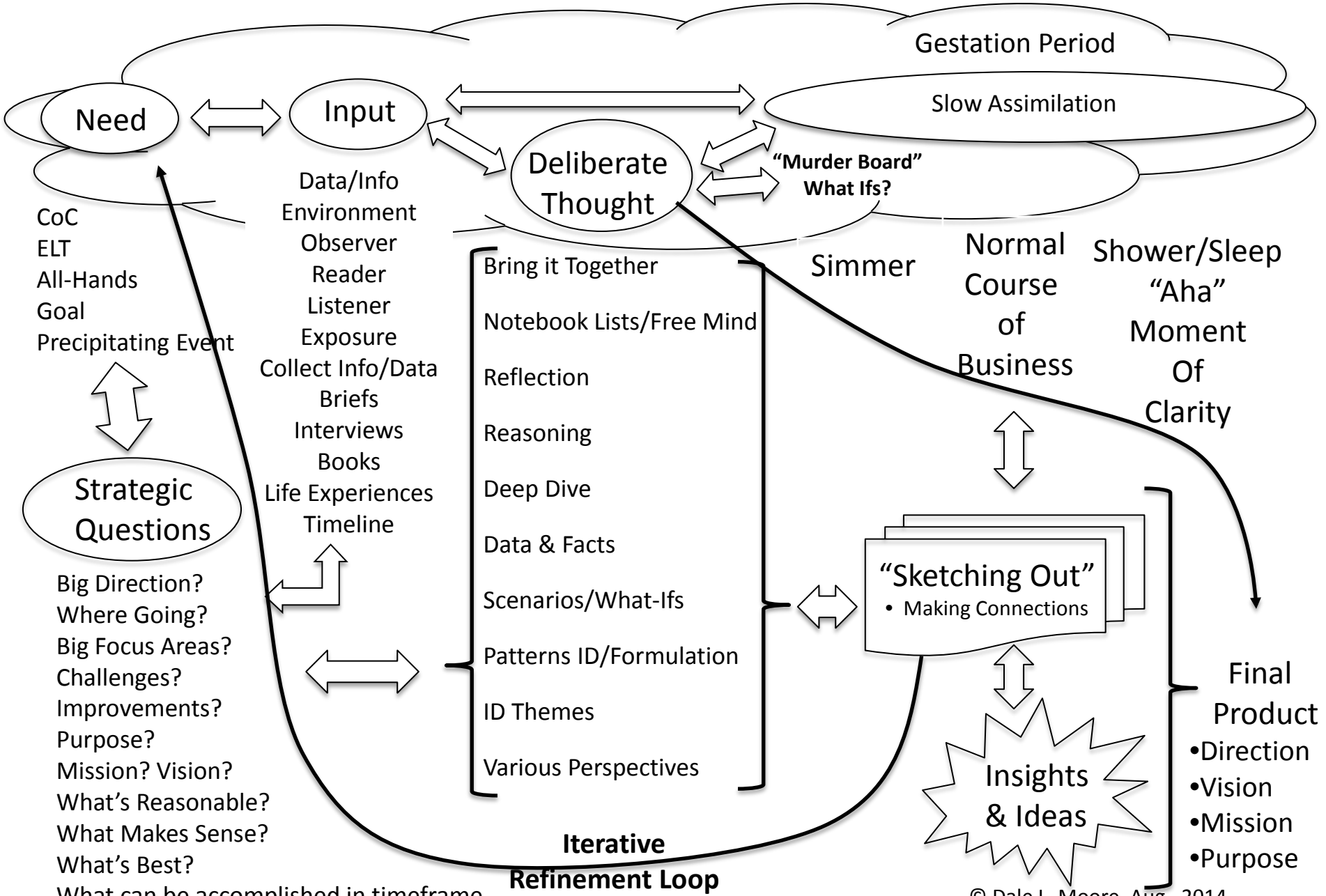
Strategic Thinking in a VUCA Environment – Participant 1



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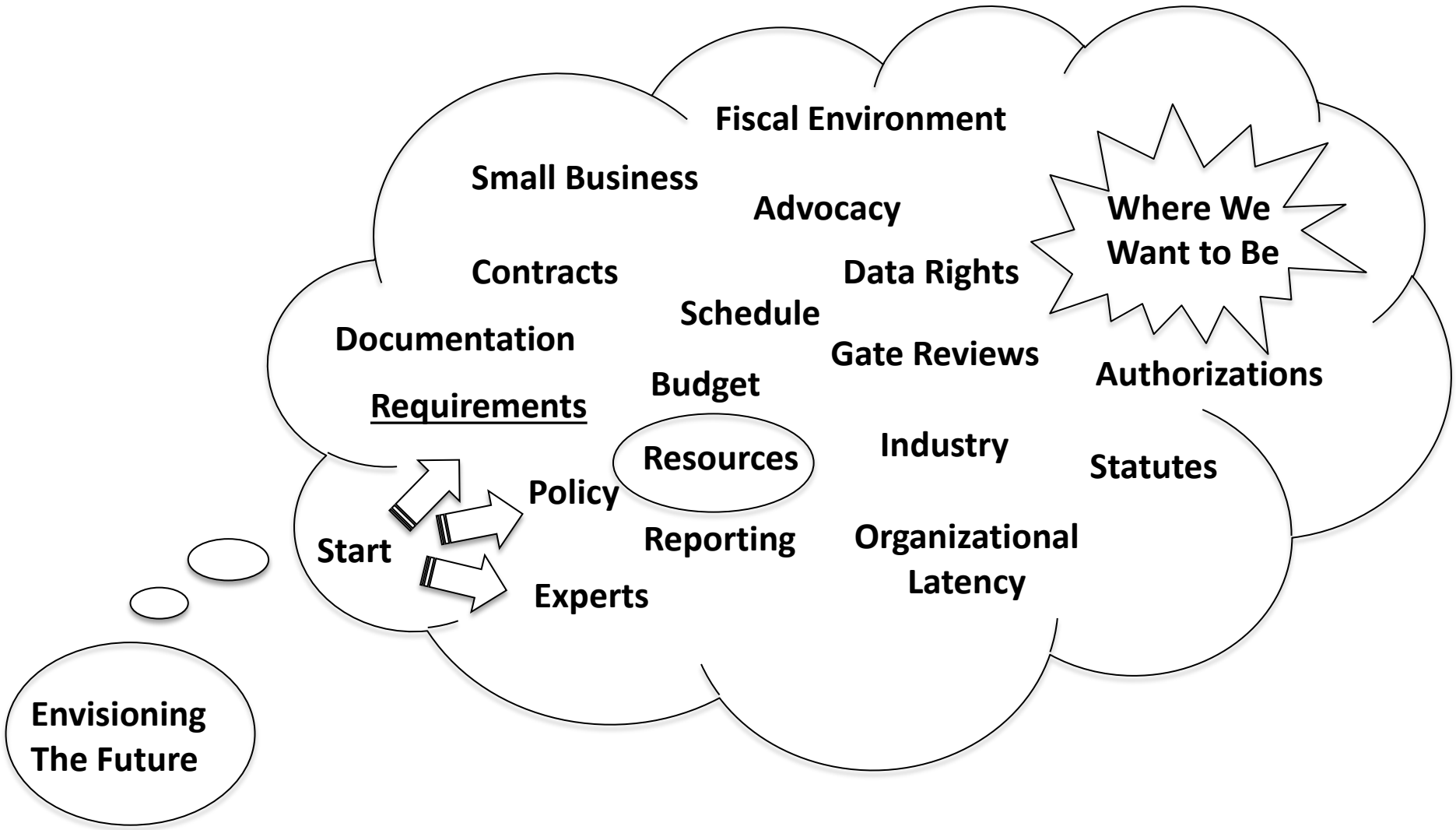
Strategic Thinking in a VUCA Environment – Participant 2



