



Research Product 2020-03

Strategic Thinking Skill-Building Exercises

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March 2020

**United States Army Research Institute
for the Behavioral and Social Sciences**

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**U.S. Army Research Institute
for the Behavioral and Social Sciences**

**Department of the Army
Deputy Chief of Staff, G1**

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Research accomplished under contract
for the Department of the Army by

Applied Research Associates, Inc.

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REPORT DOCUMENTATION PAGE					
1. REPORT DATE (dd-mm-yy) March 2020		2. REPORT TYPE Final		3. DATES COVERED (from. . . to) October 2016 – December 2017	
4. Title: Strategic Thinking Skill-Building Exercises			5a. CONTRACT OR GRANT NUMBER W911NF-14C-0063		
			5b. PROGRAM ELEMENT NUMBER 622785		
6. AUTHOR(S) Anna Grome, Beth Crandall, Angela I. Karrasch, Anna L. Sackett, Ava Santos, Ellen Goldman, & James Greer			5c. PROJECT NUMBER A790		
			5d. TASK NUMBER 405		
			5e. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS Applied Research Associates U.S. Army Research Institute 1750 Commerce Ctr Blvd N 6000 6 th St Fairborn, OH 45324-6333 Fort Belvoir, VA 22060			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences 6000 6 th Street, Building 1464 Fort Belvoir, Virginia 22060			10. MONITOR ACRONYM ARI		
			11. MONITOR REPORT NUMBER Research Product 2020-03		
12. DISTRIBUTION/AVAILABILITY STATEMENT: Approved for public release: distribution unlimited.					
13. SUPPLEMENTARY NOTES: ARI Research POC: Dr. Angela Karrasch, angela.i.karrasch.civ@mail.mil					
14. ABSTRACT (<i>Maximum 200 words</i>): Army leaders who effectively engage in strategic thinking can successfully navigate volatile, uncertain, complex, and ambiguous (VUCA) environments. As part of a larger effort to study the impact of practice on strategic thinking development, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) developed four practical exercises that will build and reinforce cognitive and behavioral skills that underpin the ability to think strategically. The four exercises are: Reflecting on the Environment, Questioning to Deepen Learning, Telling a Story - An Exercise in Connecting the Dots, and Envisioning Potential Futures. These exercises can be used in classroom and field settings. This Research Product includes all materials required for each exercise, including a facilitator guide, a slide deck with an overview and brief tutorial, and a participant exercise aid.					
15. SUBJECT TERMS reflection, questioning, testing, information gathering, synthesis, systems thinking, strategic foresight, thinking in time, learning					
SECURITY CLASSIFICATION OF			19. LIMITATION OF ABSTRACT	20. NUMBER OF PAGES	21. RESPONSIBLE PERSON
16. REPORT Unclassified	17. ABSTRACT Unclassified	18. THIS PAGE Unclassified	Unlimited Unclassified	160	Dr. Angela Karrasch (913) 684-9758

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ACKNOWLEDGEMENT

The authors would like to thank those who graciously volunteered their time to pilot the exercises and offer their feedback and suggestions for improving the exercises. The list of individuals includes various members of the University of Foreign Military and Cultural Studies faculty, research psychologists at the U.S. Army Research Institute at Fort Leavenworth, and members of the 1st Infantry Division at Fort Riley, KS. Feedback from these individuals was valuable for improving the exercises to achieve maximal learning benefit for Army leaders. We would also like to thank Dr. Will Weyhrauch, Elena Knyshev and Dr. Mathias Simmons for contributions to the research and editing the document.

STRATEGIC THINKING SKILL-BUILDING EXERCISES

STRATEGIC THINKING SKILL-BUILDING EXERCISES

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OVERVIEW

The exercises in this packet address the need to further develop strategic thinking capabilities in the Army. They are designed to help develop and strengthen the cognitive and behavioral skills needed to be an effective strategic thinker by providing practice in using those skills.

Who Will Benefit from the Exercises?

The exercises are intended for use by instructors, unit commanders, and others who wish to provide their students or staff with instruction and practice in the skills needed for strategic thinking. Participants can range from young lieutenants to experienced NCOs, to field grade officers and above.

What Skills Do the Exercises Address?

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) created a set of practical exercises that allow students and Soldiers to strengthen skills that will help them develop into effective strategic thinkers. These strategic thinking exercises adhere to adult learning principles: problem-centered, offer opportunities for interaction with other learners, have immediate relevance to the learner's job, offer opportunities for repetition and deliberate practice, involve feedback to and from both peers and facilitators, and provide opportunities for individual and group reflection. A skilled facilitator can use these exercises in a wide variety of contexts and with leaders from a wide range of echelons. The exercises focus on four skill areas: reflective thinking, questioning and information seeking, making connections across disparate information, and anticipating future states.

Exercise Name	Primary Skill Addressed	Secondary Skills Addressed
<i>Reflecting on the Environment</i>	Reflective thinking	Systems thinking, hypothesis generation
<i>Questioning to Deepen Learning</i>	Questioning, scanning	Systems thinking, synthesis
<i>Telling a Story: An Exercise in Connecting the Dots</i>	Systems thinking, synthesis	Hypothesis generation, cognitive flexibility, sensegiving
<i>Envisioning Potential Futures</i>	Thinking in time/ strategic foresight	Questioning, systems thinking, sensegiving

Many skills are associated with strategic thinking. The primary and secondary skills above were selected because past research indicated that these skills are needed in the Army, not currently addressed well enough, related to other critical skills, applicable to multiple echelons, and amenable to development.

How Can I Use the Exercises?

The exercises are designed to be adaptable for use with a range of participants and in a variety of contexts. Each exercise can be used by itself. Exercises can also be combined for a more comprehensive developmental program. Exercises can be used either as stand-alone activities or as part of field instruction or embedded in a course. Three of the exercises, specifically *Questioning to Deepen Learning*, *Telling a Story: An Exercise in Connecting the Dots*, and *Envisioning Potential Futures*, require a facilitator. The exercise *Reflecting on the Environment* can be implemented with or without a facilitator; thus, this particular exercise can also be used as a self- development activity.

WHY ARE THE SKILL-BUILDING EXERCISES IMPORTANT?

The U.S. Army has recently increased its efforts to enhance the strategic thinking ability of its current and future leaders. The Army needs leaders who can anticipate change, think long-term, and shape the future in a way that aligns with national interests. Research found that many Army personnel feel unprepared for tasks that require strategic thinking. The current effort helps the Army develop highly effective strategic thinkers by focusing on foundational skills and experiences that underpin strategic thinking.

Before Army leaders can be ready to step into positions that require them to think strategically, they need to hone the individual skills and competencies that will allow them to do so. Professional basketball players don't just play a lot of basketball. They practice component skills such as ball-handling, jump shots, rebounding, and footwork. Anyone who plays basketball at advanced levels has been running drills and honing these individual skills for many years. Developing one's strategic thinking ability is no different. It requires time, practice, and attention to foundational skills.

Strategic thinking is required to succeed at the strategic level of war. However, strategic thinking is also employed in other contexts; it can happen at any level, by individuals at any rank, and can be practiced at very early stages in a Soldier's career. Just as General Officers can think strategically about how campaigns can be orchestrated to achieve national strategic goals, platoon leaders can think strategically about how their units' actions can have a ripple effect on the broader mission. At the same time, although strategic thinking can happen at any level, the types of tasks requiring strategic thinking skills are likely to expand as individuals advance in rank and responsibility.

Strategic Thinking Competencies

Strategic thinking competencies are needed to successfully engage in the strategic thinking process. The competencies identified by ARI are described below:

Comprehensive Information Gathering	Strategic thinkers continually scan the environment, seek information from disparate sources, suspend judgment and remain open-minded, consider other perspectives, and possess listening and research skills.
Learning	Strategic thinkers are lifelong learners who iteratively test, reflect upon, conceptualize, manage knowledge to gain insights on the environment, and examine their own thinking.
Critical Thinking	Strategic thinkers identify the essential aspects of a situation, question assumptions, ask relevant questions, explain meaningful connections and distinctions, understand nuance, and consider the limits of data.
Innovative Thinking	Strategic thinkers generate creative and novel ideas, concepts, and approaches, independent of conventional norms.
Thinking in Time	Strategic thinkers understand historical and contemporary contexts, recognize patterns, forecast possible futures, and anticipate second- and third-order effects.
Systems Thinking	Strategic thinkers use a holistic perspective of the dynamic and complex environment to identify interrelationships and integrate disparate factors into a comprehensive whole.

Strategic Thinking Enablers

Strategic thinking enablers help the strategic thinking process (e.g., knowledge of a particular global region) but are not essential for the strategic thinking process itself. Each of the strategic thinking enablers identified by ARI is described in the table below:

Knowledge	Strategic thinkers draw on a foundation of knowledge that is based on several disciplines (e.g., geo- politics, world religions/cultures, economics, technology, sociology) and a specific strategic environment (e.g., local/regional customs, history, stakeholders).
Collaboration	Strategic thinkers are aware of their inherent individual limitations and time constraints. Consequently, they leverage the capabilities of others in a team or informal network (e.g., through cooperation, leadership, building trust, conflict management).
Communication	Strategic thinkers communicate candidly and effectively in multiple media (oral, written, visual) to gain individual understanding. They can tailor their messages to persuade diverse audiences, which is required to implement strategy.
Emotional Regulation	Strategic thinkers are intellectually humble and account for their own natural limitations and biases related to emotion, perspective, and self-interest. At the same time, they maintain respect for differing values and priorities.

STRATEGIC THINKING SKILL-BUILDING EXERCISE
REFLECTING ON THE ENVIRONMENT

**STRATEGIC THINKING SKILL-BUILDING EXERCISE
REFLECTING ON THE ENVIRONMENT**

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REFLECTING ON THE ENVIRONMENT FACILITATOR EXERCISE GUIDE

Exercise Purpose

This exercise provides practice in using reflective thinking to enhance learning, and in asking oneself a range of questions to promote deep reflective thinking. Reflective thinking refers to the thinking and judgments that occur during the process of “stepping back” from a situation to think critically and deeply about the experience. Thinking critically before, during, and after an event provides an opportunity to develop greater understanding of both the self and the situation and inform future encounters with similar situations. This exercise also addresses systems thinking and hypothesis generation.

Estimated Run Time

This exercise will take approximately 2 to 2-1/4 hours. To reduce the length of the exercise, certain portions of the exercise can be conducted as homework or on one’s own time.

Summary of the Exercise

- Participants reflect on a recent experience that involved an element of surprise or did not turn out the way they expected.
- Participants are prompted to ask themselves questions that focus on aspects of reflective practice, including reflective thinking on content, process, and premise (i.e., what, how, and why).
- Then, participants work with others to describe what they considered, to pose additional questions, and to reflect collectively.

Learning Objectives

Participants will learn to:

- Appreciate the importance of reflective thinking for continuous learning and strategic thinking.
- Recognize the value of different types of questions for yielding unique types of information.
- Demonstrate greater ease in reflecting on an experience.
- Appreciate reflective thinking as an opportunity to identify connections and inter-relationships that may not otherwise be apparent.
- Recognize when and how to use iterative reflective thinking in daily operations to support continuous learning and improved strategic thinking.

Relation to Other Exercises

This exercise works well as the first exercise, prior to *Questioning to Deepen Learning*, *Telling a Story*, and *Envisioning Potential Futures*. It is less complex than the other three activities and provides a good starting point. It also allows participants to practice and discuss reflective thinking, an activity that is embedded in all of the exercises.

Materials Needed (Facilitators)

- This exercise does not require a facilitator; it can be conducted individually. However, it can also be conducted with a facilitator and in a group setting.
- Whiteboard and markers
- One *Participant Exercise Aid* for each participant (provided in this packet)

Materials Needed (Participants)

- *Participant Exercise Aid* (provided by facilitator)
- Pen/pencil
- Notebook or paper

Facilitator Tips and Guidance

- Reassure participants that confusion can be a normal part of the reflective process.
- Remind participants to reflect on *why* events occurred as they did, in addition to *what* and *how* things happened.
- Encourage participants to use different types of reflective questions to achieve progressively deeper levels of learning.
- Encourage participants to engage in reflective thinking on their own or with a mentor or group of peers.


If participants are unable to recall an operational situation:

- It is acceptable for them to work with a surprising situation from their personal history instead.
- Although reflecting on an operational situation will provide added value, the most important part of the exercise is that participants gain practice in reflecting (on any experience) and using different types of questions to drive learning.

REFLECTING ON THE ENVIRONMENT SAMPLE FACILITATOR SCRIPT


The next several pages provide step-by-step instructions for facilitating the exercise, along with some sample facilitator language. The sample language is intended as only a starting point, particularly for those with limited facilitation experience. Facilitators should adapt the language offered here to make it their own.

Several of the steps in this exercise are noted with the following icon: . This icon denotes activities participants can conduct as homework outside of the classroom, in order to reduce the length of in-class time required for the exercise.

If you choose to do all (or most) of the activities *within* the classroom setting, we have noted natural break points in the exercise that could be used to divide the exercise over multiple sessions. Those are indicated using this icon: .


Although facilitators should adapt language and adjust the amount of time spent on various activities, we do recommend that facilitators include all the activities and follow the sequence indicated here in order to achieve the learning objectives.

Step	Sample Language
1. EXERCISE SET UP (35-45 minutes)	<i>Today we are going to practice our reflective thinking skills.</i>
1.1 Distribute and describe the Participant Exercise Aid	<p>→ <i>This aid contains information that you will use throughout the exercise. I'll let you know when you need to turn to a particular section.</i></p> <p><i>Also, this aid is something you can take with you after the exercise. It has some information in it about the reflective thinking skill we're practicing in the exercise, why it is important for strategic thinking, and some tips to help you in applying the skill later.</i></p>
1.2 Conduct pre-exercise reflection	<p>→ <i>Before we get started with the exercise, I'd like us to take a few minutes to do some thinking. Please flip to the Pre-Exercise Reflection section of your exercise aid.</i></p>
Refer participants to <i>Pre-Exercise Reflection</i> in their exercise aid.	


Step	Sample Language
Ask them to reflect individually on questions posed. 	→ <i>Take a few minutes to think about the questions posed there. Then we will discuss them as a group.</i>
Discuss responses as a group.	→ [Facilitate discussion around the following questions] <ol style="list-style-type: none"> 1. <i>When are you most likely to engage in reflective thinking? Why?</i> 2. <i>How do you engage in reflective thinking?</i> 3. <i>Think about times when you engage in reflection. What helps you move into a reflective mode?</i> 4. <i>Is there a particular person (or more than one person) who helps you think reflectively—someone you tend to use as a sounding board? What is it about that particular individual?</i> 5. <i>How do you expect reflective thinking to help you? What will you gain from reflective thinking?</i>
1.3 Provide brief tutorial to participants Adapt content as needed. ¹	→ [See tutorial slides.]
1.4 Provide <i>Participant Exercise Overview and Tips</i> Emphasize the exercise is about <u>practicing</u> skills important for strategic thinking.	→ <i>As we just discussed in the brief tutorial, the ability to learn from past and current situations, and to apply that learning to the decisions you make about future situations, is important to becoming an effective strategic thinker.</i> <i>Reflecting upon and learning from past situations is what this exercise is about.</i> <i>Before we move into the exercise itself, I'd like to emphasize that what we're doing today is <u>practicing</u> a skill that is important for strategic thinking. This exercise is not about learning new concepts. It's not about making sure you can define reflective thinking. Rather, it is about practicing a skill – reflective thinking – that is important for strategic thinking.</i> <i>This exercise, by itself, is not going to transform you into an expert strategic thinker. Developing the ability to think strategically takes a considerable amount of time, exposure to relevant experiences, a strong conceptual knowledge base, and a lot of practice.</i>

¹ The facilitator may choose to give the tutorial verbally, print out the tutorial for participants, project the content in PowerPoint, or some combination thereof.

Step	Sample Language
Provide an analogy.	<p data-bbox="915 207 1934 305"><i>So, you may want to think of this exercise as an activity that will help you learn to crawl, before you can learn to walk, and before you can ultimately learn to run and be a skilled strategic thinker.</i></p> <p data-bbox="915 350 1923 412">→ <i>Another way to think about this exercise is akin to what young athletes experience on their way to becoming exceptional athletes.</i></p> <p data-bbox="915 457 1934 555"><i>A basketball player practices component skills such as dribbling, passing, lay-ups, and shooting free throws. Practicing these component skills – and doing so repeatedly and over time – is essential to becoming a skilled basketball player.</i></p> <p data-bbox="915 600 1923 698"><i>In the same way, what we’re doing today is a drill to help you practice the skill of reflective thinking. Reflective thinking is just one (of many) skills you will need to be a powerful strategic thinker.</i></p> <p data-bbox="915 743 1923 873"><i>Also, remember that athletes don’t become great overnight. They have to practice over and over to develop the skills they need. This is the same with strategic thinking. We need to practice repeatedly the component skills necessary for being a great strategic thinker.</i></p>
Describe the activity.	<p data-bbox="915 922 1881 1088">→ <i>To practice the skill of reflective thinking today, I’m going to ask you to identify a recent event or situation that went differently than you expected. Then you will consider a set of questions to help prompt your thinking about that situation. The questions will help you to think in greater depth about what happened, how it happened, and why it happened.</i></p>

Step	Sample Language
2. IDENTIFY AND REFLECT ON SITUATION (Individual Activity)  (30 minutes)	
2.1 Ask participants to recall a recent operational situation or event that went differently than expected² This can be an individual situation or event or one shared by everyone in the group.	<p>→ <i>I'd like you to start by thinking about a recent operational situation or event that did not go as expected.</i></p> <p><i>It should be an event you were personally involved in, rather than one you heard about secondhand.</i></p> <p><i>This can be a situation in which the outcome was worse than expected or one where things turned out better than expected.</i></p> <p><i>The situation should be vivid enough in your memory that you can recall specific details.</i></p> <p><i>Later in the exercise, you will be describing your event to others. So make sure you select an event that you will feel comfortable sharing.</i></p>
2.2 Refer participants to <i>Starter Questions</i> in the exercise aid	<p>→ <i>Please take a look at the Starter Questions section in your exercise aid. You will see a set of questions that can help prompt your thinking.</i></p>
2.3 Ask participants to work independently to reflect on the event, using the starter questions in the exercise aid	<p>→ <i>Working on your own, spend 20-25 minutes thinking about what contributed to the situation unfolding in the way it did.</i></p> <p><i>Use the starter questions provided in the exercise aid to prompt your thinking. Don't feel limited to these questions. If other ideas occur to you, feel free to explore them. Be sure to spend time on each type of reflection:</i></p> <ul style="list-style-type: none"> • <i>The first set of questions will help you reflect on <u>content</u> – the description of what happened.</i>

² If participants are unable to recall an operational situation that went differently than expected, it is acceptable for them to work with a surprising situation from their personal history instead.

Step	Sample Language
	<ul style="list-style-type: none"> • The second set of questions will help you reflect on <u>process</u> – the explanation of how the event unfolded. • The third set of questions will help you think about <u>premise</u> – the consideration of why the event happened and the assumptions you held about the situation. <p>As you reflect on the event and answer the questions, please jot down some notes so you can share what you thought about with others later in this exercise.</p>
<p>3. PARTICIPANTS SHARE REFLECTIONS (Small Group Activity) (25-30 minutes)</p> <p>3.1 Have individuals pair up with one or two other people</p> <p>3.2 Ask each participant to briefly describe the situation or event they experienced to others in their group</p> <p>Participants should do this in 3 minutes or less.</p> <p>3.3 Ask each participant to describe their responses to the reflection questions</p>	<p>→ Now that you have each spent some time reflecting on your situation or event, I'd like you to pair up with one or two other people to discuss the event. The discussion will focus on what each of you considered and learned so far as you've reflected on the situation that went differently than you expected.</p> <p>→ First, take turns and describe the situation or event that you reflected on to the other person(s) in your small group. You should spend just a few minutes doing this.</p> <p>→ Then, I'd like each of you to describe how you answered the reflection questions about that situation or event. Take the questions one at a time so that each person has a chance to share his/her responses. [Plan on spending 10-15 minutes on this portion.]</p> <p>As others present their reflections, ask additional questions of the presenter or provide comments that build on their interpretation and reflection. Maybe you see a relationship that the presenter hasn't mentioned, or maybe you have a clarifying question. Your questions should focus on helping the presenter reflect more deeply on the event and consider additional connections that they may not have considered.</p>

Step	Sample Language
4. EXERCISE DEBRIEF (Group Activity) (25-30 minutes)	<i>We are now going to spend some time thinking about what we have done and learned in this exercise.</i>
4.1 Refer participants to <i>Exercise Debrief</i> in the exercise aid	<i>→ Please turn to the Exercise Debrief section of your exercise aid, and take a look at the debrief questions.</i>
4.2 Ask them to consider each of the questions and write notes in response to them	<i>→ First, please take about 5-10 minutes to think through each of these questions individually and jot down some notes. After you've had a chance to work with the questions individually, we are going to discuss them as a group.</i>
4.3 Facilitate group discussion of the questions	<i>→ I'd like to now spend some time discussing each of these questions as a group. [Facilitate discussion of the following questions.]</i> <ol style="list-style-type: none"> 1. <i>How has your understanding of the situation changed?</i> <ul style="list-style-type: none"> • <i>Are there particular aspects of the situation that you now understand more clearly?</i> • <i>What have you learned or become aware of that hadn't occurred to you before?</i> • <i>Are there particular points of view that you hadn't previously considered or appreciated in the same way you do now?</i> • <i>Are there alternative actions you hadn't previously considered that you now realize you could have?</i> • <i>Are there certain connections and inter-relationships at play in this situation that you hadn't previously recognized that you do now?</i> • <i>What else have you gained from reflecting on the situation?</i> 2. <i>Think about the different types of questions (content, process, and premise questions) you considered. How might different types of questions contribute to deeper insights?</i> 3. <i>Do you see any drawbacks to reflection? That is, can a person be too reflective?</i> 4. <i>In what ways do you anticipate using reflective thinking in your daily operations? What might get in the way of reflection? Do you have ideas for how you might address those obstacles?</i> 5. <i>Do you think you engage in enough reflective thinking?</i> <ul style="list-style-type: none"> • <i>If not, how might you engage in reflective thinking more often?</i> • <i>How might you balance quantity vs. quality of reflection?</i>



Reflecting on the Environment

Exercise Overview

What's the purpose of this exercise?



- **Primary Purpose:** To provide practice in using reflective thinking to promote continuous learning.

Reflective Thinking – The process of stepping back from a situation to think critically and deeply about the experience.

Thinking critically before, during, and after an event provides an opportunity to develop greater understanding of both the self and the situation and inform future encounters with similar situations.

- **Secondary Purpose:** To help you recognize how to use reflective thinking in daily operations to enhance learning and strategic thinking.

Image credit: shutterstock.com

The exercise will also help you practice these additional skills:

- **Systems Thinking** – Recognizing and describing relationships and interdependencies among factors that might otherwise appear unrelated.
- **Hypothesis Generation** – Creating potential explanations for a given set of information.

What will I do in the exercise?

Identify a recent situation or event that did not go as you expected.

Reflect on the event, using starter questions as an aid.

Share your reflection with one or two other participants.

Engage in a group discussion.



What will I gain from this exercise?

By the end of the exercise you should be able to:

- **Appreciate the importance of reflective thinking for continuous learning** and as a foundational skill for strategic thinking.
- **Recognize the value of different types of questions** (content, process, and premise questions) for yielding unique types of information and for achieving progressively deeper levels of learning.
- **Demonstrate greater ease in reflecting on an experience** by examining what happened, how it happened, and why it happened – and what that means for future actions.
- **Appreciate reflective thinking as an opportunity to identify connections** and interrelationships that may not otherwise be apparent.
- **Recognize when and how to use iterative reflection in daily operations** to support continuous learning and improved strategic thinking.



Reflecting on the Environment

Brief Tutorial

How does reflective thinking help us develop as strategic thinkers?

Reflective thinking

- involves critically examining an experience to gain greater insight into the dynamics of a situation and our role in it.
- allows us to discover connections, interrelationships, and underlying assumptions.
- helps us get smarter and transfer our learning to future events.
- can happen before, during, and after an event.

WHAT'S HARD?

Multiple factors can inhibit reflective thinking.

- Some people see reflective thinking as something that “happens naturally” rather than a skill requiring deliberate practice and consistent engagement.
- We tend to focus on **what** happened (content reflection), rather than thinking about **how** it occurred (process reflection) or considering **why** it occurred (premise reflection).
 - Only considering **what** happened can limit the learning possibilities and the insights we discover.

WHAT'S HARD?

Multiple factors can inhibit reflection.

(continued)

- People tend to engage in reflective thinking only **after** an event, rather than **before** and/or **during** an event.
 - This reduces the benefits of reflective thinking and **limits opportunities to learn** and practice reflective thinking skills.
- Individuals often **work alone** when they reflect on events, often by writing about their experiences.
 - Reflective thinking in a **group setting** can provide additional insights and valuable feedback.

WHAT'S HARD?

Multiple factors can inhibit reflection.

(continued)

- Reflective practice requires making the time to engage, which means taking time away from other activities.
- Many leaders lack training in how to promote deep reflective thinking or provide useful feedback on reflective thinking.



Image credit: <http://www.pandwoof.org/wp-content/uploads/2013/05/think.jpg>

Tips for Reflective Thinking

- Ask yourself **different types of questions** (e.g., What? How? Why? Why not? What if? How might?)
- Engage in reflection iteratively – **before** and **during** an event, as well as **afterwards**.
- **Leverage different perspectives** in your reflection activities. Record your reflections and **share and discuss** them with others.
- **Work reflection into your everyday routine.** Reflecting on both personal and work experiences will help build your reflective thinking skills.

REFLECTING ON THE ENVIRONMENT PARTICIPANT EXERCISE OVERVIEW AND TIPS

What's the Purpose of this Exercise?

The purpose of this exercise is to give you practice in reflective thinking. You will spend time reflecting on a recent experience that went differently than expected, answering progressively deeper and more critical types of questions. Specifically, you will practice:

- Using reflective thinking to promote continuous learning.
- Considering different types of questions to achieve progressively deeper levels of learning.
- Using reflective thinking to identify connections and inter-relationships that may not otherwise be apparent.
- Considering when and how you can engage in reflective thinking in daily operations to support learning and improve strategic thinking.

Why Is This Skillset Important for Strategic Thinking?

Reflective thinking promotes progressively deeper insight into situation dynamics and how your actions and assumptions influenced what happened. Reflective thinking supports continuous learning and the transfer of that learning to shape future experiences.

Brief Tutorial

Reflective thinking is the process of stepping back from a situation to think critically and deeply about the experience. Reflective thinking allows you to gain greater insight into the dynamics of a situation and your role in it. It enables you to consider connections and inter-relationships that may not be immediately apparent.

Reflective thinking is most valuable when it is ongoing and iterative. Many people think of reflective thinking as something that happens at the end of an event. In fact, it can be useful *before* and *during* an event as well as afterward.

Tips

You can gain insight from any of your experiences and apply that learning to help improve the future:

- ✓ Ask yourself different types of questions (e.g., What?, How?, Why?, What if?, How might?).
- ✓ Use reflective thinking iteratively and in an ongoing manner. Reflect *before* and *during* an event, as well as *after*.
- ✓ Reflect *before* an event to help you think ahead, mentally rehearse, and anticipate problems.
- ✓ Reflect *during* an event to help identify problems, re-plan, make decisions, and solve problems.
- ✓ Leverage different perspectives in your thinking. Record your reflections, and share and discuss them with others.
- ✓ Work reflective thinking into your everyday routine. Reflect on both personal and work experiences. Practicing reflective thinking by yourself and with others will promote your ability to learn continuously and transfer your learning to future experiences.

Why Is Reflective Thinking Challenging?

Using and fully benefiting from reflective thinking is challenging for a number of reasons. For example:

- Reflective practice requires time, which means taking time away from other activities. It also requires practice to refine your skills.
- When people do think reflectively, the focus tends to be on *what* happened (content reflection) rather than thinking about *how* it occurred (process reflection) or considering *why* it occurred (premise reflection). Focusing only on the superficial description level, or only on one type of questioning approach, can limit the learning possibilities and the insights you discover.

Individuals often work alone when they reflect on an event, which means they miss out on valuable reflective thinking through group discourse.



REFLECTING ON THE ENVIRONMENT PARTICIPANT EXERCISE AID

Pre-Exercise Reflection

Instructions: Today we are going to work on reflective thinking skills. Before we start the exercise, take a few minutes to think about the following questions. After we think about them individually, we will discuss them as a group.

1. When are you most likely to engage in reflective thinking? Why?
2. How do you engage in reflective thinking?
3. Think about times when you engage in reflective thinking. What helps you move into a reflective mode?
4. Is there a particular person (or more than one person) who helps you think reflectively—someone you tend to use as a sounding board? What is it about that particular individual?
5. How do you expect reflective thinking to help you? What will you gain from reflective thinking?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Starter Questions
(Individual Activity)

Instructions: After you have identified and recalled a situation that did not go as you expected, take 15-20 minutes to reflect on the *what* (content), *how* (process), and *why* (premise) of the event.

Use the starter questions below to prompt your thinking, but do not feel limited to only these questions. If other ideas occur to you, feel free to explore them.

Starter Questions	
<p>Content Reflection (describe <i>what</i> happened)</p>	<ul style="list-style-type: none"> • When did this happen? • Where did it happen? • What happened? • Who were the key players in the situation? • What was the environment within which this situation took place? • What situational factors were at play?
<p>Process Reflection (explain <i>how</i> the event unfolded)</p>	<ul style="list-style-type: none"> • How did you/your unit's actions influence the outcome of the situation? How did your actions (or your unit's actions) influence the actions of others? • What was the nature of the surprise? How is what happened in this situation different from what you expected? • What did you look for to give you a sense of how your approach was working? • What questions does the outcome raise for you? • What might you (your unit/your commander/the Army) have done differently in this situation?
<p>Premise Reflection (consider <i>why</i> the event happened and the assumptions you held about the situation)</p>	<ul style="list-style-type: none"> • Why do you think things unfolded the way they did? What makes you think that? • Are there other ways of interpreting the situation? Other perspectives to consider? • Going into the situation, what were your assumptions about the situation and the actions you needed to take? What led you to those assumptions? • Were you expecting a different outcome than the one you experienced? If so, describe the outcome you expected and why you expected that. • How might you have tested or verified the assumptions you held? • How did your personal characteristics (such as your background, your experience, your point of view) affect your decisions and the outcome?

Exercise Debrief

Instructions: Consider the following questions either individually or with others who have participated in the exercise:

- How has your understanding of the situation changed?
- Are there particular aspects of the situation that you now understand more clearly?
- What have you learned or become aware of that hadn't occurred to you before?
- Are there particular points of view that you hadn't previously considered or appreciated in the same way you do now?
- Are there alternative actions you hadn't previously considered that you now realize you could have taken?
- Are there certain connections and inter-relationships at play in this situation that you hadn't previously recognized that you do now?
- What else have you gained from reflecting on the situation?

Think about the different types of questions (content, process, and premise questions) you considered.

- How might different types of questions contribute to deeper insights?
- Do you see any drawbacks to reflective thinking? That is, can a person be *too* reflective?
- In what ways do you anticipate using reflective thinking in your daily operations? What might get in the way of reflective thinking? Do you have ideas for how you might address those obstacles?
- Do you think you engage in enough reflective thinking?
- If not, how might you engage in reflective thinking more often?
- How might you balance quantity vs. quality of reflective thinking?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

STRATEGIC THINKING SKILL-BUILDING EXERCISE
QUESTIONING TO DEEPEN LEARNING

**STRATEGIC THINKING SKILL-BUILDING EXERCISE
QUESTIONING TO DEEPEN LEARNING**

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QUESTIONING TO DEEPEN LEARNING FACILITATOR EXERCISE GUIDE

Exercise Purpose

This exercise provides practice in questioning and scanning. Questioning is an active learning strategy used to understand problems, relevant factors, interdependencies, assumptions, and differing perspectives more deeply. Scanning is identifying and seeking information from disparate sources to answer questions that promote learning. This exercise also addresses systems thinking and synthesis.

Estimated Run Time

This exercise has two phases and will altogether take approximately 4-1/4 hours. To reduce the length of the exercise, certain portions of the exercise can be conducted as homework or on one's own time.

Summary of the Exercise

Using a photo image and brief description of a situation, participants:

- Generate a set of questions about the situation depicted in the image.
- Work in small groups to organize, categorize, and label the questions.
- Develop a plan for where and how to seek information to address the questions and develop a better understanding of the situation depicted in the image.
- Work together as a group to reflect on and discuss the exercise.

Learning Objectives

Participants will learn to:

- Generate a wider variety of questions to support learning and situational understanding, question assumptions, and explore alternative perspectives.
- Recognize characteristics of different types of questions: descriptive, explanatory, and exploratory questions and questions that test fundamental assumptions.
- Appreciate the kinds of information that can be gained from different types of questions.
- Develop ideas for diverse information-gathering activities needed to answer a wide-ranging set of questions.
- Recognize characteristics of powerful questions.

Relation to Other Exercises

This exercise is used best after participants have completed *Reflecting on the Environment* and before *Telling a Story* and *Envisioning Potential Futures*.

Materials Needed (Facilitators)

- Images with brief descriptions (included in the supplemental materials)
 - One copy per participant

- Within a small group, each individual gets a copy of the same image
- Each small group gets a different image
- Whiteboard, markers
- Sticky notes
 - Approximately 30/participant
 - For legibility, these need to be at least 3" x 5" in size
- Room with sufficient wall space to post large sets of sticky notes
- One *Participant Exercise Aid* for each participant (provided in this packet)

Materials Needed (Participants)

- *Participant Exercise Aid* (provided by facilitator)
- Pen/pencil
- Notebook

Facilitator Tips and Guidance

- Remind participants there is no right answer.
- The point of the exercise is not to correctly identify the image, but to learn how to generate useful questions and seek information.
- Quality of questions matters more than quantity.
- Emphasize the importance of getting beyond “what” and “how” questions.
- Emphasize the value of “why,” “what if,” and “how could” questions for gaining deeper insight.

If you choose to use different images for repetition of this exercise, some criteria to consider when selecting images include the following. Images should:

- Reflect action, tension, conflict, change, unrest, challenges, or difficulty.
- Include people (and potentially people of differing cultures), although that is not essential.
- Reflect an immediate problem that might be diagnostic of a larger, more complex problem.


The text description (caption) provided with the image should be very brief (e.g., approximately 10 words or less), and simply provide a glimpse of the context.


If participants get stuck, ask:

- What's going on here? What do we want to know?
- What is the time or place represented in the image?
- What is the mood/tone of the picture?
- How did this situation come to be?
- What relationships does the image suggest (among people, between people and objects, etc.)?
- What is surprising about what's in this image? What is unusual or unexpected?
- What cultural or historical connections does the image suggest?
- If this image were one of a series, what might have been the next image, or the previous image?
- What are the reasons for this situation? What contributed to this situation coming to be?

QUESTIONING TO DEEPEN LEARNING SAMPLE FACILITATOR SCRIPT

The next several pages provide step-by-step instructions for facilitating the exercise, along with sample facilitator language. The sample language is intended only as a starting point, particularly for those with limited facilitation experience. Facilitators should adapt the language offered here to make it their own.


Several steps in this exercise are noted with the following icon: . This icon denotes activities participants can conduct as homework outside of the classroom in order to reduce the length of in-class time required for the exercise.

If you choose to do all (or most) of the activities *within* the classroom setting, natural break points are noted in the exercise that could be used to divide the exercise over multiple sessions. Those are indicated using this icon: .