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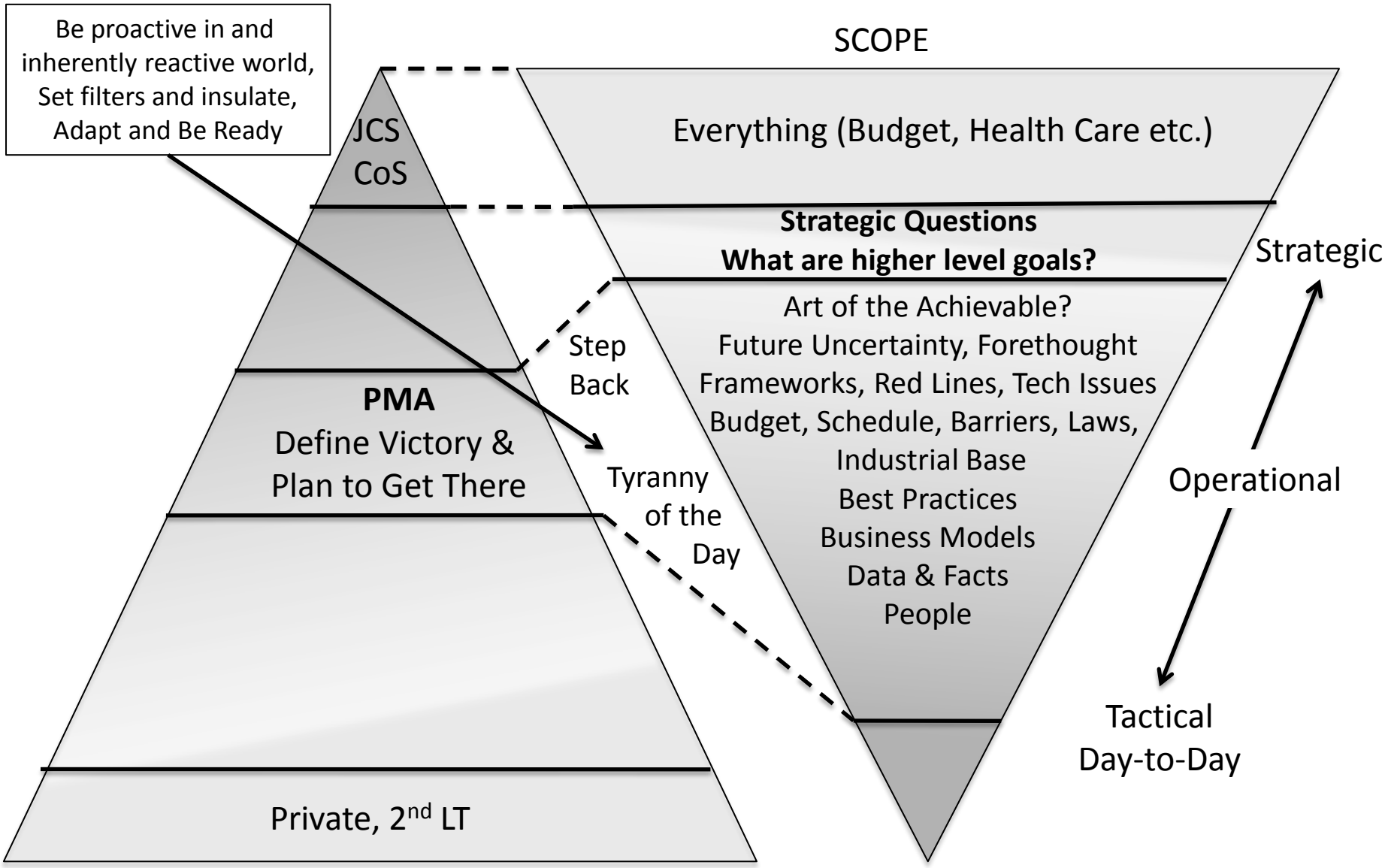
Strategic Thinking in a VUCA Environment – Participant 3a



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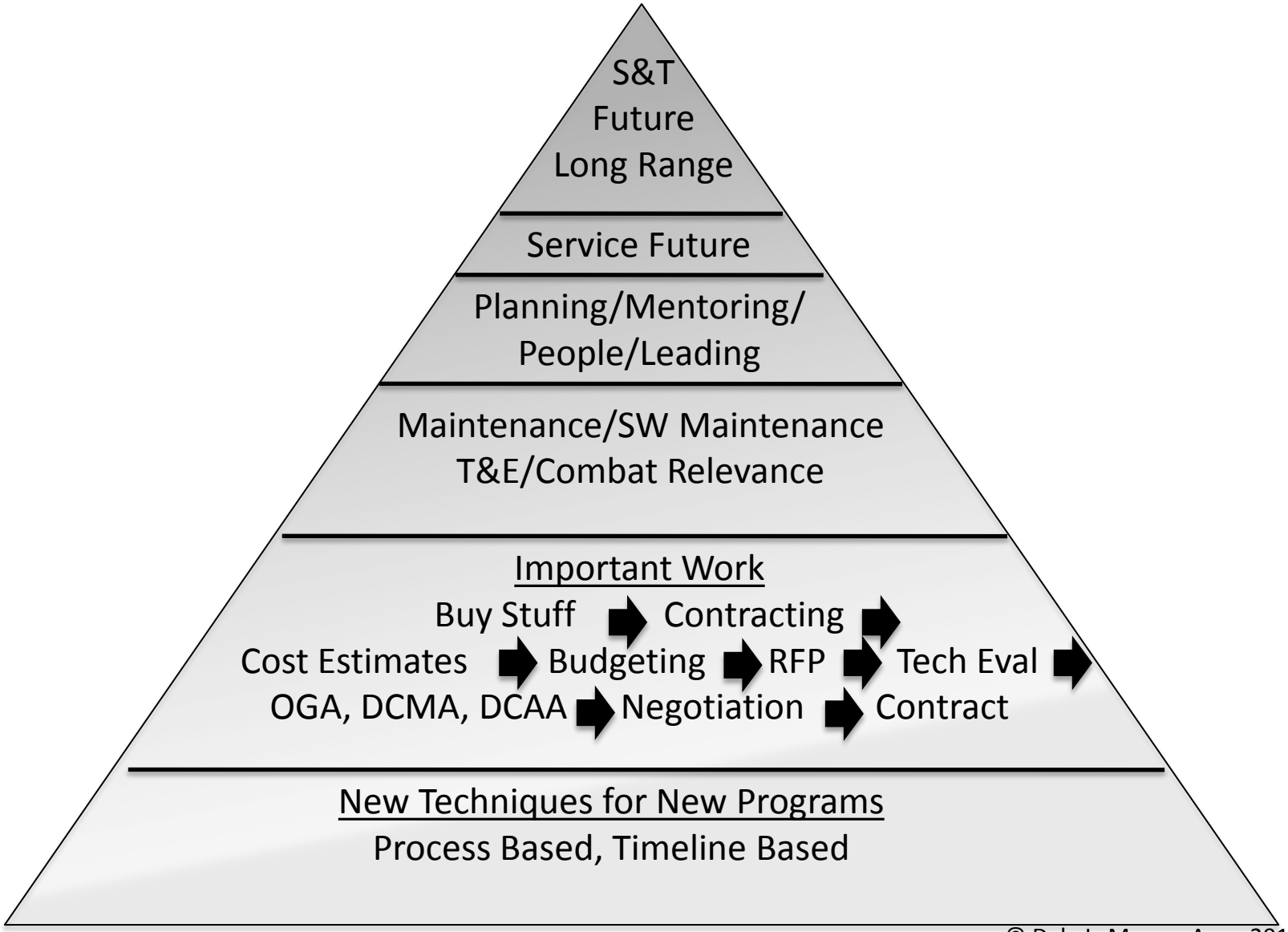
Strategic Thinking in a VUCA Environment – Participant 3b

Time Allocation Management Strategic View



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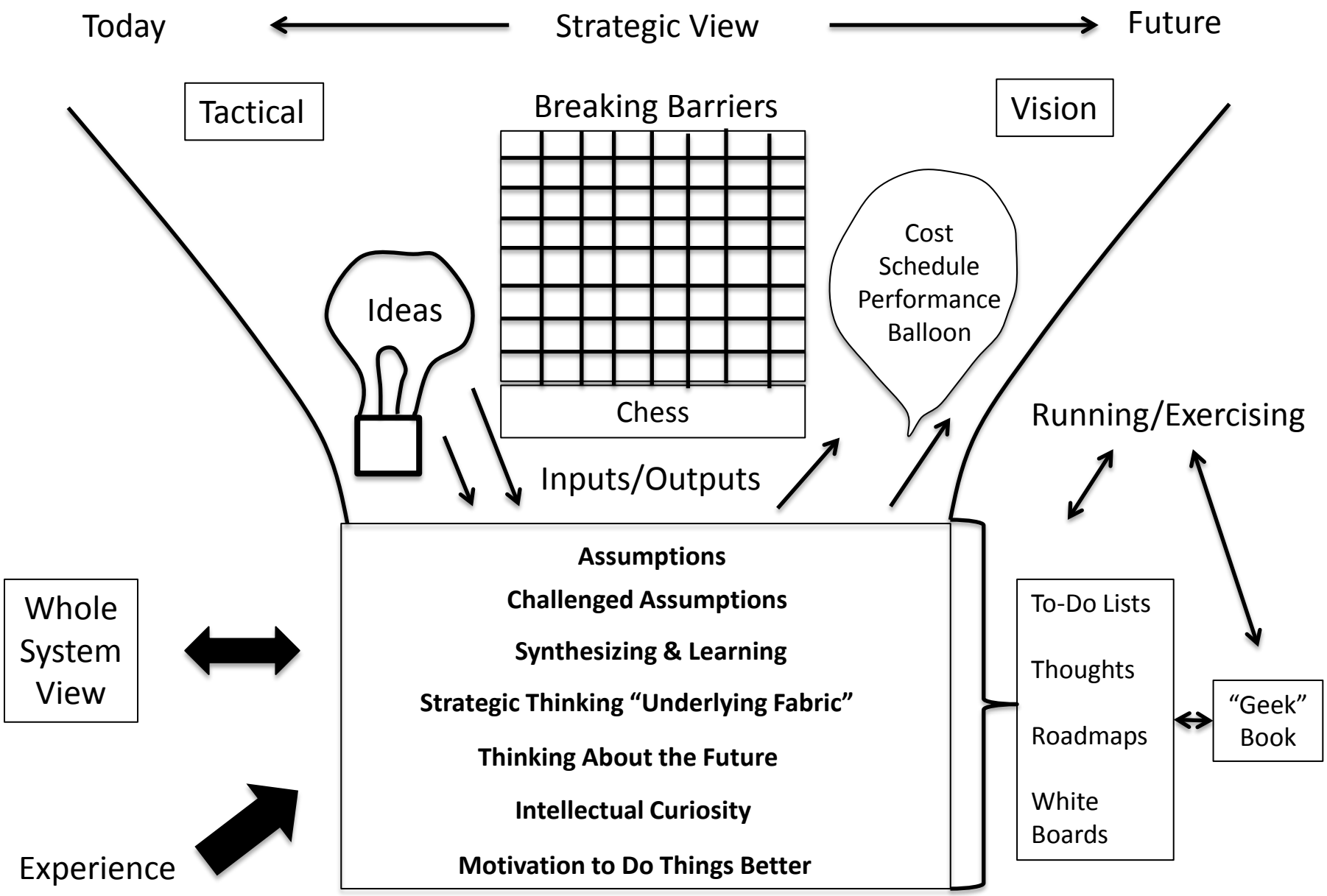
Strategic Thinking in a VUCA Environment – Participant 4