Although facilitators should adapt language and adjust the amount of time spent on various activities, we recommend you include all the activities and follow the sequence indicated here to achieve the learning objectives.

PHASE I: Generating Questions


Step	Sample Language
1. EXERCISE SET UP (30 minutes)	<i>Today we are going to practice our questioning skills, as well as our skills in seeking information to answer questions.</i>
1.1. Distribute and describe the Participant Exercise Aid	<p>→ <i>This aid contains information you will use throughout the exercise. I'll let you know when you need to turn to a particular page.</i></p> <p><i>Also, this aid is something you can take with you after the exercise. It has information in it about the questioning skills we're practicing in the exercise, why they are important for strategic thinking, and some tips to help you in applying the skill later.</i></p>
1.2. Provide each participant with a marker and a pad of sticky notes	<p>→ <i>I am also distributing supplies we will need for the exercise. You can set these to the side for now.</i></p>

Step	Sample Language
<p>1.3. Conduct pre-exercise reflection</p> <p>Refer participants to the <i>Pre-Exercise Reflection</i> in their exercise aid.</p> <p>Ask them to reflect individually on questions posed. </p> <p>Discuss responses as a group.</p>	<p>→ <i>Before we get started with the exercise, I'd like us to take a few minutes to think about a few things. Please flip to the Pre-Exercise Reflection in your exercise aid.</i></p> <p>→ <i>Take a few minutes to think about the questions posed there. Then we will discuss them as a group.</i></p> <p>→ [Facilitate discussion around the following questions:]</p> <ol style="list-style-type: none"> 1. <i>What do you think makes a useful question?</i> 2. <i>Why is it important to ask questions?</i> 3. <i>Are some questions better than others? In what ways?</i> 4. <i>What makes a question powerful? Can some questions be more powerful?</i> 5. <i>Take a moment and think about questions you might ask that are about tactical or operational issues (e.g., what or how questions). Now think about questions you might ask at a strategic level (e.g., why, what if, how might questions). Write down a few examples of each.</i> <ul style="list-style-type: none"> • <i>How would you describe the differences in the types of questions?</i> • <i>What sort of information are they likely to elicit?</i> • <i>How are the tactical- and operational-level questions different from the strategic-level?</i>
<p>1.4. Provide brief tutorial to participants</p> <p>Adapt content as needed.³</p>	<p>→ [See tutorial slides provided.]</p>

³ Facilitator may choose to give tutorial verbally, print out tutorial for participants, project content in PowerPoint, or some combination thereof.

Step	Sample Language
<p>1.5. Provide Participant Exercise Overview and Tips</p> <p>Emphasize the exercise is about <u>practicing</u> skills important for strategic thinking.</p>	<p>▶ <i>As we discussed in the brief tutorial, part of thinking strategically involves the ability to learn continuously. Active learners ask insightful and powerful questions and find answers to those questions. This is what we are going to be practicing today.</i></p> <p>▶ <i>Before we move into the exercise itself, I'd like to emphasize that what we are doing today is <u>practicing</u> a skill that is important for strategic thinking. This exercise is not about learning new concepts. It is not about making sure you can define what questioning is. Rather, it is about <u>practicing</u> a skill – asking questions and finding answers to those questions – that is important for strategic thinking.</i></p> <p><i>This exercise, by itself, is not going to transform you into an expert strategic thinker. Developing the ability to think strategically takes a considerable amount of time, exposure to relevant experiences, a strong conceptual knowledge base, and a <u>lot</u> of practice.</i></p> <p><i>So, you may want to think of this exercise as an activity that will help you learn to crawl before you can learn to walk and before you can ultimately learn to run and be a skilled strategic thinker.</i></p>
<p>Provide an analogy.</p>	<p>▶ <i>Another way to think about this exercise is akin to what young athletes experience on their way to becoming exceptional athletes.</i></p> <p><i>A basketball player practices component skills such as dribbling, passing, and shooting free throws. Practicing these component skills – and doing so repeatedly and over time - is essential to becoming a skilled basketball player.</i></p> <p><i>In the same way, what we're doing today is a drill to help you practice a couple of skills. Questioning and scanning are just two (of many) skills you will need to be a powerful strategic thinker.</i></p> <p><i>Also, remember, athletes don't become great overnight. They have to practice over and over to develop the skills they need. This is the same with strategic thinking. We need to repeatedly practice the component skills necessary for being a great strategic thinker.</i></p>

Step	Sample Language
Describe the activity.	<p>▶ <i>To practice the skill of questioning, we are going to work with an image [hold up some examples]. I will give you one in a minute.</i></p> <p><i>When I give you the image, your task is to work individually to examine it and to spend 10-15 minutes generating questions about the situation or event represented by the image. You will write each of your questions on the sticky notes that I passed out earlier.</i></p> <p><i>As you develop questions, it is important to generate a variety of types of questions. For example, you may develop some descriptive questions (who, what, when, where). But it is also important that you develop explanatory questions, exploratory questions, or questions that help you test assumptions. Also generate questions about a range of topics – for example, questions about political issues, economic issues, security issues, social issues, and other topics.</i></p> <p><i>The questions you develop should be ones that, when answered, will help you better understand the situation presented in the image.</i></p> <p><i>Remember this exercise is about questions, not about answers and solutions. You should not be concerned with coming up with solutions to the situation presented in this picture. Your focus should be on generating questions.</i></p> <p><i>Parts of this exercise may feel uncomfortable. You may find it a challenge to generate questions without a lot of information. But, being able to ask smart questions in the midst of uncertainty is part of what we experience in real world operational settings, so it is important to practice.</i></p>

2. PARTICIPANTS GENERATE QUESTIONS 
(Individual Activity)
 (25 minutes)


2.1. Ask participants to form small groups

▶ *At this time, I'd like you to form small groups of three to four people. Even though you're not going to be working directly with your small group yet (you're going to be working by yourself for the first part of the exercise), I need to know your small group so I can decide which image to give each of you.*

Step	Sample Language
2.2. Refer participants to <i>Question Generation</i> in their exercise aid	<p>→ <i>Before I pass out the images, please flip to the Question Generation section in your Participant Exercise Aid. There you will find information to help stimulate your thinking as you examine your image and ensure that you develop a variety of questions.</i></p>
2.3. Distribute the images and ask participants to begin generating questions Every person within a small group should have the same image, but their own copy. Each small group should have a different image. ^{4, 5}	<p>→ <i>I'm going to pass out the images now so you can get started.</i></p> <p><i>Spend 15-20 minutes working by yourself; examine the image and generate questions about the situation or event represented in the image.</i></p> <p><i>Think about:</i></p> <ul style="list-style-type: none"> <i>What do you want to know about the image that will help you understand the situation/event that it represents?</i> <i>What are the questions we would need to ask and answer to understand the problems or circumstances reflected in this picture?</i> <p><i>Use the sticky notes to record your questions as you think of them. Use a separate sticky note for each question.</i></p>
3. MID-EXERCISE REFLECTION (Individual Activity) (10 minutes)	<p><i>Let's spend a few minutes thinking about what we have done so far in this exercise.</i></p>
3.1. Refer participants to the <i>Mid-Exercise Reflection</i> in their exercise aid	<p>→ <i>See the Mid-Exercise Reflection in your exercise aid. Some of the questions I'd like you to think about are:</i></p>
3.2. Ask participants to jot down their responses to the questions	<p>→</p> <ul style="list-style-type: none"> <i>What are you finding challenging about developing questions?</i> <i>How much variety do you see in your questions? Do you have one type of question? If you do, what accounts for that?</i>

⁴ You can use the images provided, or choose an alternative image. See *Facilitator Exercise Guide* for image selection criteria. Different images can be used to repeat the exercise.

⁵ When passing out the images, be aware that the image could trigger PTSD for someone. If you see this happening, stop the exercise and address the issue.

Step	Sample Language
	<ul style="list-style-type: none"> • <i>Was it harder to come up with some types of questions than others?</i> • <i>Are there certain questions that seem better—more useful, more likely to help you understand the situation? Are some questions more powerful?</i> • <i>Pick your three best questions and put a check mark on those sticky notes. What makes them useful? What distinguishes them from your other questions? Think about changing the architecture, the scope, and/or the meaning/context of the questions. Can we make them more powerful?</i> <p><i>While working individually, please consider the questions provided in this worksheet and write your responses.</i></p>
<p>4. QUESTION REVIEW (Group Activity) (45 minutes)</p> <p>4.1. Post each of the images on the wall</p> <p>4.2. Ask participants to post questions on the wall</p> <p>Participants should post their questions next to the image they examined.</p> <p>4.3. Ask participants to review the questions on wall</p> <p>As participants review the questions on the wall, have them think about the similarities and differences among the questions.</p>	<p><i>Now we are going to take a step back and look at all the questions we've generated.</i></p> <p>→ <i>To get us started, I've posted all the images that the full group has been working with on the wall.</i></p> <p>→ <i>What I'd like you to do is gather all your sticky notes and put them up on the wall near the image you have been working with. You can post them in any order. Let's just get them all up there so we can see what we have.</i></p> <p>→ <i>I'd like you to take 5-10 minutes to walk around and take a look at all the questions. As you look over the questions, think about the nature of the questions. How are they similar? How are they different?</i></p> <p><i>Also, think about which questions are common and which are less frequent.</i></p> <p><i>You may need to look past the specific language; people may ask the same question but use somewhat different words.</i></p> <p><i>Now we're going to spend time talking about the collection of questions in more detail – what's here, what isn't, and what that means for understanding the situations represented in the images.</i></p>

Step	Sample Language
<p>4.4. Refer participants to the <i>Question Review</i> in their exercise aid</p>	<p>→ <i>Take a look at the Question Review section of your exercise aid. This section has some questions we'll use in our discussion. Take a minute to look these over.</i></p>
<p>4.5. Have participants review questions on sticky notes while considering questions in <i>Question Review</i> aid</p>	<p>→ <i>Also, take another look at the collection of questions. As we answer the questions in the aid, you may be tempted to move and arrange the questions into categories. We're going to do that in a little bit. For now, just look at the individual questions and think about them.</i></p>
<p>4.6. Facilitate discussion using the <i>Question Review</i> aid</p> <p>As facilitator, point out some of the questions that stand out to you, and comment on the variety of types of questions.</p>	<p>→</p> <ul style="list-style-type: none"> • <i>What are some of the most common questions?</i> • <i>Are there questions that only one or a few people asked? Do these questions suggest a different way of thinking about the situation represented by the image?</i> • <i>Which questions:</i> <ul style="list-style-type: none"> ○ <i>Are future-oriented or consider future implications, if any?</i> ○ <i>Are broader than others? Consider relationships or interactions?</i> ○ <i>Test assumptions?</i> ○ <i>Reveal paradoxes?</i> ○ <i>Consider hypotheticals?</i> ○ <i>Seek an explanation of what contributed to the current set of circumstances?</i> ○ <i>Touch on a deeper meaning?</i> ○ <i>Evoke more questions?</i> • <i>Are there any questions that surprise you? Why?</i> • <i>Do you see any questions that didn't occur to you and you thought, "That's a GREAT question"?</i> • <i>Do you wonder about the purpose of any questions, for example, "Why would he want to know about X"? How so?</i> • <i>Which questions do you think are the most useful/critical to your understanding of the problem? Why?</i> • <i>Are there gaps? Are there questions that are missing, that seem important? (If so, add them.)</i> • <i>Did some of your questions help you think of other questions to ask? Which ones?</i> • <i>How much variety do we have? Do you see a lot of one type of question? For example, descriptive questions (what/where/who) vs. explanatory (how/why) vs. exploratory (what if, how might)? If we seem to have a lot of one type of question, what accounts for that?</i> • <i>Do your questions reflect different topics/factors or tend to emphasize one or two? Why?</i>

Step	Sample Language
<p>5. CLUSTERING AND SYNTHESIS (Group Activity) (20 minutes)</p>	<p><i>We are now going to spend time doing a clustering and synthesis activity, which is going to let us get to a big picture view of the questions we have for each image.</i></p>
<p>5.1. Group the questions</p> <p>Have participants work in their small groups to group the questions associated with their image.</p>	<p>→ <i>First, I'd like you to find the people who are in your small group, and gather around the image you examined and generated questions for. Working with your group, organize the set of questions on the wall surrounding your image. Cluster the questions based on similarity. This can feel a bit like a free-for-all at the beginning, but just start moving sticky notes around, work as a group, talk about what goes where and why.</i></p> <p><i>There is no right or wrong way to group the questions. There are likely multiple ways to do it. The good thing about using sticky notes is you can cluster things one way and then decide it makes sense to re-arrange and cluster them in a different way. That is okay, and I encourage you to do that. This should be an iterative process. Once your small group agrees about the question groupings that are up there, let me know.</i></p>
<p>5.2. Label the groups</p> <p>Ask the group to work together to develop a descriptive label for each of the clusters of questions.</p>	<p>→ <i>Now what you are going to do is work together to come up with a descriptive label for each cluster. The label can be a word or a brief phrase that identifies the questions in that group. You could also think of an objective you are trying to achieve with the questions in a particular cluster.</i></p> <p><i>What we are doing in this part of the exercise is creating a set of categories that represent dimensions or aspects of questioning about the situation represented in each image.</i></p>
<p>5.3. Review other groups' clusters</p>	<p>→ <i>Now that we have finished labeling the clusters of questions, I'd like everyone to spend a few minutes reviewing the clusters and categories developed by the other small groups about their images. As you do a gallery walk, consider:</i></p> <ul style="list-style-type: none"> • <i>How are the question types or clusters developed by other small groups similar to the questions you developed about your own image?</i> • <i>How are they different?</i> • <i>What might account for the differences in the questions posed?</i>
<p>5.4. Organize groups based on inter-relationships (Small Group Activity)</p>	<p>→ <i>I'd like you to work in your small groups and consider whether you can organize the question groups in a way that depicts their relationships. How are the question categories you developed related to one another? What is connected to what, and why? If it helps you to sketch those relationships, that's great.</i></p>

Step	Sample Language
	<p><i>Questions can be inter-related on a number of different dimensions. Work together to determine these dimensions.</i></p> <p>5.5. Have each small group briefly describe the inter-relationships → <i>I'd now like one person from each small group to describe to the larger group how the questions are related to one another. Just take a minute or two at most.</i></p> <p>5.6. Group discussion → <i>What was challenging about this portion of the exercise: grouping the items and labeling them?</i></p> <p><i>In what ways do you find yourself thinking about the image and the situation it represents compared to at the start?</i></p>
<p>6. REFLECTION AND DEBRIEF (Group Activity) (15 minutes)</p> <p>6.1. Refer participants to the <i>Reflection and Debrief</i> section of the exercise aid</p> <p>6.2. Pose questions for group discussion⁶</p>	<p>→ <i>We are going to spend time thinking about the exercise we just conducted. Look at the Reflection and Debrief section of your exercise aid. I'd like us to think and talk together about these questions.</i></p> <p>→ • <i>What have you learned from this activity? What are your big takeaways?</i> • <i>How has this activity helped you identify questions you would not have otherwise asked?</i> • <i>Think about the questions you identified earlier as your three best/most useful questions. Do you still see them that way? Why/why not? What characterizes these questions? What makes them the best/most useful?</i> • <i>What have you learned about how to ask questions that will help you gain a deeper understanding of the problem meaning?</i> • <i>How can you use what you learned so far in your work?</i></p>




⁶ It can be valuable for participants to repeat Phase 1 multiple times on several occasions (iterative practice). After participants have gained substantial practice in generating questions, the facilitator can add Phase 2 to challenge participants further. The Phase 2 activities build on the individual questions and clusters/categories the group developed. If it's not possible to leave sticky notes in place, take photos of each cluster to use in the Phase 2 exercise.

PHASE 2: Planning for Information Gathering⁷

Step	Sample Language
<p>1. IDEA GENERATION (Individual Activity) (30 minutes)</p>	
<p>1.1 Provide the <i>Brief Tutorial: Phase 2, which is part of the Participant Exercise Aid</i></p>	<p><i>[See tutorial slides provided.]</i></p>
<p>Adapt content as needed.⁸</p>	<p><i>Now that we have spent time generating questions about the images, we are going to generate ideas for how to find answers to those questions.</i></p>
<p>1.2 Break the participants into small groups</p>	<p>→ <i>I'd like you to reconvene into your small groups. Each group is going to work with the set of questions generated for your image. Please take a few minutes to review each of the questions generated about the image.</i></p>
<p>1.3 Assign categories to individuals</p> <p>Refer each small group to the categories of questions identified for their image in Phase 1, Step 5.</p>	<p>→ <i>Once you've done that, I'd like each individual in your small group to select one or two question categories to work with in this next phase of activities. It might be easiest to have one person in your small group assign each person their categories.</i></p>
<p>1.4 Refer participants to <i>Planning for Information Gathering</i> in their exercise aid</p>	<p>→ <i>Now, please flip to <i>Planning for Information Gathering</i> in your exercise aid and review the questions listed there.</i></p>

⁷ Depending on time available and amount of time taken in Phase I, Phase II (*Planning for Information Gathering*) could be included as an activity in Phase I, Step 6, but a break will be necessary.

⁸ The facilitator may choose to give the tutorial verbally, print out the tutorial for participants, project the content in PowerPoint, or some combination thereof.