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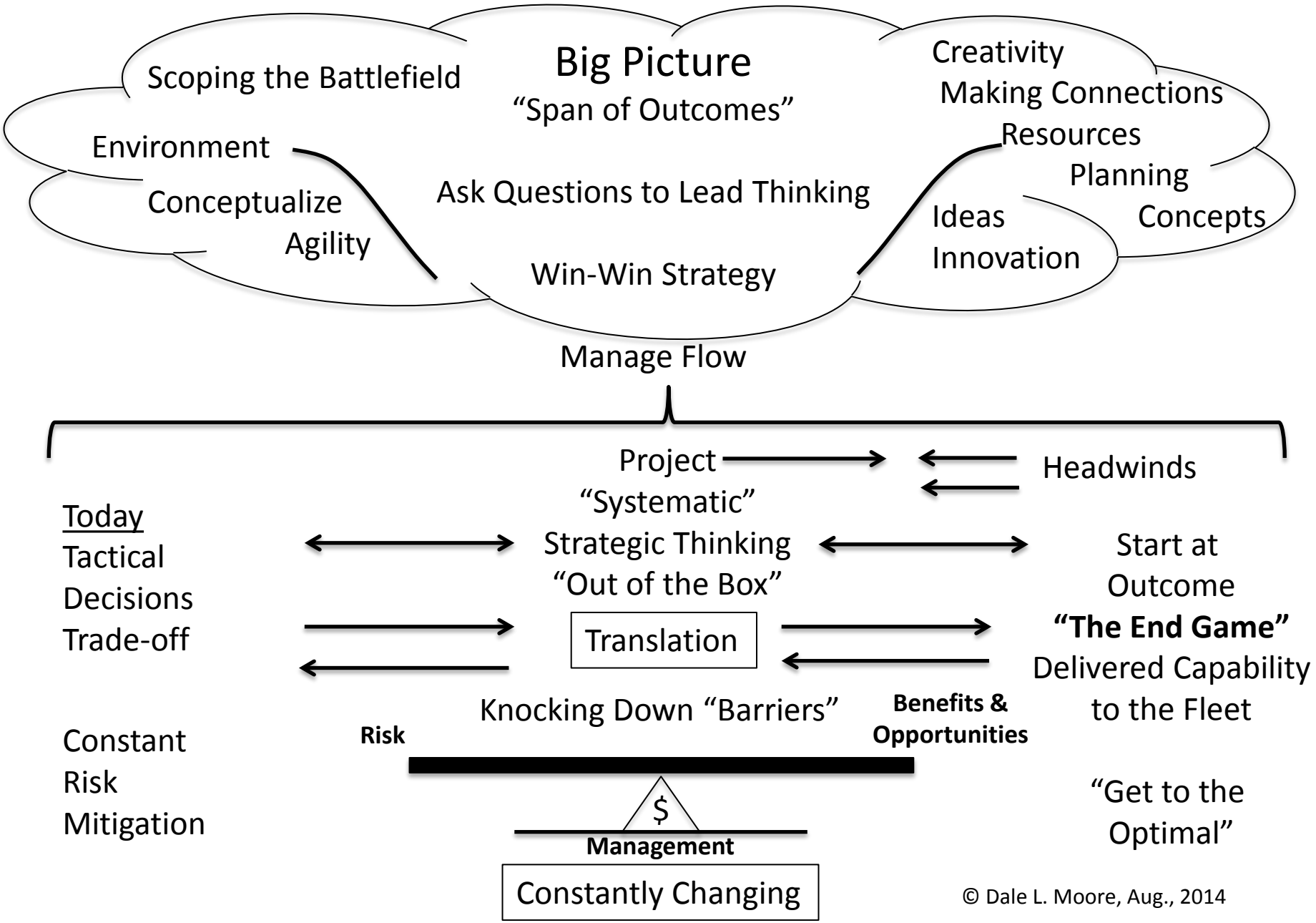

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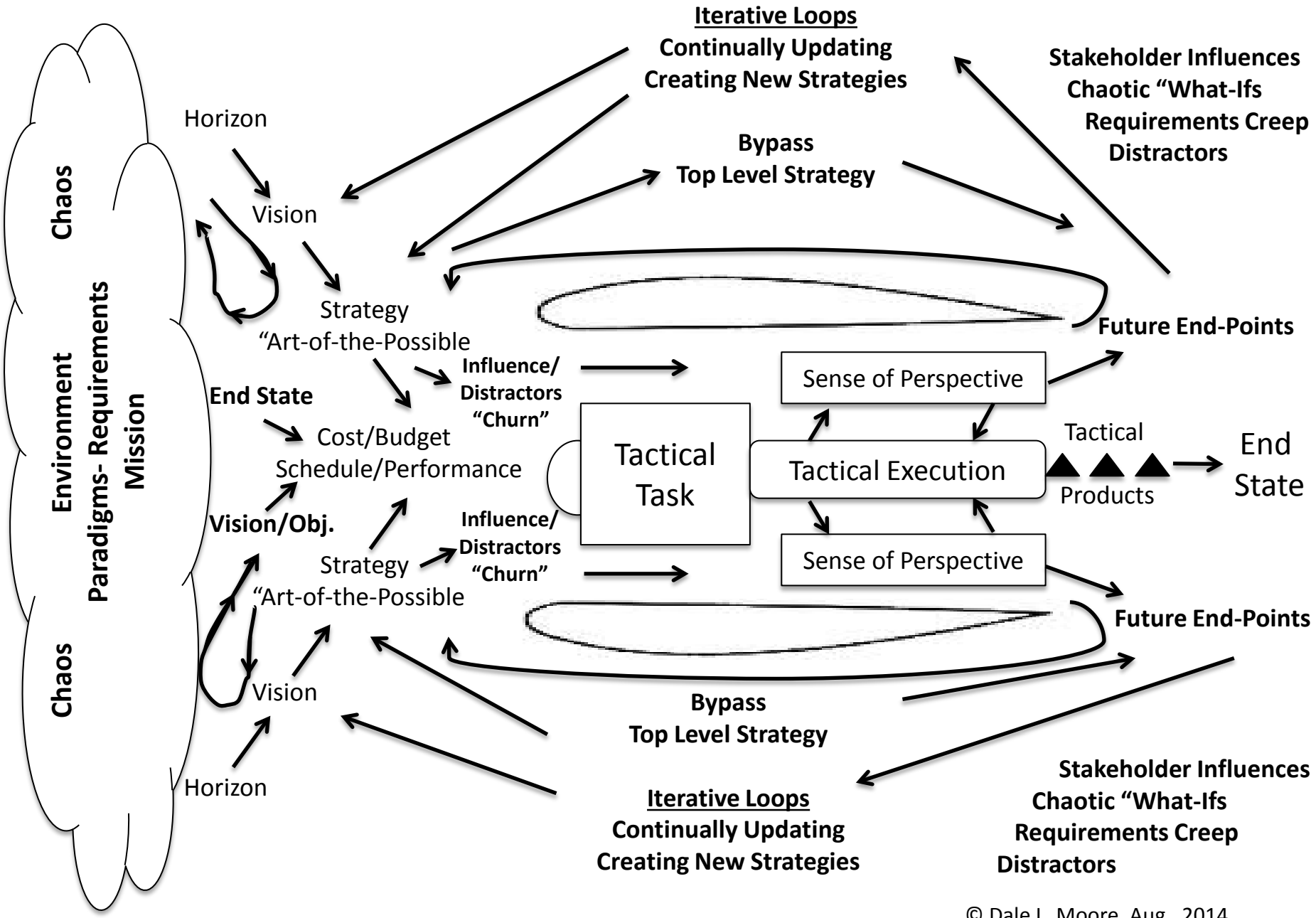

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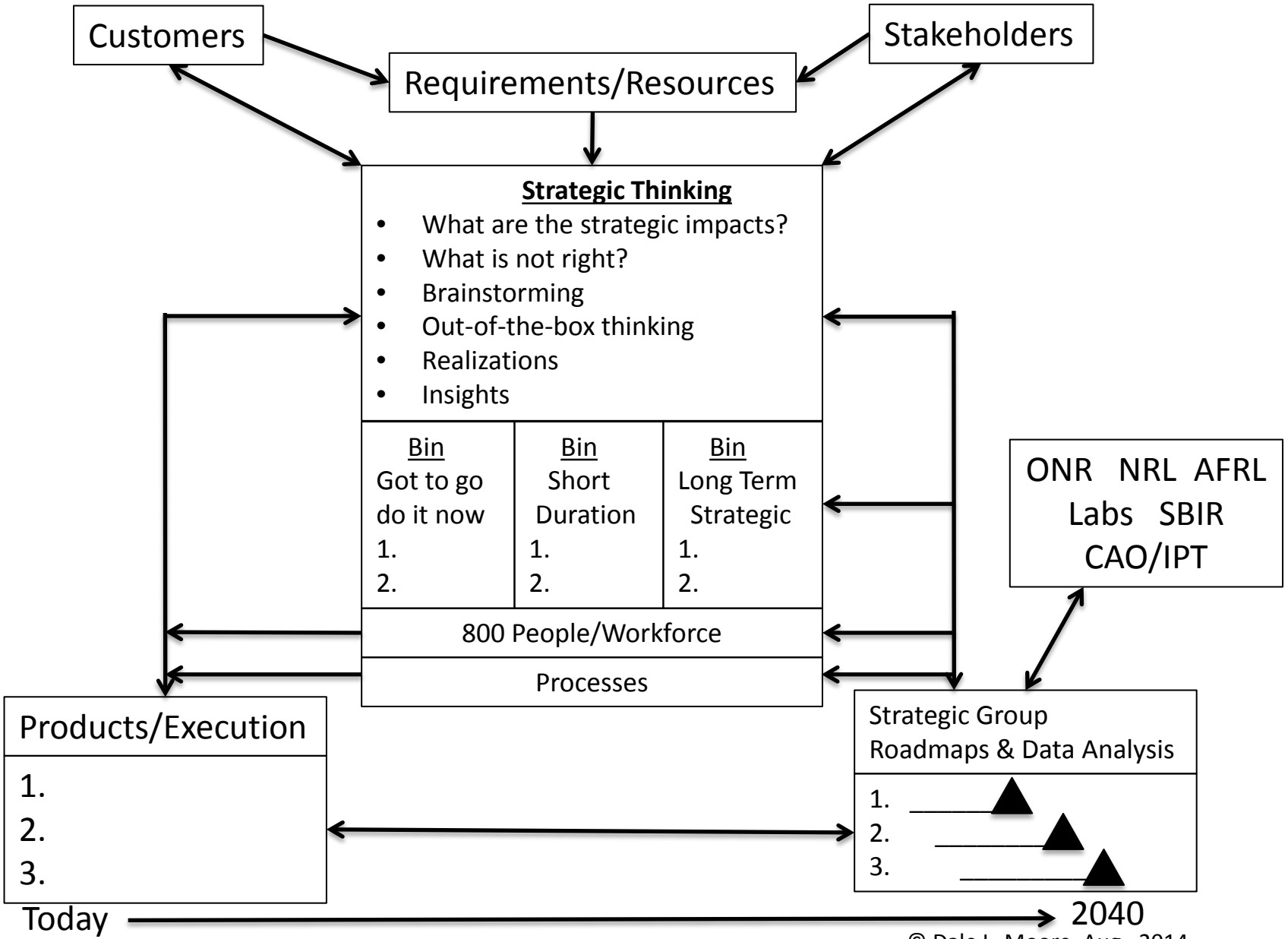