Step	Sample Language
<p>1.5 Generate information-gathering ideas  (Individual Activity)</p> <p>Ask participants to work individually to generate ideas for how they would seek answers to the questions in their assigned categories. Ask them to consider unusual ideas for information searching, so they do not just name the usual sources.</p>	<p>→ <i>Now that everyone has one or two question categories to work with, please work individually to review the set of questions contained in your assigned categories. Spend 10-15 minutes thinking about how and where you would seek answers to those questions. Use the Planning for Information Gathering worksheet to help you with this activity.</i></p>
<hr/>	
<p>2. SMALL GROUP DISCUSSION</p>	
<p>(20 minutes)</p>	
<p>2.1 Share information-gathering ideas</p>	<p>→ <i>Now that you have spent time thinking about this on your own, work with your small group and share the ideas you generated. We'll share these ideas later in the larger group, so figure out a way to keep track of the ideas your group generates.</i></p>
<p>2.2 Refer participants to <i>Small Group Discussion</i> in the exercise aid</p> <p>Have them discuss questions posed in the exercise aid.</p>	<p>→ <i>Once everybody in your group has offered his/her ideas, please take a look at the questions in the Small Group Discussion part of your exercise aid and discuss your responses as a group.</i></p>

Step	Sample Language
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3. PRESENT INFORMATION-GATHERING PLANS
(30 minutes)

3.1 Ask each small group to designate a spokesperson

→ *Now, we are going to have a representative of each group present your group’s ideas to the rest of us. So, each group should figure out a spokesperson and spend a couple of minutes pulling together the ideas your spokesperson will share.*

We are going to want to know the categories of questions you were working with and the ideas for seeking answers you came up with.

3.2 Spokesperson presents plan to the larger group

→ *Now, let’s start with the first small group. Please tell us about the ideas you’ve generated for answering the questions about your images.
[repeat for each of the small groups]*

Encourage others to ask questions and build upon one another’s ideas.

4. FINAL REFLECTION and DEBRIEF
(15-20 minutes)

We are now going to spend time thinking about what we have done in this exercise. Flip to the Final Reflection in your exercise aid.

4.1 Refer participants to *Final Reflection* in the exercise aid

→ *First, I would like you to spend 5-10 minutes thinking about the questions posed in the Final Reflection part of your aid. Jot down some notes in response to the questions.*

4.2 Have participants reflect on the questions individually

→ *Now that you have considered these questions individually, let’s talk about them as a group.*

- *What was difficult about coming up with ideas about how to find answers to your questions? What made it difficult? Was it more difficult to find information for certain questions?*

4.3 Facilitate group discussion with the full group of participants

→

- *What information sources or information seeking methods did others mention that you had not thought of? Which suggestions gave you new ideas about how you might gather information to answer the questions?*
- *Which types of questions are fairly easily addressed, and which are harder to figure out where or how to get information to address them?*
- *If we hadn’t done what we did in Phase 1, generating all the questions, how might your search for information have been different? What might you have missed?*
- *Think for a moment about both phases of this exercise (i.e., generating questions and developing a plan to answer them). What have you learned? How might you apply what you learned to your current role? Or to future roles?*



Questioning to Deepen Learning

Exercise Overview

What's the purpose of this exercise?

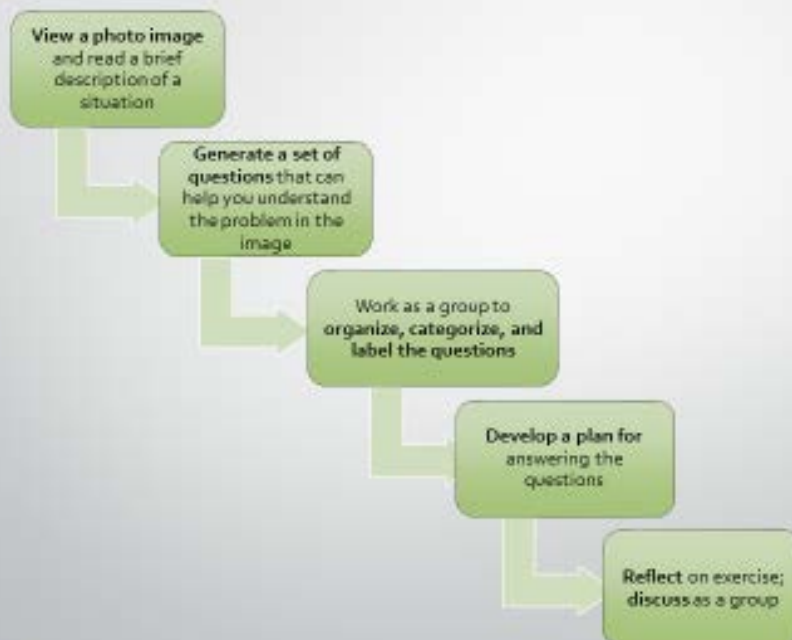


- **Primary Purpose:** to build your **questioning** skills.
Questioning – a learning strategy that can be used to understand problems, relevant factors, interdependencies, assumptions, and differing perspectives more deeply.
- **Secondary Purpose:** to practice generating ideas for how to answer questions.

The exercise will also help you practice these additional skills:

- **Systems thinking** – recognizing and describing relationships and interdependencies among factors that might otherwise appear unrelated.
- **Synthesis** – integrating seemingly disparate pieces of information into a coherent whole.

What will I do in the exercise?



What will I gain from this exercise?

By the end of the exercise, you should be able to:

- **Generate a wider variety of questions** to deepen learning, enhance situational understanding, identify challenges, question assumptions, and explore alternative perspectives.
- **Recognize characteristics of different types of questions:** descriptive, explanatory and exploratory questions, or questions that test fundamental assumptions.
- **Appreciate the kinds of information that can be gained** from different types of question.
- **Develop ideas for diverse information-gathering activities** needed to answer a wide-ranging set of questions.

Questioning to Deepen Learning: Phase I Brief Tutorial

Why Does Questioning Matter? Questioning skills are a key building block to developing our strategic thinking abilities

- Strategic thinkers are active learners.
- Questioning can take us beyond information-gathering by...
 - Promoting critical thinking and deep learning.
 - Helping us identify and challenge assumptions.
 - Can create, reinforce, alter, or destroy assumptions.
 - Allowing us to explore alternative perspectives.



What's hard about insightful questions?

- We tend to have a set of questions we typically ask (depending on our role, education, experience) and rarely move beyond those questions.
- We often want to identify solutions quickly in order to move to action; we do not take the time to explore the problem.
 - May end up with solutions that do not address the underlying problem.
 - Do not develop advanced skills at asking questions that lead to deeper understanding.

What's so hard about insightful questions ? (continued)

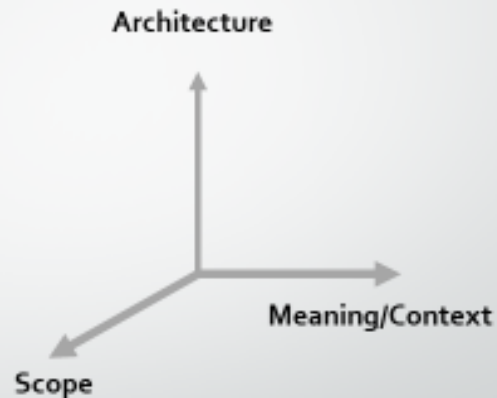
- We often start with a pre-determined view of the problem; we only look at it one way.
- Questions we pose may be too narrow – focused on a small portion of the problem, and, therefore, provide limited information.



Three Dimensions of Powerful Questions

Powerful questions are defined by three dimensions:

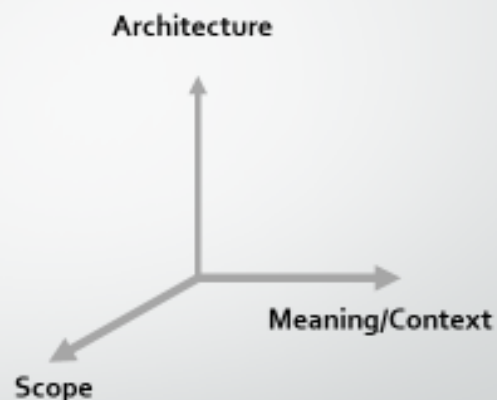
- **Scope**
- Greater scope: encompass more people, more volume, more time, or more concerns
- **Meaning/Context**
- Challenge assumptions
- Generate energy and encourage exploration
- Touch a deeper meaning
- **Architecture**
- Hierarchy of powerful questions
- Open-ended vs. closed-ended questions



Vogt, E.E. (1994). The art and architecture of powerful questions. *MicroMentor Corporate Learning Journal*. Available through <http://www.cashflow88.com/decisions/powerfulquestions.pdf>

Three Dimensions of Powerful Questions

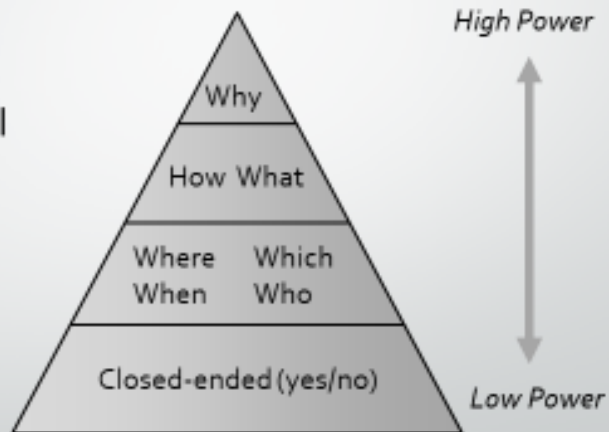
- **Scope.** Compare:
 - *How does our decision affect the security of our unit?*
 - *How does our decision affect the security of this nation?*
- **Meaning/Context.** Compare:
 - *How can we compete with them?*
 - *How can we collaborate with them?*
- **Architecture.** Compare:
 - *Should we implement the policy?*
 - *How could we implement the policy?*
 - *Why are we considering this policy?*



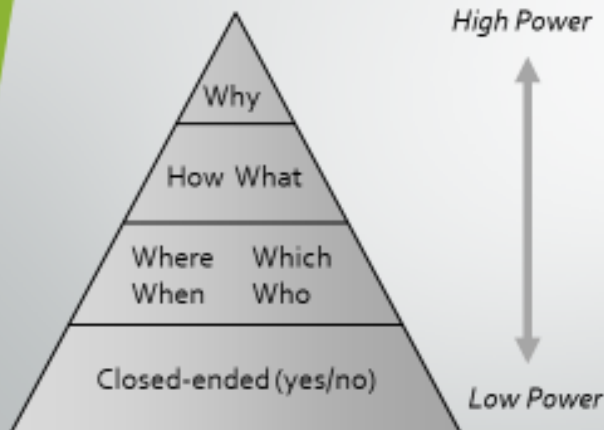
Vogt, E.E. (1994). The art and architecture of powerful questions. *MicroMentor Corporate Learning Journal*. Available through <http://www.cashflow88.com/decisions/powerfulquestions.pdf>

Hierarchy of Powerful Questions

- Questions have varying amounts of power
- Any question can become more powerful by moving up the pyramid
- Powerful open-ended questions are best for
 - inquiring
 - deeper understanding
 - reflective thinking



Hierarchy of Powerful Questions



Why are we considering this policy?

How could we implement this policy?

Should we implement this policy?

Getting Better at Asking Questions: Skilled questioning starts with the ability to ask a variety of types of questions.

Insightful questions...

- Are open-ended (ask for more than a *yes* or a *no*).
- Typically start with *who*, *what*, *where*, *when*, *why*, or *how*?
- Inform rather than seek agreement with a point of view.
- Encourage people to think more broadly and deeply.
- Enable people to understand the situation in a holistic way.
- Help identify areas of ambiguity and paradox.
- Allow people to understand assumptions they (and others) hold.
- Invite deep reflection.
- Encourage more questions.

Insightful questions can lead to a fuller understanding of a problem.

- Questioning can take place at any time and in any situation. It can...
 - Be used to understand a bigger picture: data, events, attitudes, emotions, assumptions, and behaviors.
 - Reveal the real problem, which often turns out to be something bigger, more complex, or entirely different than what we first thought.

Tips for Asking Insightful Questions

- Use open-ended rather than closed-ended questions that ask for more than a simple *yes* or *no* response.
- Ask a variety of types of questions:
 - Not solely *what happened* or *what is going on*
 - Also ask *how*, *why*, *what if*, and *what does this mean for x*
- Seek information that reflects contradictory, unfamiliar, or unpopular points of view.



Questioning to Deepen Learning: Phase II

Brief Tutorial

Finding answers to complex questions can be difficult because...

- Operational settings are awash in data.
 - Challenge: Figuring out what data to focus on and what to filter out.
- The search for information can be unending.
 - Challenge: Deciding how and when the information gathered is "enough for now."
- The focus of information searches is often too narrow.
 - Challenge: Allowing for breadth and depth of understanding.

Finding answers to complex questions can be difficult because...

- It can be unclear where to look for information.
- We may rely too much on familiar sources, and limit learning and understanding.
- Seeking information that reflects contradictory, unpopular or unfamiliar points of view can be uncomfortable but is essential.
- Our view of the situation may change as information is revealed. This may lead to a new set of questions or reframing of the problem.

QUESTIONING TO DEEPEN LEARNING PARTICIPANT EXERCISE OVERVIEW AND TIPS

What's the Purpose of this Exercise?

The purpose of this exercise is to build 1) your questioning skills and 2) your skills in seeking answers to questions about complex problems. Specifically, you will practice:

- Recognizing characteristics of different types of questions.
- Generating questions that can lead to deeper levels of learning.
- Developing ideas for how to answer questions you generate.

Questioning is an active learning strategy that promotes comprehensive information gathering and developing a fuller understanding of a situation or problem set. Asking thought-provoking questions – and seeking information from disparate sources in response to those questions – allows us to deepen our understanding of a current situation, consider alternative perspectives, identify trends that may have an impact on how the situation evolves, and make informed decisions about how to shape the future.

Why Is This Skillset Important for Strategic Thinking?

Effective strategic thinking requires digging into the nature of a problem or situation and developing a thorough, inclusive understanding of it. It is important to ask questions about the information we need, but it is equally important to recognize that deeper understanding is not just about the facts. It means asking questions about perspectives (our own and others'), about goals, and about assumptions. It also means asking about what we might be missing and where our blind spots might be.

Qualities of Insightful Questions

Skilled questioning starts with the ability to ask a variety of types of questions. A basic distinction is between open-ended and closed-ended questions. Closed-ended questions ask for a simple *yes* or *no* response – for

Tips

You can gain useful information from your questions by:

- ✓ Using open-ended rather than closed-ended questions that ask for more than a simple *yes* or *no* response.
- ✓ Asking a variety of types of questions – not just *what happened* or *what is going on*, but *how*, *why*, *what if*, and *what does this mean for x*.
- ✓ Seeking information that reflects contradictory, unfamiliar, or unpopular points of view.

Each of these strategies can promote learning that allows you to have a fuller understanding of a situation or problem.

As with any skill, practice and reflection will enhance your ability to recognize connections and bring them together into a coherent whole.



example, “Are you busy Tuesday?” Open-ended questions elicit more varied information and typically start with *who*, *what*, *where*, *when*, *why* or *how*. Open-ended questions ask for something beyond a *yes* or a *no* answer, for example, “What are you doing on Tuesday?” There is a time and place to use closed-ended questions; however, for the purpose of inquiry, deeper understanding, and reflective thinking, open-ended questions are the best choice.

In addition, insightful questions:

- Inform rather than seek agreement with a particular point of view
- Open the space of inquiry, invite more ideas
- Encourage people to think more broadly and deeply
- Enable people to understand the situation in a holistic way
- Invite deep reflective thinking
- Reveal ambiguity and paradox
- Allow people to understand and challenge the assumptions they (and others) hold
- Encourage more questions

Generating and seeking answers to insightful questions can help unveil the real problem, which often turns out to be something bigger, more complicated, or entirely different than what we first thought. One advantage of questioning is that it can take place any time and in any situation and can be used to understand data, events, attitudes, emotions, assumptions, and behaviors.

Why Is This Skillset Challenging?

It can be challenging to generate insightful questions. For example:

- We often want to identify solutions quickly in order to move to action. Rather than slowing down to think and figure out what we really need to know, we often push to solve the immediate problem, leading to future situations that are suboptimal.
- We often start with a pre-determined view of the problem, which leads us to look for specific kinds of information. Instead, we should challenge ourselves to open up the space of inquiry and expand how we think about the problem.
- The questions we pose may be too narrow. Narrow questions may yield answers to only a small portion of the problem; or they may yield descriptive information but little explanatory information or implication-related information.
- We do not know what type of questions to ask

A fuller understanding of a situation or problem generated through asking and seeking answers to thought-provoking questions provides a stronger foundation for considering and shaping potential futures. Consider the tips embedded in this document to help you overcome these challenges and improve your ability to ask insightful questions and seek information to answer them.

QUESTIONING TO DEEPEN LEARNING PARTICIPANT EXERCISE AID

Pre-Exercise Reflection

Instructions: Today we are going to work on questioning skills. Before we get to the exercise, take a few minutes to think and reflect on the following questions. After we think about them individually, we will discuss them as a group.

1. In your experience, what do you think makes a useful question?
2. Why is it important to ask questions?
3. Are certain questions better than others? In what ways?
4. What makes a question powerful? Can some questions be more powerful?
5. Take a moment to think about questions you might ask that are about tactical or operational issues (e.g., *what* or *how* questions). Now think about questions you might ask at a strategic level (e.g., *why*, *what if*, *how might* questions). Write down a few examples of each.
 - How would you describe the differences in the types of questions?
 - What sort of information are they likely to elicit?
 - How are the tactical- and operational-level questions different from the strategic-level?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Phase 1

Question Generation (Individual Activity)

Instructions: Examine the image you have, and spend 10-15 minutes generating questions about the situation or event represented by the image. Think about:

1. What do you want to know about the image that will help you understand the situation/event that it represents?
2. What questions do we need to ask and answer in order to get the knowledge we need?

The questions you develop should be ones that, when answered, will help you understand the situation presented in the image more fully.

As you develop questions, remember that it is important to develop a variety of types of questions, and questions about a range of topics. Refer to the *Question Types* information on the next page to help you develop a variety of types of questions.

Use the sticky notes to record your questions. Write one question per sticky note sheet.