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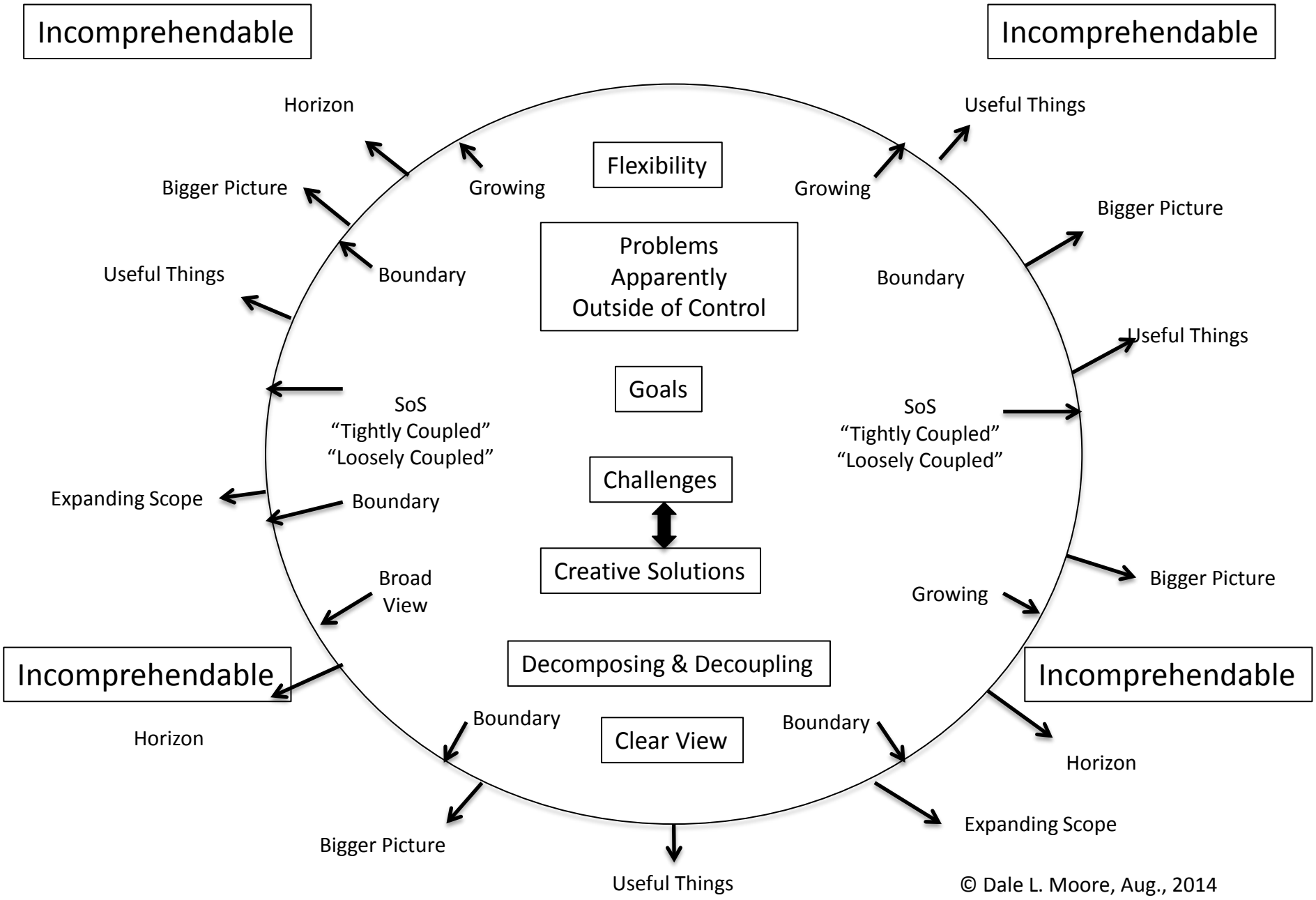

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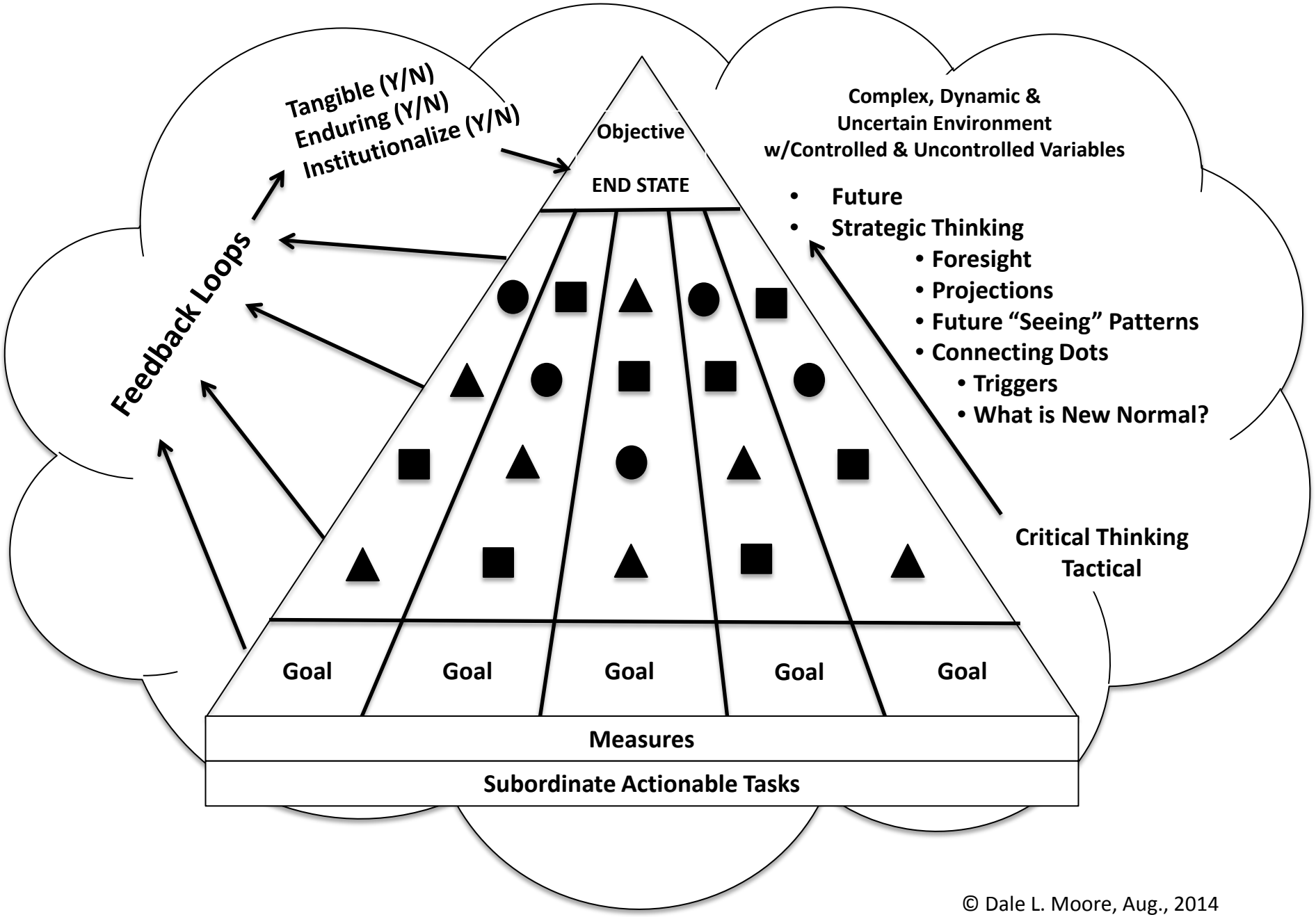
Strategic Thinking in a VUCA Environment – Participant 9



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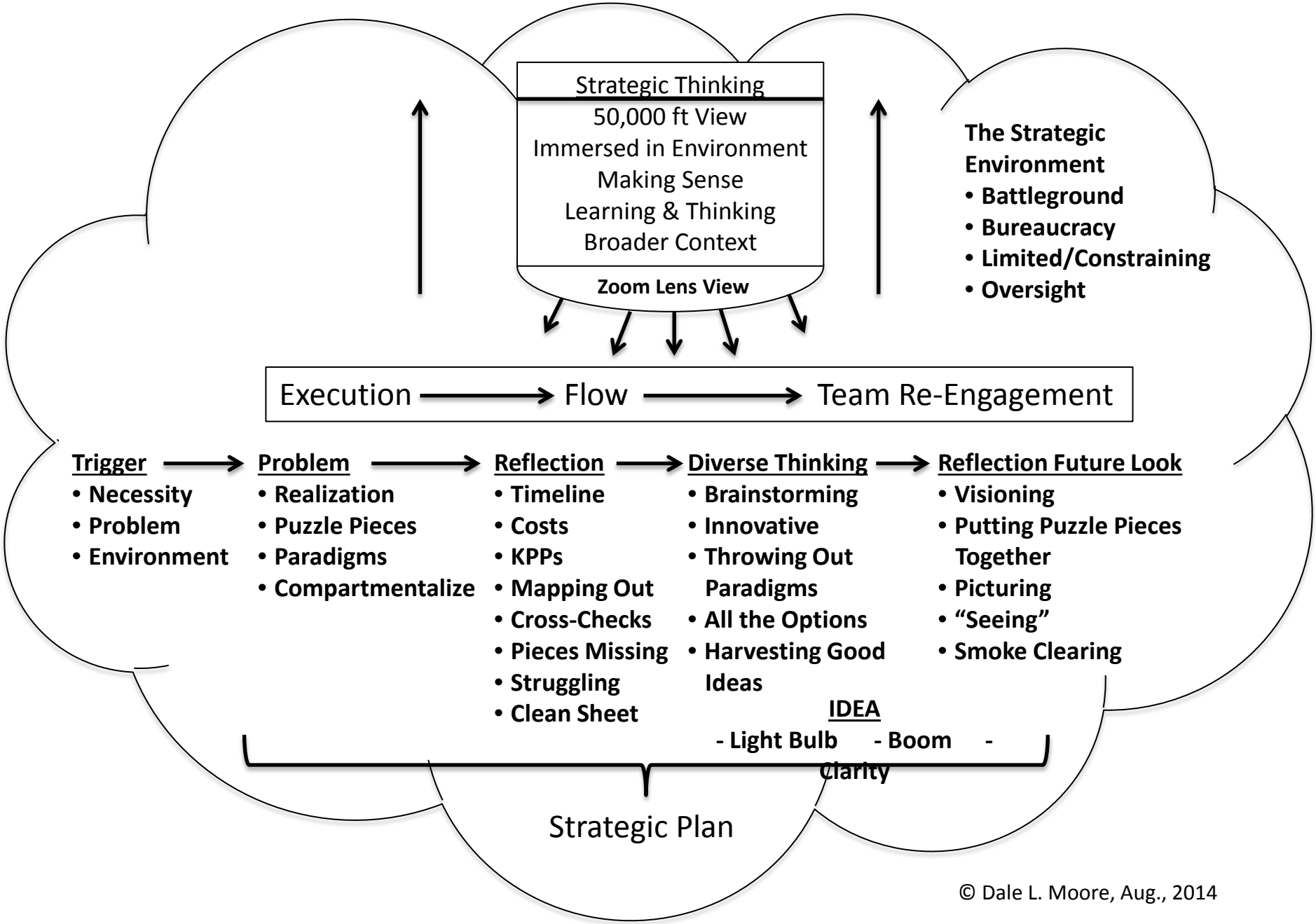
Strategic Thinking in a VUCA Environment – Participant 10