Question Types

Questions can yield the following:

1. Description
 - Descriptive questions ask for **information** and often begin with *what, when, where, and who*.
 - Examples: “Where is this scene located?”, “Who are the people in the picture?”, “What are they doing?”
2. Explanation
 - Explanatory questions ask for **reasoning** or **interpretation** and often begin with *why* and *how*.
 - Examples: “Why are the people running?”, “Why are there no women in the scene?”, “How are they going to get off the bridge?”
3. Exploration
 - Exploratory questions ask for **inference** and **considering implications** and often begin with *what if, what might, and how could*.
 - Examples: “What might this scene look like at night?”, “What might people be yelling about?”, “What might these actions lead to?”, “How might this activity affect relationships between those two tribes?”
4. Test/Challenge
 - Testing or challenging questions ask **justification of assumptions** and often begin with *why would* and *why couldn't*.
 - Examples: “Why would we think the people in the image are X?”, “Why couldn't this event be located somewhere other than Y?”

Insightful questions can (and should) also address various **system elements** or aspects of the operational environment and the **interactions** among them. For example:

- Culture differences, ethnicity, social structures (tribal, family), nationality, religion
- Economics, politics, military forces
- Infrastructure, physical environment, terrain, weather
- Technology, information systems, and other resources

Powerful Question Characteristics

Three Dimensions of Powerful Questions

Powerful questions are defined by three dimensions:

- **Scope**

- Greater scope
 - *How does our decision affect the security of our unit?*
 - *How does our decision affect the security of this nation?*

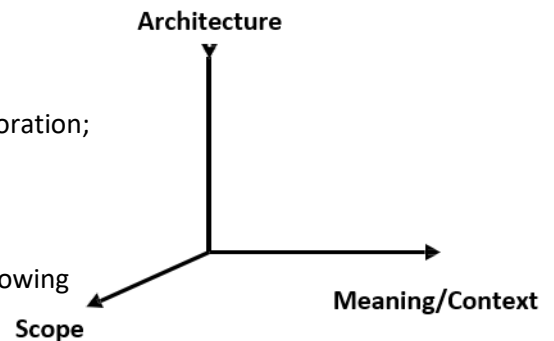
- **Meaning/Context**

- Challenge assumptions; generate energy and encourage exploration; touch a deeper meaning
 - *How can we compete with them?*
 - *How can we collaborate with them?*
- Powerful questions can impact assumptions in one of the following four ways:

Create Reinforce Alter Destroy

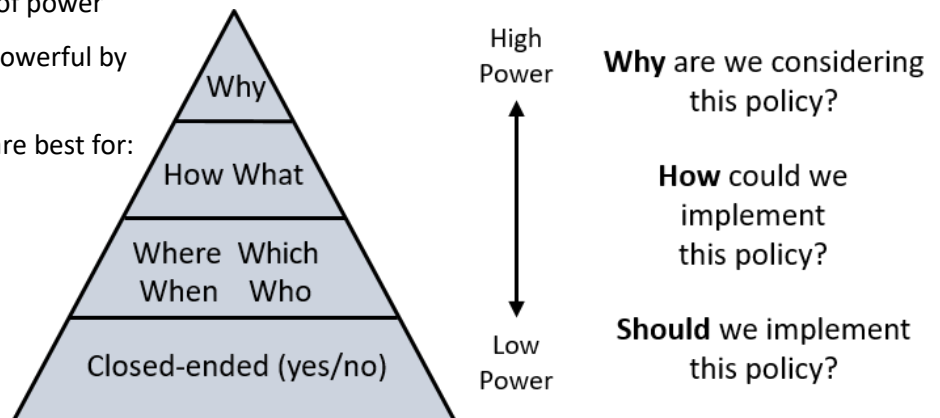
- **Architecture**

- Hierarchy of powerful questions; open-ended vs. closed- ended questions
 - *Should we implement this policy?*
 - *How could we implement this policy?*
 - *Why are we considering this policy?*



Hierarchy of Powerful Questions

- Questions have varying amounts of power
- Any question can become more powerful by moving up the pyramid
- Powerful open-ended questions are best for:
 - inquiring
 - deeper understanding
 - reflective thinking



Mid-Exercise Reflection (Individual Activity)

Instructions: After generating your initial set of questions about the image, take 5-10 minutes to consider the following questions. Your responses to the following questions can help you self-assess how you are doing in this activity so far and where you have opportunities to improve. Jot down some notes in response to each question.

1. Think about what seems particularly challenging about developing questions and what seems easy.
2. Consider how much variety there is in your questions. Do you seem to have a lot of one type of question? If you do, what accounts for that?
3. Was it harder to come up with some types of questions than others?
4. Looking over all your questions, are there certain questions that seem better—more useful, more likely to help you understand the situation? Are some questions more powerful?
5. Pick your three best questions and put a check mark on those three. How are they different from the other questions you came up with, and what makes them stand out as useful or better than others?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Question Review (Group Activity)

Instructions: Read through the questions below. Then, review the collection of questions posted on the wall while you consider them. Then we'll have a group discussion. Feel free to get up and look at the collection on the wall while we're having this discussion.

1. Considered as a group, do the questions reflect a variety of types (e.g., *what/where/who, how/why, what if, how might*)? Do they address a variety of topics/factors or just a few?
2. What are some of the most common questions? Why do these same questions come up repeatedly?
3. Are there questions that only one or a few people asked? Do these less-common questions suggest a different way of thinking about the situation represented by the image?
4. Across the entire set, which questions:
 - Are future-oriented or consider future implications, if any?
 - Consider relationships or interactions?
 - Expose assumptions?
 - Point out paradoxes?
 - Consider hypotheticals?
 - Seek an explanation of what contributed to the current set of circumstances?
5. Which questions surprised you, and why?
6. Are there questions that didn't occur to you, but once you saw it you thought, "That's a GREAT question"? What is it about that question that makes it great?
7. Do you wonder about the purpose of any question (e.g., "Why would he want to know about X")? How so?
8. Which questions do you think are the most useful/critical for understanding the problem? Why?
9. Are there gaps? Questions that are missing, that seem important? (If so, add them.)
10. Did some of your questions help you think of other questions to ask? Which ones?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Reflection and Debrief (Group Activity)

Instructions: We are going to spend time thinking about the exercise we just conducted. Take a few minutes to think about each of these questions individually and then discuss them as a group.

1. Think about what you learned from this activity. What are your big takeaways?
2. How has this activity helped you identify questions you would not have otherwise asked?
3. Think about the questions you identified earlier as your three best/most useful questions. Do you still see them that way? Why/why not? What characterizes these questions? What makes them the best/ most useful?
4. What have you learned about how to ask questions that will help you gain a deeper understanding of the problem meaning?
5. How can you use what you learned so far in your work?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Phase 2
Planning for Information Gathering
(Individual Activity)

Instructions: Now that you have been assigned a few categories of questions, please work individually to review the individual questions contained in each of your assigned categories.

As you review the questions, spend 10-15 minutes thinking about how and where you would seek answers to those questions. Please refer to the questions below to conduct this activity.

1. Where would you look? Why?
2. What could you read? Why?
3. Who would you talk to? Why?
4. What communities of practice would you consult with? Why?
5. Where might an anthropologist look to answer these questions? An economist? A politician? A scientist? How might the approach of these other professionals differ from your own?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Small Group Discussion
(Group Activity)

Instructions: Once everybody in your group has had a chance to offer his/her ideas, please take a look at the topics below, and discuss your ideas and responses as a group.

1. What ideas for seeking information are similar among group members?
2. What ideas are different? How so?
3. Which ideas do you think might be particularly fruitful? Why?
4. Which ideas might be limited in their usefulness? Why?
5. What do you think the challenges are to gathering information in these ways? How might you work around those challenges?
6. If you had to pick the top three ways to start with your information gathering, what would they be? And why? What strikes you as least useful for gathering information? Why?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Final Reflection and Debrief (Individual and Group Activity)

Instructions: We are now going to spend some time thinking about what we have done in this exercise. First, spend 5-10 minutes thinking about the questions posed below. Jot down some notes in response to the question.

After you have considered these questions individually, we will talk about them as a group.

1. What was difficult about coming up with ideas about how to find answers to your questions? What made it difficult? Was it more difficult to find information for certain questions?
2. What information sources or information-seeking methods did others mention that you had not thought of? Which suggestions gave you new ideas about how you might gather information to answer the questions?
3. Which types of questions are fairly easily addressed, and which are harder to figure out where or how to get information to address them?
4. If we hadn't done what we did in Phase 1, generating all the questions, how might your search for information have been different? What might you have missed?
5. Think for a moment about both phases of this exercise (i.e., generating questions and developing a plan to answer them). What have you learned? How might you apply what you learned to your current role? Or to future roles?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

STRATEGIC THINKING SKILL-BUILDING EXERCISE
**TELLING A STORY: AN EXERCISE IN
CONNECTING THE DOTS**

**STRATEGIC SKILL-BUILDING EXERCISE
TELLING A STORY: AN EXERCISE IN CONNECTING THE DOTS**

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TELLING A STORY: AN EXERCISE IN CONNECTING THE DOTS FACILITATOR EXERCISE GUIDE

Exercise Purpose

This exercise provides practice in identifying connections across seemingly disparate pieces of information and integrating them into a coherent whole. Specifically, it provides practice in systems thinking and synthesis. Systems thinking is the ability to recognize and account for relationships and interactions among people, events, regions, and other components of a system. Synthesis is the ability to identify connections across seemingly unrelated pieces of information and to bring the pieces together into a cohesive whole. This exercise also provides practice in hypothesis generation, cognitive/mental flexibility, and sensegiving.

Estimated Run Time

This exercise will take approximately 3-1/2 hours. To reduce the length of the exercise, certain portions of the exercise can be conducted as homework or on one's own time.

Summary of the Exercise

Using a set of 5 images that are seemingly unrelated, participants:

- Develop a story and sketch that accounts for the information contained in the set of images.
- Work in small groups and present that story to others.
- Revise their story, or create an entirely new one, after several images in the set are replaced with new ones.

Learning Objectives

Participants will learn to:

- Recognize the importance of recognizing connections across seemingly unrelated factors in order to understand a complex problem.
- Recognize that factors that seem unrelated may actually interact and need to be understood in order to anticipate and/or shape the future.
- Integrate multiple elements together into a coherent whole.
- Adapt an explanation in the face of new or different information.

Relation to Other Exercises

It is best for participants to complete this exercise after they complete *Questioning to Deepen Learning*. Experience with that exercise can help participants ask questions that enable them to identify connections they might not otherwise recognize.

Materials Needed (Facilitators)

- Five images (selected randomly) for each participant. These images are in the supplemental materials section.
- A total of 10 images are provided in this packet of materials.
- The facilitator will need to divide the participants into small groups of three to four for a portion of the exercise. This will ensure the right mix of images across individuals.
- Each small group can use the same packet of images, but each person within a small group should have a different set of five images.
- Whiteboard and markers.
- One *Participant Exercise Aid* for each participant (provided in this packet).

Materials Needed (Participants)

- *Participant Exercise Aid* (provided by facilitator)
- Paper
- Pen/pencil
- Markers

Facilitator Tips and Guidance

- Remind participants there is no right answer.
- Emphasize that creating a story is about making connections.
- Encourage creativity in filling gaps and making connections.
- Ask participants to consider not only what they see, but what they do not see.
- Reiterate that art quality is not important in creating sketches and representations.
- Note common challenges.
- Underscore the connection between uncertainty in the exercise and uncertainty in the real world.

If participants get stuck, ask:


- What if you took this particular picture away; how would that change your story?
- What if you re-arranged the images?
- What if you switched the first and last picture?
- What's outside the frame of the picture?
- What happened right before the picture was taken?

TELLING A STORY: AN EXERCISE IN CONNECTING THE DOTS


SAMPLE FACILITATOR SCRIPT

The next several pages provide step-by-step instructions for facilitating the exercise, along with sample facilitator language. The sample language is intended as only a starting point, particularly for those with limited facilitation experience. Facilitators should adapt the language offered here to make it their own.

Several of the steps in this exercise are noted with the following icon:  This icon denotes activities participants can conduct as homework, outside of the classroom, to reduce the length of in-class time required for the exercise.

If you choose to do all (or most) of the activities *within* the classroom setting, we have noted natural break points in the exercise that could be used to divide the exercise over multiple sessions. Those are indicated using this icon:  .


Although facilitators should adapt language and adjust the amount of time spent on various activities, we recommend that facilitators include all the activities and follow the sequence indicated here to achieve the learning objectives.

Step	Sample Language
1. EXERCISE SET UP (30-40 minutes)	<i>Today we are going to practice our systems thinking and synthesis skills.</i>
1.1 Distribute and describe the Participant Exercise Aid	<p>→ <i>This aid contains information you will use throughout the exercise. I'll let you know when you need to turn to a particular section.</i></p> <p><i>Also, this aid is something you can take with you after the exercise. It has information in it about the systems thinking and synthesis skills we're practicing in the exercise, why they are important for strategic thinking, and some tips to help you apply the skills later.</i></p>
1.2 Conduct pre-exercise reflection 	<p>→ <i>Before we get started with the exercise, I'd like us to take a few minutes to do some thinking. Please flip to Pre-Exercise Reflection in your exercise aid.</i></p> <p><i>Take a few minutes to think about the questions posed there. Then we will discuss them as a group.</i></p>

Step	Sample Language
	<p>[Facilitate discussion around the following questions:]</p> <ol style="list-style-type: none"> 1. <i>Can you think of an example from your own experience where you figured out how certain factors or pieces of information fit together into a bigger picture?</i> 2. <i>What made recognizing connections and integrating the pieces together difficult?</i> 3. <i>What helped you recognize and understand the connections?</i> 4. <i>How do you think synthesis and systems thinking can help you with strategic thinking?</i>
<p>1.3 Provide brief tutorial to participants</p> <p>Adapt content as needed.⁹</p>	<p>→ [See tutorial slides provided.]</p>
<p>1.4 Provide <i>Participant Exercise Overview and Tips</i></p> <p>Emphasize that the exercise is about <u>practicing</u> skills important for strategic thinking.</p>	<p>→ <i>As we just discussed in the brief tutorial, part of thinking strategically involves the ability to identify connections that might not be readily apparent. In operational settings, we often encounter data that seems like a jumble, and we need to figure out some way to make sense out of what we have. That’s what this exercise is about.</i></p> <p><i>What we’re doing today is <u>practicing</u> a skill that is important for strategic thinking. This exercise is not about learning new concepts. It’s also not going to transform you into a strategic thinker.</i></p> <p><i>What it <u>is</u> going to do is give you an opportunity to practice making connections across information that might not seem related on the surface. It’s also going to give you practice integrating that information into a coherent whole.</i></p>
<p>Provide an analogy.</p>	<p>→ <i>Just like basketball players perform various drills to practice shooting, passing, and so forth, what we’re doing today is a drill to help you practice the skills of systems thinking and synthesis that are important to your development as a strategic thinker.</i></p>
<p>Describe the activity.</p>	<p>→ <i>We’re going to do that by working with a set of images. I’ll give you the images in a few minutes [hold up examples so participants can see what you mean by images]. Your task will be to develop a story—an interpretation—of how they might fit together.</i></p>

⁹ The facilitator may choose to give the tutorial verbally, print out the tutorial for participants, project the content in PowerPoint, or some combination thereof.

Step	Sample Language
<p>1.5 Divide class into small groups</p>	<p><i>Parts of this exercise may be uncomfortable for you. You may find yourself uncomfortable creating a story without all the facts. But, creating a story or interpretation in the midst of uncertainty is important to practice because this is what we often face in operational settings, when dealing with complex problems.</i></p> <p><i>Part of what you're going to be practicing here is doing <u>something</u> with the information you have—and coming up with a reasonable interpretation as a starting point.</i></p> <p>→ <i>Before we start working with the images, we're going to divide into groups of three to four people. We're doing this to get the right mix of materials for each person. You will also be briefing to your small group later in the exercise and debriefing on the exercise.</i></p> <p><i>[They can self-form the groups, or you can count off to determine group membership.]</i></p> <p><i>In a few minutes, I'm going to give each of you a set of five images. Everyone in your small group will get a different set of five images. The images reflect a variety of different situational factors, ranging from military factors to social, political, cultural, economic, technological, and other factors.</i></p> <p><i>Once you have the images, you're going to spend some time looking at them. They may seem completely unrelated at first. But, I'd like you to think about how they could be connected.</i></p> <ul style="list-style-type: none"> • <i>What threads might weave through all of these images?</i> • <i>How might they be inter-related?</i> • <i>What story or big picture might they represent?</i> <p><i>Your task is to create a <u>story</u> that accounts for these images. There is no right or wrong answer. The collection of images is random, so there's no correct story to discover. Any set of images can be understood in many different ways. Remember, the point of this exercise is to practice your skills in making connections across factors that may seem unrelated.</i></p> <p><i>You can interpret these images loosely. For example, if you see an image of a tornado, you might think of that as representative of weather issues more generally. Or you might think of it is a metaphor for chaos or confusion.</i></p>

Step	Sample Language
	<p><i>You can also arrange the images in whatever way makes sense to you, to connect them into a coherent whole.</i></p> <p><i>Also, think about not only what you see in the images. Think about what you don't see. Sometimes, the most important information is not the information you have. It's the information you don't have; the information that is missing. Consider that as you're working through this exercise. Use your creativity to help fill in the gaps and to identify potential connections across the images.</i></p> <p><i>For example, perhaps one of your images is a boat in the distance. Perhaps part of the story you create is that there is a stowaway in the boat, even if you do not actually see a stowaway depicted in the image. Feel free to fill in the blanks as you create your story.</i></p>
<p>2. PARTICIPANTS DEVELOP STORY (Individual Activity)  (30-35 minutes)</p>	<p><i>Once you've examined the images, you will have 20-30 minutes to develop two products:</i></p> <ul style="list-style-type: none"> <i>A narrative description (story) of how the images fit together.</i> <i>A rough sketch that shows the connections and represents the whole set.</i> <p><i>The sketch does not need to be good art or PowerPoint ready. The purpose of the sketch is to help you in developing your interpretation and communicating it to others.</i></p>
<p>2.1 Refer participants to <i>Image Review Considerations</i> in their exercise aid</p>	<p>→ <i>Now I'd like you to turn to the Image Review Considerations section of your exercise aid. There you will see some questions that can help prompt your thinking as you review the images.</i></p> <p><i>When I give you your set of images, I'd like you to flip your images over one at a time. Spend about a minute with each image, asking yourself the questions in Part 1 of the Image Review Considerations. For example:</i></p> <ul style="list-style-type: none"> <i>What does the image depict? What concepts might the image represent?</i> <i>Who are the key players, where are they located in the scene, what are they doing, and why?</i> <i>Does the image suggest a particular location, time of day, or season? Think about what that information might mean in terms of understanding what's going on.</i>