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Definition of Terms

- *Cognition*. "Various individual- and organizational-level phenomenon, related to the acquisition, kinds, uses, and implications of knowledge, beliefs, or intelligence" (Meindl, Stubbart, & Porac, 1996, p. 4).
- *Cognitive map.* "Graphic representations that locate people in relation to their information" (Fiol & Huff, 1992, p. 267).
- *Corporate strategy.* "The pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of the economic and noneconomic contribution it intends to make to its shareholders, employees, customers, and communities" (Andrews, 1971, p. 18).
- *Foresight*. "A process by which one comes to a fuller understanding of the forces shaping the long term future which should be taken into account in policy formulation, planning and decision making" (Georghiou et al., 2008, p. 7).
- *Knowledge structure*. "A mental template that individuals impose on an information environment to give it form and meaning" (Walsh, 1995, p. 281).
- *Leadership*. "The process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (Yukl, 2010, p. 8).
- *Mental models*. "Devices through which individuals make sense of current perceptions in the context of longer term perceptive repertoires" (Jacobs & Heracleous, 2005, p. 341).
- *Schema*. "A cognitive structure that represents knowledge about a concept or type of stimulus, including its attributes and the relations among those attributes" (Fiske & Taylor, 1991, p. 98).
- *Sensemaking*. "A process that involves making sense of confusing, highly uncertain and complex situations that we find ourselves in to facilitate decision making" (MacKay, 2009, p. 95).
- *Strategic questions.* "Questions [that] address problems or challenges of strategic relevance to the organization. 'Strategic' in this context refers to the fact that the question is relevant to the organization's ability to compete—its competitiveness. Inevitably, strategic questions arise when conditions affecting the organization's ability to compete change" (Tovstiga, 2010, p. 24).

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Definition of Terms (cont.)

- *Strategic thinking*. The cognitive phenomenon (Heracleous, 1998; Liedtka, 1998; Mintzberg, 1978, 1994, 1995, 1998; Spender & Eden, 1998; Walsh, 1995) focused on strategic questions (Hamel & Prahalad, 1994; Koch, 2006; MacKay & Costanzo, 2009; Mintzberg, 1998; Tovstiga, 2010, 2013; Weber, 1984; Zabriskie & Huellmantel, 1991), using sensemaking (Bonn, 2001; Graetz, 2002; Hanford, 1995; Tovstiga, 2010, 2013; Weick, 1995) and foresight (Bonn, 2001; Chermack, 2011; Conway & Voros, 2003; Goldman, 2008b; Graetz, 2002; Hanford, 1995; Heracleous, 1998; Liedtka, 1998; Mintzberg, 1995; Tovstiga, 2010, 2013) to develop novel strategies (Bonn, 2005; Goldman, 2008b; Graetz, 2002; Heracleous, 1998; Mintzberg, 1978, 1998; Tovstiga, 2010, 2013).
- *Strategy*. "The determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals" (Chandler, 1962, p. 13).
- *Strategy formation*. "Judgmental designing, intuitive visioning, and emergent learning; it is about transformation as well as perpetuation; it must involve individual cognition and social interaction, cooperation as well as conflict; it has to include analyzing before and programming after as well as negotiating during; and all this must be in response to what can be a demanding environment" (Mintzberg, 1998, p. 373).
- *VUCA.* Complex environments characterized by volatility, uncertainty, complexity, and ambiguity and whose activities involve intricate and multivariate "system of systems" composed of requirements, resource allocation, and acquisition systems.

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Cognitive Factors

Cognitive factor	Description	Source
Bounded rationality	"The limits imposed on information processing capacity by existing cognitive structures and processes."	Schneider & Angelmar, 1993, p. 351
Cognitive capability/ power	"The potential strength of cognitive processes in a person and . . . therefore the maximum level of task complexity that someone can handle at any given point in his or her development."	Jaques & Clement, 1991, p. 49
Cognitive capacity	The ability to "economize on data processing through classification schemes and devising appropriate strategies for extracting useful information from data and shedding irrelevant data as noise."	Boisot, 1995, p. 316
Cognitive complexity	"The number and range of variables persons can use in constructing their worlds."	Jaques, 1986, p. 382
Cognitive processes	"The mental processes by means of which a person is able to organize information to make it available for doing work."	Jaques & Clement, 1991, p. 48
Knowledge structures	"A mental template consisting of organized knowledge about an information environment that enables interpretation and action."	Walsh, 1995, p. 286
Mental models	"Mental models are devices through which individuals make sense of current perceptions in the context of longer term perceptive repertoires."	Jacobs & Heracleous, 2005, p. 341
Perceptual filters	"The processes that amplify some data and attenuate others, thus distorting the raw data and focusing attention."	Starbuck & Milliken, 1988, p. 349
Schemas	"Dynamic, cognitive knowledge structures regarding specific concepts, entities, and events used by individuals to encode and represent incoming information efficiently"; they "guide perception, memory and inference" as well as the "search for, acquisition of, and processing of information that guides subsequent action."	Meindl, Stubbart, & Porac, 1996, p. 286

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