Step	Sample Language
<p>2.2 Distribute the images</p> <p>Provide each participant with a set of five images. Pass the images out randomly, without attention to image content, akin to dealing a hand of cards from a card deck. Pass the images out so they are turned upside down and the participants can't see them yet.</p> <p>Do not duplicate images within each small group. However, the same set of images can be used across small groups.¹⁰</p>	<ul style="list-style-type: none"> • <i>What might be going on outside the frame of the image, and what might that mean for what's going on inside the image?</i> • <i>What happens if you think about the image from a security point of view or an economic point of view? What about politics, social issues, technology, or the physical environment? Does one or another of these points of view help you understand the image more completely?</i> <p><i>The point of looking at each image individually for a couple of minutes is to give yourself an opportunity to appreciate the full complexity of each picture. Appreciating the complexity of each image will help you make linkages across the images later. Give yourself time to think about the layers of information contained within (or represented by) each image.</i></p> <p><i>Also, think about not only what you see in the image; think also about what you don't see.</i></p> <p>→ <i>Here are your five images. Everyone in your small group has a different set of images. The images reflect a variety of different situational factors, ranging from military factors to social, political, cultural, economic, technological, and other factors.</i></p>
<p>¹⁰ One way to manage this is to make 1 copy/group of the 10 images provided in the <i>Supplemental Materials</i> section. Images distributed within each small group come out of that set of 10.</p>	

Step	Sample Language
<p>2.3 Ask participants to work independently to examine each individual image</p>	<p>► <i>Now that you have your images, please work independently. Flip over one image at a time and spend about 1 minute looking and thinking about that individual image, using the questions on Page 3 of your aid to prompt your thinking. Remember, you can interpret the images loosely. [Give participants approximately 5 minutes to review the images.]</i></p>
<p>2.4 Ask participants to develop a story and rough sketch that ties the images together</p>	<p>► <i>Now that you have examined each individual image, please work independently to develop a story and a rough sketch that ties them together. As you do this, consider the questions in the Image Review Considerations: Part 2 section of your exercise aid to prompt your thinking. For example:</i></p> <ul style="list-style-type: none"> • <i>When you look across the full set of images, what questions occur to you?</i> • <i>Think about how the images might be connected to each other. How are the concepts or relationships you identified in the individual images connected?</i> • <i>Think about connections among the images—the connections that are explicit and obvious and those that are implicit, indirect, or subtle.</i> • <i>What story do the images tell? What narrative takes account of all of the images?</i> <p><i>As you develop your story and rough sketch, remember that there is no right or wrong answer in this exercise. The image combinations are random, and there is no story we are trying to get you to discover.</i></p> <p><i>Also, remember to think about not only what you see in the images, but think about what is <u>not</u> there. Use your creativity to fill in the blanks and create a story for not only what you see, but also what you don't see.</i></p> <p><i>The point is to identify possible connections among these images and create a plausible story that ties the images together into a whole.</i></p>

3. PARTICIPANTS PRESENT STORY
(Small Group Activity)
(25-30 minutes)

3.1 Have individuals reconvene in their small groups

► *Now, I'd like you to get together in your small groups.*

Step	Sample Language
<p>3.2 Ask each participant to briefly present their story and sketch to others in their small group</p>	<p>→ <i>Each of you is going to present your story and sketch to the rest of the group. Your presentation should be 5 minutes or less.</i></p> <p><i>As others in your group present their story and sketch, I encourage you to ask questions of the presenter or provide comments that build on their story or sketch. Maybe you see a relationship the presenter hasn't mentioned, or maybe you have a clarifying question (e.g., "How is your sketch related to your description? I'm not getting the connections there.") Your questions should focus on helping the presenter clarify and expand on their story.</i></p> <p><i>The focus of the questions should be on the <u>connections</u> the individual is making across the images.</i></p>
<p>4. MID-EXERCISE REFLECTION (Individual Activity) (25 minutes)</p> <p>4.1 Refer participants to the <i>Mid-Exercise Reflection</i> in the <i>Participant Exercise Aid</i></p> <p>4.2 Ask participants to write notes in response to the questions</p> <p>4.3 Ask participants to discuss their answers in their small group.</p> 	<p><i>We are now going to spend time thinking about what we have done so far in this exercise.</i></p> <p>→ <i>I'd like you to flip to Mid-Exercise Reflection in your exercise aid.</i></p> <p>→ <i>Please read through the questions on this page, and jot down your responses. We're going to take about 10 minutes for you to work individually.</i></p> <p>→ <i>Now that you have spent some time reflecting on the activities we have conducted so far, I'd like you to discuss your responses and thoughts with your small group. If you'd like, you can nominate someone in your group to capture your group's discussion points on the whiteboard.</i></p>
<p>5. PARTICIPANTS CHANGE THE STORY (45 minutes)</p> <p>5.1 Ask participants to reconvene in their small groups</p>	<p>→ <i>I'd now like you to reconvene in your small group.</i></p> <p><i>In operational environments, we are constantly faced with incoming data that we need to somehow incorporate into our current understanding. Learning how to re-examine that understanding and adjust it is what we are going to work with next.</i></p>

Step	Sample Language
<p>5.2 Have each participant pass two randomly selected images from their set to the person on their left</p>	<p>▶ <i>I'd like you to turn over your images and shuffle them. Then randomly select two of the images. Pass those two images to the person on your left.</i></p> <p><i>Now, everyone should have a new set of images (three from the original set, plus two new ones).</i></p>
<p>5.3 Ask each participant to examine their new set of images</p> <p>They should examine the entire set, with the two new ones included.</p>	<p>▶ <i>I'd like you to consider: How do these two new images change your interpretation of the set?</i></p> <p><i>Similar to what you did earlier, I'd like you to think about how these images are connected. How might these images be tied together into a coherent story? Remember, you can interpret the images loosely, and there is no wrong or right answer.</i></p>
<p>5.4 Ask each person to create a story and rough sketch that accounts for the connections across the new set of images</p>	<p>▶ <i>As you think about how these images might be connected, I'd like you to develop a story that accounts for how the images fit together. This might be a modification of your previous story, or it might be a new story altogether.</i></p> <p><i>As you develop your story, I'd also like you to create a rough sketch that describes the connections among the images.</i></p> <p><i>Again, when I say connections, what I mean is connections among the images and among the concepts those images represent. Think not only about what you see directly in the images; also think about what you don't see. Use your creativity to weave the images together into a story.</i></p>
<p>5.5 Ask each participant to present their new story and sketch to their small group</p>	<p>▶ <i>Now, please reconvene into your small groups, and present your new story and sketch to your group (in 5 minutes or less).</i></p> <p><i>Address any questions or comments posed by the group in response to your presentation.</i></p>

Step	Sample Language
<p>6. PARTICIPANTS DEVELOP NEW STORY (20-30 minutes)</p> <p>6.1 Describe challenges that are faced in operational settings Emphasize challenge of getting fixated on an initial interpretation.</p> <p>6.2 Ask participants to develop a radically different story that accounts for the same set of images</p> <p>6.3 Ask each participant to present their new story to their small group</p>	<p><i>Now that you have updated your story based on new information (two new images), I'd like you to think about what happens in operational settings.</i></p> <p>→ <i>Sometimes, we start with an interpretation of something, and we hold onto that interpretation and fit the new information into it. Sometimes we have blind spots and are unable to discard our original interpretation or frame. The problem is, in some cases, that original interpretation might not be accurate.</i></p> <p>→ <i>I'd like you to take your most recent set of five images and come up with a new story. I don't want a story that is just an updated or revised version of your previous one. I'd like a radically different story that could account for the set of five images.</i></p> <p>→ <i>Now, please reconvene into your small groups, and present your new story to your group.</i></p>
<p>7. FINAL REFLECTION AND DEBRIEF (25 minutes)</p> <p>7.1 Refer participants to <i>Final Reflection</i> in their exercise aid</p> <p>7.2 Ask them to answer the questions individually</p> <p>7.3 Reconvene as a large group</p> <p>7.4 Pose questions to the group for consideration and discussion</p>	<p><i>We are now going to spend some time thinking about what we have done in this exercise.</i></p> <p>→ <i>Please flip to Final Reflection in your exercise aid, where you will find some questions to consider.</i></p> <p>→ <i>I'd like you to first work individually to consider and write your responses to each of the questions provided in this handout.</i></p> <p>→ <i>Now that you have spent some time considering those questions individually, I'd like to spend some time reflecting on this exercise as a large group.</i></p> <p>→</p> <ul style="list-style-type: none"> • <i>Think about what you learned from this activity. How might you approach this activity differently next time?</i> • <i>What was difficult about connecting the images into a coherent story? What helped you to do so?</i> • <i>How might you apply these skills in your personal life and/or work?</i> • <i>Think about the information you see or hear in briefings, on the news, or from other sources. How might you think differently about making sense of information, based on your experience in this exercise?</i>



Telling A Story:

An Exercise in Connecting the Dots

Exercise Overview

Image credit: shutterstock.com

What's the purpose of this exercise?



Primary purpose: To build your systems thinking and synthesis skills

- **Systems thinking**– identifying and accounting for relationships and interdependencies among factors that might appear to be unrelated
- **Synthesis**– integrating information into a coherent whole

Secondary purpose: To provide practice in adapting your thinking in the face of new information.

Image credit: shutterstock.com

The exercise will also help you practice these additional skills:

- **Hypothesis generation** – Creating potential explanations, given a set of information.
- **Cognitive flexibility** – Adapting your perspective, assumptions, thought process and/or interpretations.
- **Sensegiving** – Communicating your understanding to others.

What will I do in the exercise?

View a set of images, and develop a story that accounts for the information contained the set of images

Present your story to others in your group

Revise your story (or create a new one) based on new images

Reflect on exercise; discuss as a group

What will I gain from this exercise?

By the end of the exercise, you should be able to:

- **Appreciate the importance of recognizing connections** across seemingly unrelated factors in order to understand a complex problem or set of circumstances.
- **Recognize that factors that might seem unrelated on a superficial level, may actually interact** in ways that need to be understood in order to anticipate and/or shape future circumstances.
- Demonstrate an ability to **integrate multiple elements** into a coherent whole.
- Demonstrate ease in **adapting your explanation** when new or different information is introduced.



Telling A Story:

An Exercise in Connecting the Dots

Brief Tutorial

Image credit: shutterstock.com

“Connecting the Dots” requires two closely-related skills: Systems thinking and synthesis.

- **Systems thinking**

- A way to recognize and account for relationships and interactions among people, events, regions, and other components of a system.
- Allows us to comprehend and appreciate the “bigger picture”.

- **Synthesis**

- The process of bringing together disparate data elements (information, opinions, perspectives) and integrating them into a coherent whole.

How do systems thinking and synthesis matter for strategic thinking?

- Events, people, circumstances, and information that seem unrelated on the surface may actually be related.
 - Understanding those connections and interactions lets us effectively anticipate and shape future situations.
- Systems thinking and synthesis allow us to recognize and describe a bigger picture, and to think holistically about a problem or situation.
- A fuller appreciation of a problem or situation helps to inform the decisions we make to shape the future.

What's Hard? Challenges to Synthesis and Systems Thinking

- Many of us tend to use analytic approaches to thinking (i.e., understanding pieces and parts).
 - Can lead us to miss important connections critical to understanding and shaping the future.
- Recognizing and appreciating connections takes time.
- We often focus on surface features and obvious commonalities and may miss fundamental underlying issues.

What's Hard?

Challenges to Synthesis and Systems Thinking (continued)

- We often look for *the* answer rather than *an* answer.
 - Considering possibilities is a way to develop hypotheses about what might be happening, why, and what the implications might be.
- Making sense of situations when new data are continually being added is a challenge in dynamic operational settings.
 - Learning and practicing how to flex one's thinking is a key aspect of synthesis and systems thinking.

Tips for Recognizing Connections and Integrating Disparate Information

- Consider a range of factors in addition to those that are immediately apparent – for example, politics, economics, social structures, cultural norms.
- Consider interrelationships and interactions among elements.
- Create a sketch, graphic, or concept map that shows connections and interactions among elements.
- Describe the big picture you are seeing to others and seek their feedback.
- Practice!

TELLING A STORY: AN EXERCISE IN CONNECTING THE DOTS PARTICIPANT EXERCISE OVERVIEW AND TIPS

What's the Purpose of the Exercise?

The purpose of this exercise is to give you practice in synthesis and systems thinking – complementary skills that are foundational to strategic thinking. Specifically, you will practice:

- Identifying connections across seemingly unrelated factors and integrating them into a coherent whole.
- Generating hypotheses about how a set of information fits together, adapting your explanation when new or different information is introduced, and communicating a coherent story to others.

Systems thinking (or holistic thinking) is the ability to recognize and account for the relationships and interactions among people, events, regions, and other factors. Synthesis is the ability to integrate data elements (information, opinions, and perspectives) together into a cohesive whole. As with any skill, becoming proficient in these skills requires practice.

Why Is This Skillset Important for Strategic Thinking?

- Events, people, circumstances, and information that seem unrelated on a superficial level may actually be related and interact in ways that we need to appreciate in order to effectively anticipate and shape future situations.
- Systems thinking and synthesis allow us to recognize and describe a bigger picture that connects individual elements together. Appreciating a problem set more fully affects the decisions we make to shape the future.

Why Is This Skillset Challenging?

A few reasons these skills are challenging include the following:

- Many of us over-rely on analytic approaches to appreciate the complexity of a situation and solve problems. As vital as analytic approaches

Tips

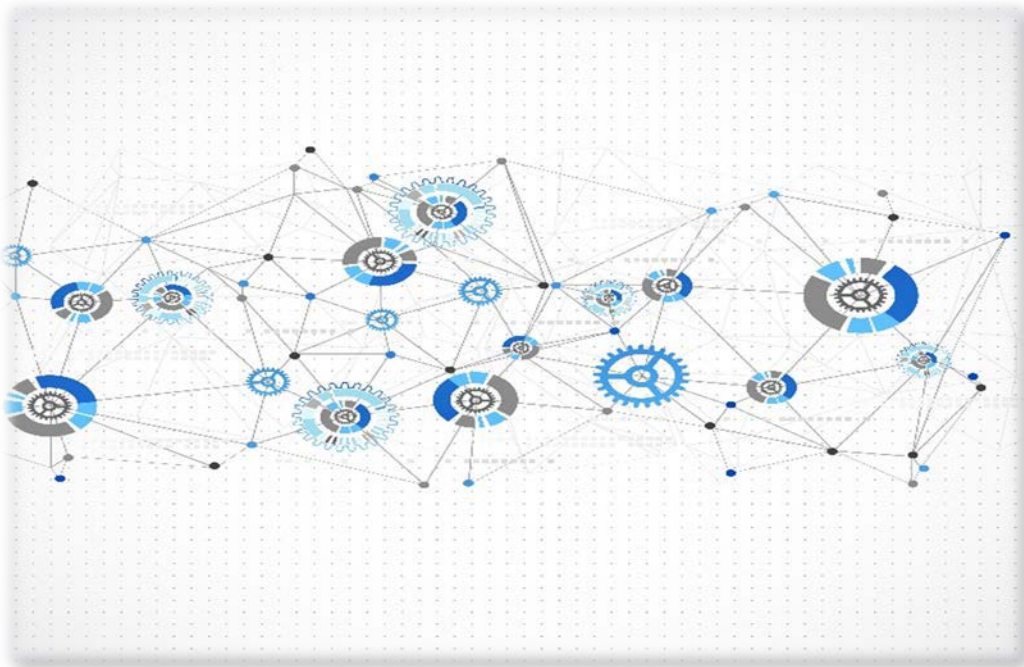
To recognize connections and integrate seemingly unrelated information:

- ✓ Start by considering the features and characteristics of each of the data elements. What are they about? What are their sources? What do they tell us? What questions do they raise?
- ✓ Think about what is similar and what is different about individual data elements.
- ✓ Consider a range of factors in addition to those that are immediately apparent—for example, politics, economics, infrastructure, social structures, physical environment, cultural norms, and religion.
- ✓ Consider the inter-relationships and interactions among data elements, instead of just considering them in isolation.
- ✓ Create a sketch, graphic, or concept map that shows connections and interactions among data elements.
- ✓ Describe the big picture you have discerned to others and seek feedback to help identify gaps or relationships you might not have considered.

are, if used in isolation, they can be counterproductive in the context of thinking strategically and thinking about complex problems.

- Over-reliance on analytical thinking can limit our ability to see beyond the immediate situation and grasp important connections that are critical to appreciating the problem, and shaping the future.
- Recognizing and appreciating connections takes time. In the rush to move to solutions, we may minimize the importance of systems thinking and synthesis or skip them altogether.
- We often focus on surface features and the most obvious commonalities, without digging deeper to search for nuances and subtler connections that are critical to appreciating complex problems. Approaches generated based on surface-level understanding may be short-term oriented and/or lack the ability to address fundamental underlying issues.

Consider the tips embedded in this document to help you overcome these challenges and improve your ability to connect the dots.



TELLING A STORY: AN EXERCISE IN CONNECTING THE DOTS PARTICIPANT EXERCISE AID

Pre-Exercise Reflection

Instructions: In this exercise, we are going to practice the skills of systems thinking and synthesis. Before starting the exercise, take a few minutes to think about and reflect on the questions listed below. After thinking about the questions individually, we will discuss them as a group.

Thinking strategically involves appreciating how individual factors or individual pieces of information fit together to form a bigger picture. Sometimes the connections are obvious, but often they are not.

1. Can you think of an example from your own experience where you figured out how certain factors or pieces of information fit together into a bigger picture?
2. What made recognizing connections and integrating the pieces together difficult?
3. What helped you recognize and understand the connections?
4. How do you think synthesis and systems thinking can help you with strategic thinking?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Image Review Considerations: Part 1

Instructions: Take a few minutes to look at the images one at a time. Use the topics and questions below to help you think about the images. The purpose of looking at each image individually is to give yourself an opportunity to appreciate the content and complexity of each picture. Taking the time to grasp each image separately will help you make linkages across the images later on. Give yourself time to think about the layers of information contained within each image and what each image might represent.

We have provided some ideas for examining each of the images. Consider:

- What does the image depict; what concepts might the image be representing?
- Who are the key players? Where they are located in the scene? What are they doing, and why?
- Does the image suggest a particular location, time of day, or season? Think about what that information might mean in terms of understanding what's going on.
- What might be going on outside the frame of the image, and what might that mean for what's going on inside the image?
- What happens if you think about the image from a security point of view? From an economic point of view? What about from the point of view of politics, social issues, technology, or the physical environment? Does one or another of these points of view help you understand the image more completely?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Image Review Considerations: Part 2

Instructions: Use the questions below to aid your thinking as you develop a story that weaves the images together into a coherent whole.

1. When you look across the full set of images, what questions occur to you?
2. Think about how the images might be connected to each other. How are the concepts or relationships you identified in the individual images connected?
3. Think about connections among the images — the connections that are explicit and obvious, and those that are implicit, indirect, or subtle.
4. What story do the images tell? What narrative takes account of all of the images?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Mid-Exercise Reflection

Instructions: Please take a few minutes to think about each of the following questions and jot down your responses. After thinking about them individually, we will discuss them as a group.

What did you find difficult/challenging about this activity?

1. Thinking about the story you just developed, consider what might have happened for the situation to evolve in the way it did.
 - What events might have led up to this set of circumstances?
 - What factors might have contributed to the situation?
2. If you could have one other image (or piece of information) that would make this situation clearer to you, what would that image (or piece of information) be? How does it fit into your narrative? How does it help clarify things?
3. Did you use one particular image to frame your story? Which one? And why was that the frame?
4. Did you find yourself fixating on one particular image or one interpretation of an image? If so, what was it?
 - Think about parallels in your life experience; for example, a situation in which a particular person, event, or piece of information created a frame for your point of view that was difficult to adjust or step away from?
 - What strategies might be useful to break your frame or guard against becoming fixated?
5. Think about which picture you found hardest to fit into the story you were developing. What made that particular picture difficult to work with?
6. Think about how your own experiences shaped the story you created. Was that helpful or did your own experiences seem to get in the way?
7. What did you learn by hearing others' stories? How did their stories differ from yours? Did you understand your images and/or story differently after hearing others' stories (e.g., additional connections)?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Final Reflection

Instructions: Consider each of the following questions and jot brief notes in response. After thinking about them individually, we will discuss the questions as a group.

1. Think about what you learned from this activity. How might you approach this activity differently next time?
2. What was difficult about connecting the images into a coherent story? What helped you to do so?
3. How might you apply these skills in your personal life and/or work?
4. Think about the information you see or hear in briefings, on the news, or from other sources. How might you think differently about making sense of information, based on your experience in this exercise?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

STRATEGIC THINKING SKILL-BUILDING EXERCISE
ENVISIONING POTENTIAL FUTURES

**STRATEGIC THINKING SKILL-BUILDING EXERCISE
ENVISIONING POTENTIAL FUTURES**

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ENVISIONING POTENTIAL FUTURES FACILITATOR EXERCISE GUIDE

Exercise Purpose

This exercise provides participants with practice in thinking across time and strategic foresight. Thinking in time is the ability to alternate between thinking about the past, present, and future. Strategic foresight is the ability to anticipate potential future conditions based on attention to social, economic, political, military, environmental, and technological trends and interactions. A second phase of the exercise provides practice in considering actions that can shape the future toward a desired scenario.

Estimated Run Time

This exercise will take approximately 4 ¾ hours, with Phase 1 taking approximately 3 ¼ hours and Phase 2 taking approximately 1 ½ hours. To reduce the length of the exercise, certain portions of the exercise can be conducted as “homework” or on one’s own time.

Summary of the Exercise

In Phase 1, participants:

- Read a brief description of an emerging global hotspot.
- Consider a range of factors and sketch their understanding of the problem.
- Think back in time 5 years and describe the conditions that existed at that time.
- Think forward in time and describe alternative futures (preferred, probable, possible).
- Work in small groups to present and discuss their work.

In Phase 2, participants:

- Focus on a single future scenario, selected by the facilitator.
- Generate ideas about how to shape the future to align with the selected scenario.
- Consider 2nd- and 3rd-order effects of chosen actions.
- Reflect and discuss in a group setting.

Learning Objectives

Participants will learn to:

- Appreciate the value of thinking beyond the present and/or near-term future.
- Recognize that current assumptions, decisions, and courses of action can have long-term implications.
- Recognize that thinking back in time (historically) can support the ability to anticipate how the situation may evolve into the future.
- Consider a range of factors and their interactions when making sense of a current situation and anticipating potential futures.
- Envision and create descriptions of potential futures.
- Consider how to shape conditions in a way that leads toward the desired future scenario.

Relation to Other Exercises

This exercise is best used after participants have completed the following exercises: *Reflecting on the Environment*, *Questioning to Deepen Learning*, and *Telling a Story*. The skills addressed in those exercises are important building blocks for conducting the activities in this exercise.

Materials Needed (Facilitators)

- Brief written description of a situation/problem that is relevant to the Army (see associated materials for five examples)
- Whiteboard and markers
- One *Participant Exercise Aid* for each participant (provided in this packet)

Materials Needed (Participants)

- *Participant Exercise Aid* (provided by facilitator)
- Pen/pencil
- Notebook or paper

Facilitator Tips and Guidance

- Create and use alternative scenarios, if desired. Five example scenarios are provided with the packet of materials; however, the facilitator can create and use different scenarios. When developing other scenarios for use, the scenarios should:
 - Involve multiple players (individuals, groups, countries).
 - Be complex. Futures should reflect an interplay of factors (e.g., socio-cultural, economic, military) and show that how the situation ultimately unfolds matters to U.S. interests.

Remind participants:

- There is no right answer or correct version of the future that they need to figure out.
- The exercise is more about thinking and projecting into the future than about what the Army should (or should not) do.
- The exercise has an inherent uncertainty built into it given the requirement to describe future conditions.
- The ambiguity and uncertainty that is part of the exercise is part of what happens in real-world, operational environments.


If participants get stuck:

- Suggest they step back and shift perspectives on the problem – e.g., if they are thinking in military or security terms, suggest thinking about economics, environmental factors, or technological trends.
- Think about what might happen and what seems likely to happen.
- Consider letting the group have a 5-10 minute discussion about the situation depicted in the scenario to share facts/knowledge about the situation, so they start from a larger, common base of knowledge.

ENVISIONING POTENTIAL FUTURES SAMPLE FACILITATOR SCRIPT

The next several pages provide step-by-step instructions for facilitating the exercise, along with some sample facilitator language. The sample language is intended as only a starting point, particularly for those with limited facilitation experience. Facilitators should adapt the language offered here to make it their own.

Several of the steps in this exercise are noted with the following icon: . This icon denotes activities participants can conduct as homework outside the classroom, to reduce the length of in-class time required for the exercise.

If you choose to do all (or most) of the activities *within* the classroom setting, we have noted natural break points in the exercise that could be used to divide the exercise over multiple sessions. Those are indicated using this icon: .

Although facilitators should adapt language and adjust the amount of time spent on various activities, we recommend that facilitators include all the activities and follow the sequence indicated here in order to achieve the learning objectives.


PHASE 1: Anticipating Probable and Possible Futures

Step	Sample Language
1. EXERCISE SET UP (30 minutes)	<i>Today we are going to practice our strategic foresight and thinking in time skills.</i>
1.1 Distribute and describe the Participant Exercise Aid	<p>→ <i>This aid contains information that you will use throughout the exercise. I'll let you know when you need to turn to a particular section.</i></p> <p><i>Also, this aid is something you can take with you after the exercise. It has some information in it about the strategic foresight and thinking in time skills we're practicing in the exercise, why they are important for strategic thinking, and some tips to help you apply the skills later.</i></p>
1.2 Conduct pre-exercise reflection	<p>→ <i>Before we get started with the exercise, I'd like us to take a few minutes to do some thinking. Please flip to the Pre-Exercise Reflection section of your exercise aid.</i></p>
Refer participants to <i>Pre-Exercise Reflection</i> in their exercise aid.	

Step	Sample Language
Ask participants to reflect individually on questions posed. 🏠	→ <i>Take just a few minutes to think about the questions posed there. Then we will discuss them as a group.</i>
Discuss responses as a group.	→ <i>For many of us, thinking beyond the present or near-term future, considering long-term implications of our decisions, and anticipating future circumstances is difficult. Take a moment to consider what is involved in visualizing how a current situation or problem may change over time.</i> <ul style="list-style-type: none"> • <i>What about that activity seems fairly straightforward? What is difficult?</i> • <i>Are some problems or situations easier to play forward in time than others? What accounts for those differences?</i> • <i>What makes it difficult to anticipate second- or third-order effects of today's decisions and actions?</i>
1.3 Provide brief tutorial to participants Adapt content as needed ¹¹	→ [See tutorial slides provided.]
1.4 Provide Participant Exercise Overview and Tips Emphasize the exercise is about <u>practicing</u> skills important for strategic thinking.	→ <i>As we just discussed in the brief tutorial, part of thinking strategically involves the ability to expand your thinking beyond the present or the near-term future, think longer term, and anticipate potential future conditions. This is what we are going to be practicing today.</i> <p><i>Before we move into the exercise itself, I'd like to emphasize that what we are doing today is <u>practicing</u> a skill that is important for strategic thinking. This exercise is not about learning new concepts. It is not about making sure you can define what strategic foresight or thinking in time are. Rather, it is about practicing skills—strategic foresight/thinking in time—that are important for strategic thinking.</i></p> <p><i>This exercise, by itself, is not going to transform you into an expert strategic thinker. Developing the ability to think strategically takes a considerable amount of time, exposure to relevant experiences, a strong conceptual knowledge base, and a lot of practice.</i></p>

¹¹ The facilitator may choose to give the tutorial verbally, print out the tutorial for participants, project the content in PowerPoint, or some combination thereof.


Step	Sample Language
Provide an analogy.	<p data-bbox="823 203 1873 308"><i>So, you may want to think of this exercise as an activity that will help you learn to crawl...before you can learn to walk...and before you can ultimately learn to run and be a skilled strategic thinker.</i></p> <p data-bbox="823 349 1894 414">▶ <i>Another way to think about this exercise is akin to what young athletes experience on their way to becoming exceptional athletes.</i></p> <p data-bbox="823 438 1852 544"><i>A basketball player practices component skills such as dribbling, passing, and shooting free throws. Practicing these component skills—and doing so repeatedly and over time—is essential to becoming a skilled basketball player.</i></p> <p data-bbox="823 576 1927 747"><i>In the same way, what we’re doing today is a drill to help you practice the skills of strategic foresight/thinking in time—that is, the ability to anticipate future conditions and consider the long-term implications of current assumptions, decisions, and courses of action. Strategic foresight/thinking in time is just one (of many) skills you’ll need to be a powerful strategic thinker.</i></p> <p data-bbox="823 771 1915 876"><i>Also, remember, athletes don’t become great overnight. They have to practice over and over to develop the skills they need. This is the same with strategic thinking. We need to repeatedly practice the component skills necessary for being a great strategic thinker.</i></p>
Describe the activity.	<p data-bbox="823 917 1936 1128">▶ <i>To practice the skills of strategic foresight and thinking in time, we are going to work with a scenario description. I’ll give you that in a few minutes. Once you have that scenario, we are going to think about it in different ways. Your first task will be to develop an understanding of the current situation. Then I’m going to ask you to think back in time and consider how that situation might have come to be. After that, I’m going to ask you to envision how that scenario might evolve in the future.</i></p> <p data-bbox="823 1169 1936 1302"><i>Parts of this exercise may be uncomfortable for you. You may find yourself uncomfortable anticipating potential future scenarios without all the information. However, being able to anticipate potential future conditions in the midst of uncertainty is part of what we experience in real world operational settings, so it is important to practice.</i></p>

Step	Sample Language
2. ORIENT TO CURRENT SCENARIO¹² (30 minutes) 	
2.1 Refer participants to <i>Developing an Understanding</i> in their exercise aid	<p>→ <i>Before I distribute the scenario, please flip to the Developing an Understanding section of your exercise aid. You will see some information here that will help you in the first part of the exercise.</i></p>
2.2 Distribute the scenario to each participant¹³ Everyone in the group should have the same scenario.	
2.3 Ask participants to read the scenario and sketch their understanding of the problem	<p>→ <i>Now I would like everyone to read through the scenario. As you read, think about the nature of the problem reflected in the description.</i></p> <p><i>Take approximately 30 minutes and work independently. You are going to be working on two things: the first is an initial understanding of the situation described in the handout. The second is a rough sketch that depicts your view of the situation. Use your notebooks to create the sketch. Don't worry about making it pretty or ready for a PowerPoint slide. The point of the sketch is to help you think about the situation and understand it.</i></p> <p><i>As you develop your understanding and sketch, it is important that you think about the range of factors that could be at play: the political, economic, cultural, environmental, and technological factors, as well as military factors and stakeholders. You can use the Potential Factors to Consider box in your exercise aid to prompt your thinking. Your sketch should represent your understanding of the scenario including stakeholders, key factors and relationships among those factors.</i></p>

¹² The facilitator might elect to ask participants to complete Steps 2-4 outside of the classroom as homework in order to reduce the length of in-class time required. More specifically, the facilitator can conduct Step 1 in one session, ask participants to conduct Steps 2-4 outside of the classroom, and then regroup in another session for Steps 5-7.

¹³ Five example scenarios are provided with this exercise. However, the exercise facilitator should consider creating additional scenarios based on current events. Different scenarios can be used for repetition of the exercise. Tips for developing scenarios are provided in the *Facilitator Exercise Guide*.

Step	Sample Language
<p>Before moving to the next step of the exercise, check that everyone has some version of a rough sketch and is ready to move on.</p>	<p><i>The situational understanding and sketch you develop over the next 30 minutes will serve as a foundation for the remainder of the exercise. You will brief this understanding to each other later in the exercise.</i></p> <p><i>As you do this, it is important to recognize that there is no single right answer. There are a variety of ways that you could interpret and describe the situation.</i></p> <p><i>For now, the important thing is that you consider and account for multiple factors – and their interactions – in your description.</i></p>

3. THINK BACK IN TIME 
(Individual Activity)
 (30 minutes)

You have spent some time developing your understanding of the problem set depicted in the scenario, now I would like you to think back in time.

**3.1 Refer participants to
Timeline: Part 1 in their
 exercise aid**


→ *Take a look at Timeline: Part 1 in your exercise aid.*

**3.2 Ask participants to think back
 in time by 5 years and
 describe conditions and
 relationships that existed¹⁴**


→ *Imagine it is 5 years before the current situation described in the scenario. In other words, if we were here (at the current situation), I would like you to take that current situation and travel back in time by 5 years. What did the situation look like at that point in time?*

Your task is to think through (individually) and describe the set of conditions and relationships that existed 5 years prior to the current situation. Describe it in your Participant Aid using both words and sketches.

¹⁴ If participants get stuck and cannot move forward with the exercise due to lack of information, consider letting the group have a short 5-10 minute discussion about the situation represented in the scenario. The group can share facts and knowledge they have about the situation, so that they are all starting from a common base of knowledge.

Step	Sample Language
	<p><i>Again, there is no right or wrong answer to this. The situation can be interpreted and described in various ways. Also, I recognize that you do not have all the information. Normally, you would likely gather additional information to help you understand the history. In this situation, use some creativity to fill in the gaps.</i></p> <p><i>Also, you may want to jot down three to five key questions for which you would like answers. Jot down the questions, and then create some answers or assumptions for now. Then move forward based on those assumptions.</i></p>
<p>4. ENVISION FUTURE SCENARIOS (Individual Activity)  (25-30 minutes)</p>	<p><i>So far, you have developed an initial understanding of the <u>current</u> situation provided in the scenario description.</i></p> <p><i>You have also considered what the situation might have looked like 5 years <u>prior</u> to today.</i></p> <p><i>Now, I'd like you to think <u>forward</u> in time. Working individually, consider what the situation might look like 2 years from now.</i></p>
<p>4.1 Refer participants to <i>Timeline: Part 2</i> in the Exercise Aid</p>	<p>→ <i>Please flip to the section of your aid entitled Timeline Part 2. This will help you orient to the time horizon we're considering.</i></p>
<p>4.2 Ask participants to consider a <u>probable</u> scenario 2 years¹⁵ into the future</p> <p>They do not need to develop a full description of the probable scenario, but they may want to jot notes. The idea is to get the probable scenario out first, to free up</p>	<p>→ <i>Given that there could be a variety of potential future situations, I'd like you to first think about a scenario 2 years out that is probable. In other words, based on your current understanding of the situation, what situation will we likely see in 2 years?</i></p> <p><i>Take about 5 minutes to think about this. We're only going to spend 5 minutes on this because the <u>probable</u> scenario is likely the first and easiest scenario to consider. Probable scenarios tend to reflect incremental changes and a gradual evolution of circumstances, rather than a more dramatic disruption that substantially changes the course of events.</i></p>

¹⁵ Once participants gain experience in thinking 2 years out, the facilitator should challenge them further in subsequent iterations of the exercise by lengthening the time horizon—e.g., consider the situation 5 years out, 10 years out. When doing this, participants should think back in time twice as long as they think forward in time. For example, think back 10 years to think forward 5; think back 20 years to think forward 10.


Step	Sample Language
<p>their minds to think of possible scenarios next.</p> <p>4.3 Ask participants to envision and write a description of a possible scenario 2 years into the future</p> 	<p><i>Once you've spent a few minutes thinking about a <u>probable</u> scenario, you'll be able to spend more time after that thinking about <u>possible</u> scenarios.</i></p> <p>→ <i>You don't need to write a description or create a sketch of the probable scenario, but you may want to jot down some notes or bullet points.</i></p> <p><i>Now that you have considered what the situation is likely to be 2 years from now, think about one more potential future scenario. Think about a scenario that may not be likely, but is <u>possible</u>. It could happen, even though it's not what seems most obvious or probable.</i></p> <p><i>Please spend about 15 minutes thinking about what the situation could <u>possibly</u> be 2 years from today and write a brief description of it. If it helps you to think it through, you can also create a sketch describing the situation.</i></p> <p><i>Later in this exercise, you will be presenting your possible future scenarios to one another. Remember, there is no right or wrong answer to this.</i></p>
<p>5. MID-EXERCISE REFLECTION (Individual and Group Activity) (15 minutes)</p> <p>5.1 Refer participants to <i>Mid-Exercise Reflection</i> in their exercise aid</p> <p>5.2 Ask participants to consider the questions and write notes in the response</p>	<p><i>At this point, I'd like us take a few minutes to think about the activities we have conducted so far.</i></p> <p>→ <i>Please take a look at the section of your exercise aid entitled Mid-Exercise Reflection. There is a set of questions here that I would like you to think about.</i></p> <p>→ <i>Take 10-15 minutes, working individually, to consider each of these questions and jot down some notes in response.</i></p>
<p>6. PRESENT SCENARIOS (Group Activity) (30 minutes)</p> <p>6.1 Break into small groups of three to four people</p>	<p><i>We are now going to present what we have come up with throughout the exercise so far.</i></p> <p>→ <i>I would like you to form small groups of three to four people. It does not matter who is in your group.</i></p>

Step	Sample Language
<p>6.2 Each participant presents an understanding of the current situation and the envisioned <u>possible</u> future¹⁶</p> <p>Encourage members of small groups to ask questions and make comments on each person's briefing.</p>	<p>→ <i>Your task is to present two things to your small group:</i></p> <ul style="list-style-type: none"> • <i>Your understanding of the current situation depicted in the scenario description you were given at the beginning of this exercise.</i> • <i>The <u>possible</u> future situation you envisioned.</i> <p><i>Each person should take approximately 5 minutes to present their work to their group. Please share your sketches with one another as you brief.</i></p>
<p>6.3 Refer participants to the <i>Small Group Discussion</i> part of the aid</p>	<p>→ <i>After you each present, I'd like you to flip to the section of your exercise aid entitled Small Group Discussion. Here you will find a few questions to consider and discuss as a group.</i></p>
<p>6.4 Encourage participants to discuss similarities/ differences in the possible futures they envisioned</p>	<p>→ <i>What I'd like you to consider is this: You all started in the same place, with the same scenario. How similar is where you ended up, in the future?</i></p> <p><i>I would like you to explore and discuss why/how you came to different places with your envisioned future scenarios.</i></p>
<hr/>	
<p>7. REFLECTION AND DEBRIEF (Group Activity) (25 minutes)</p>	
<p>7.1 Reconvene into one large group</p>	<p>→ <i>We are now going to spend some time debriefing as a group on the activities we conducted in this exercise.</i></p>
<p>7.2 Refer participants to <i>Group Debrief</i> in their exercise aid; ask them to consider the questions individually</p>	<p>→ <i>Flip to the Group Debrief section in your exercise aid where you will see some questions. Spend a couple of minutes by yourself, thinking about them and jotting down some ideas. Then we'll discuss this as a group.</i></p>

¹⁶ As participants are presenting their scenario, facilitator should be thinking about whether any of the scenarios might be usable for Phase 2 of this exercise. Facilitator may use one of the scenarios created by a participant, create a hybrid, or create his/her own scenario for use in Phase 2.

Step	Sample Language
<p>7.3 Facilitate group reflection and discussion of debrief questions</p> <p>Note: We recommend practicing Phase 1 multiple times on different occasions, before proceeding with Phase 2. Facilitators should give participants a different scenario each time.</p>	<p>→ <i>[Facilitate discussion around the following questions.]</i></p> <ol style="list-style-type: none"> 1. <i>In what ways are the possible futures envisioned by your group similar? In what ways are they different?</i> 2. <i>Consider and discuss how or why you came to different places with your scenarios. For example:</i> <ul style="list-style-type: none"> ○ <i>What do you see as the most significant factors that might influence the future scenarios? Why?</i> ○ <i>Were the factors you considered different from those considered by others in this group? How so?</i> ○ <i>What assumptions did you make in developing the two future scenarios? How were those assumptions different from the assumptions of others in this group?</i> ○ <i>What might account for the different factors you considered? Or for the different assumptions you made?</i> 3. <i>Now that you have discussed your considerations with others in your group, have you detected any blind spots you might have had when envisioning your possible future scenario(s)? What are they? How might you avoid those blind spots in the future?</i>

PHASE 2: Shaping the Future¹⁷

Step	Sample Language
1. CONSIDER POTENTIAL ACTIONS  (Individual Activity) (30 minutes)	<i>This next phase of activities builds on to the previous activities in which you practiced the skill of strategic foresight to envision potential future conditions.</i> <i>In this phase, we are going to work with one of the future scenarios developed in the previous phase. We are going to consider initiatives, courses of action (COA), and strategies to pursue in order to shape the future in a way that aligns with a desired future scenario.</i>
1.1 Select one possible future scenario developed by a participant in Phase 1 ¹⁸ Post description with main points and sketch on a projector, whiteboard, or other common point of reference. Then describe scenario to participants.	<i>→ The Army has received direction from higher command that this [posted] future scenario is in the U.S.'s best interest. You are responsible for shaping the future in a way that enables us to realize the envisioned future situation.</i> <i>Your task is to develop ideas for how to maximize the likelihood of realizing this future situation.</i>
1.2 Refer participants to <i>Shaping the Future</i> in their exercise aid	<i>→ Please take a look at the Shaping the Future section of your exercise aid.</i>
1.3 Ask participants to generate ideas for how to shape the future to realize the envisioned scenario (Individual Activity) Participants should consider <i>Shaping the Future</i> questions while generating ideas.	<i>→ Spend about 20-25 minutes working individually and generating ideas in response to the Shaping the Future questions. The overarching goal is to generate ideas for how we can shape the future in a way that allows us to realize the envisioned future scenario.</i> <i>Think about this activity as a brainstorming activity. The goal is to get all ideas out. Think broadly about the potential things the U.S. could do to get us to the future scenario. After this activity, you will present your ideas in a small group.</i>

¹⁷ Phase 1 and Phase 2 can be conducted on different days or in different sessions. This will give the facilitator time to choose (or create) a scenario to use.

¹⁸ The scenario selected should be one that appears favorable to U.S. interests, based on the facilitator's judgment. The scenario chosen should be sufficiently rich and complex to spur thinking, diverse idea generation, and discussion. Potential variation: Facilitator develops his/her own possible future scenario and sketch to use for this portion of the exercise. Facilitator should lay out each of the major points on a whiteboard or other common reference.

Step	Sample Language
<p>2. BRIEF RECOMMENDATIONS (30 minutes)</p> <p>2.1 Break into small groups of three to four people</p> <p>2.2 Ask participants to brief their responses and recommendations to their small group</p> <p>2.3 Refer participants to <i>Ripple Effects</i> in their exercise aid</p> <p>Encourage participants to ask questions and engage in discussion about potential second- and third-order effects each COA or overall strategy might have.</p>	<p>→ <i>Now that you have spent some time generating ideas, I would like you to gather into a small group of three to four people.</i></p> <p>→ <i>Share your responses to the Shaping the Future questions and brief your recommendations for how to shape the future in a way that enables the U.S. to realize this desired future scenario.</i></p> <p><i>This is the time and place for building on ideas (rather than critiquing). As each person shares their recommended approach, I encourage you to ask that person questions or provide comments that <u>build</u> on the ideas.</i></p> <p>→ <i>After each person shares their recommendations, as a group, please take a look at the questions in the Ripple Effects section of your exercise aid.</i></p> <p><i>I'd like you to consider and discuss the potential effects of your recommended approach on multiple factors – such as on individual stakeholders or stakeholder groups, economic factors, political factors, etc. Consider possible unintended consequences as part of this discussion.</i></p>
<p>3. FINAL REFLECTION AND DEBRIEF (Individual and Group Activity) (30 minutes)</p> <p>3.1 Refer participants to <i>Shaping Debrief</i> in their exercise aid</p>	<p><i>We are now going to spend some time thinking about what we have done in this exercise.</i></p> <p>→ <i>First, flip to Shaping Debrief in your exercise aid where you will see a set of questions to consider.</i></p>

Step	Sample Language
Ask participants to reflect on <i>Shaping Debrief</i> questions individually	<p>→ <i>Spend 5-10 minutes, individually, thinking about the questions posed under Shaping Debrief. As you are thinking about the questions, please write some notes in response.</i></p>
3.2 Reconvene into large group	<p>→ <i>Now that you have considered these questions individually, I would like to discuss them as a group.</i></p>
3.3 Facilitate group discussion	<p>→ <i>1. What assumptions did you make when developing your recommended course of action (COA)?</i></p> <p><i>2. How might you test or verify those assumptions?</i></p> <p><i>3. In this exercise, you were not held accountable for the accuracy of future circumstances that you envisioned, or for the ideas you developed for shaping the future. But when you use strategic foresight in real-world operational contexts, you will likely be held accountable. How might that expectation of accountability influence how you approach this activity in real operational settings?</i></p> <p><i>Consider your initial understanding of the situation. How has your view of it changed based on this exercise?</i></p>



Envisioning Potential Futures

Overview

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What's the purpose of this exercise?



- **Primary Purpose:** To build your strategic foresight/thinking in time skills.

Strategic Foresight – Generating concepts of possible future alternatives based on attention to a diverse range of factors and their interactions.

Thinking in Time – Alternating between thinking about the past, present, and future.

- **Secondary Purpose:** To practice ways of shaping the future in the context of a scenario.

Image credit: shutterstock.com

The exercise will also help you practice these additional skills:

- **Questioning** – An active learning strategy used to understand problems, relevant factors, interdependencies, assumptions, and differing perspectives more deeply.
- **Systems Thinking** – Recognizing and describing relationships and interdependencies among factors that might otherwise appear unrelated.
- **Sensegiving** – Communicating one’s understanding of complex or abstract concepts to others.

What will I do in the exercise?

Read a brief description of an emerging global “hot spot”

Sketch your understanding of the problem, considering a range of types of factors

Think back in time 5 years and describe the conditions that existed then

Think forward in time and describe alternative futures

Consider possible courses of action to shape the future

Reflect on the exercise and discuss with the group

What will I gain from this exercise?

By the end of the exercise, you should be able to:

- Appreciate the value of **expanding one's thinking beyond the present** and/or near-term future.
- Recognize that current assumptions, decisions, and courses of action can have **long-term implications**.
- Recognize that **thinking back in time (historically) can support one's ability to anticipate** how the situation may evolve into the future.
- **Consider a range of factors** (e.g., military, political, socio-cultural, religious, economic, physical environment, technological) and their **interactions** when making sense of a current situation and anticipating potential futures.
- Create and present descriptions of potential futures.



Envisioning Potential Futures

Brief Tutorial

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WHY DOES FORESIGHT/ THINKING IN TIME MATTER?

They are key building blocks to developing our strategic thinking skills.

- Involves consideration of potential future conditions.
 - To think about a situation and how it might play out in the future.
 - Supports our ability to examine different ways a situation might evolve.
 - Requires attention to multiple factors such as social, economic, political, military, environmental, and technological trends and interactions.
- Allows us to generate strategies and initiatives we might pursue to shape the future.
- Enables us to set priorities and allocate resources.

WHAT'S HARD?

Factors that may hinder foresight and thinking in time:

- Army leaders typically face a host of immediate problems and the need to put out fires.
 - Focus on current and near-term problems can crowd out consideration of the longer-term future.
- Anticipating potential future scenarios means dealing with complexity.
 - Requires thinking holistically about multiple factors and how they might interact to affect future events.
 - Requires that we expand current frameworks (e.g., political, military, economic, social, infrastructure, physical environment, and time—PMESII-PT), to consider interactions and connections across those factors. Can be challenging to break the silos.

WHAT'S HARD?

Factors that may hinder foresight and thinking in time: (continued)

- We tend to be overly optimistic in our predictions about future situations, particularly when we have personal involvement in those situations.
- The range of resources (information, people) we use to identify patterns and trends is often limited.
 - May lead to an incomplete picture.
 - May miss key trends and form incorrect interpretations.
- We tend to focus on what is happening now and project that forward—rather than imagining the wild card/unexpected disruption that could change everything.

Tips and Strategies for Engaging in Strategic Foresight/Thinking in Time

- Think backward in time in order to think into the future:
 - Helps move your thinking out of *right now*.
 - Will help you understand trends, trajectories, and gaps.
 - Go backward twice as far as you intend to think forward (e.g., think back 10 years in order to think forward 5 years).
- Think about futures that are *possible*, not just the future that seems most obvious.
- Consider that what matters most in the present, and what mattered in the past, may not matter so much in future events. If it doesn't, what might?



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Tips and Strategies for Engaging in Strategic Foresight/Thinking in Time (continued)

- Recognize that whatever you come up with, you are **likely to be off base**.
 - The point isn't to figure out the right answer, but to appreciate a given situation more fully so you can effectively consider how it might evolve into the future.
- Go wide in your information search:
 - **Consult a wide variety of sources** (e.g., people of diverse backgrounds and varied publications, websites, and blogs).
 - **Gather information about a range of topic areas** (e.g., politics, economics, technology, social issues, etc.).
 - **Consider the perspectives of the sources** you are using and how those perspectives might contribute to the information provided and the conclusions drawn.

ENVISIONING POTENTIAL FUTURES PARTICIPANT EXERCISE OVERVIEW AND TIPS

What's the Purpose of the Exercise?

The purpose of this exercise is to give you practice in strategic foresight and thinking in time – anticipating how situations may evolve into the future. Specifically, you will practice:

- Expanding your thinking beyond the present and/or near-term future.
- Considering the long-term implications of current assumptions, decisions, and courses of action.
- Thinking backward in time as a way to better anticipate how the situation may evolve into the future.
- Thinking holistically and about multiple factors and their interactions as a way to anticipate potential second- and third-order effects.

Why Is This Skillset Important for Strategic Thinking?

Strategic foresight is the ability to anticipate potential futures. Strategic foresight involves thinking across time—that is, considering current and historical circumstances and envisioning potential future environments based on attention to military, economic, socio-cultural, technological, and political trends and interactions.

Thinking in time and envisioning potential futures is essential for strategic thinking. It supports our ability to conceptualize possible strategies and initiatives we might pursue to shape how a current situation evolves into the future. This, in turn, allows us to set priorities and effectively allocate resources.

Why Is This Skillset Challenging?

Strategic foresight and thinking in time are challenging for a number of reasons. For example:

Tips

You can enhance your ability to think into the future by following these tips:

- ✓ Think twice as far backward in time as you want to think forward (e.g., back 10 years to forward 5). This will help you understand trends, trajectories, gaps and discontinuities, and the impacts of time.
- ✓ Consider not only futures that are probable (i.e., likely), but also futures that are possible.
- ✓ Recognize that what matters most in the present and what mattered in the past is related to, but may not always be, the major driver of future events.
- ✓ Consult a wide variety of sources (e.g., people of diverse backgrounds, diverse publications) to gather information about current events, patterns, and trends in a range of areas such as politics, economics, technology, and social issues.
- ✓ Consider perspectives of your sources and how those perspectives might contribute to the information provided and the conclusions drawn.

- Army leaders may find that they are constantly dealing with immediate problems. Focusing heavily on the present and the near-term future can leave limited opportunity to think about the long-term future.
- The ability to anticipate potential future scenarios requires that we think holistically and consider multiple factors from various frameworks—such as political, military, environmental, economic, social, infrastructure, information, physical environment, and time (PMESII-PT)—and how they might interact to affect future events. Although we are able to consider multiple factors, it is often a challenge to make connections across those factors.
- We tend to be overly optimistic in our predictions about future situations, particularly when we have personal involvement in those situations.
- We tend to refer to a limited amount of information and personal sources to identify patterns and trends. This narrow focus can lead us to miss important trends and form incorrect interpretations.

More Tips

- ✓ Recognize that whatever you come up with, you are likely to be off-base. The point is not to have the right answer, but to appreciate a given situation more fully so you can effectively consider how it might evolve into the future.
- ✓ Assess not only what is currently occurring, but also disruptions that could dramatically change the course of events.

As with any skill, practice and reflection will enhance your ability to think forward in time in order to envision potential future states.



ENVISIONING POTENTIAL FUTURES PARTICIPANT EXERCISE AID

Pre-Exercise Reflection

Instructions: Today we are going to work on foresight and thinking in time skills. Before we get to the exercise, take a few minutes to think and reflect on the following questions. After we think about them individually, we will discuss them as a group.

1. For many of us, it is difficult to think beyond the present or near-term future, to consider long-term implications of our decisions, and to anticipate future circumstances. Take a moment to consider what is involved in visualizing how a current situation or problem may change over time. What about the activity seems straightforward? What is difficult?
2. Are some problems or situations easier to play forward in time than others? What accounts for those differences?
3. What makes it difficult to anticipate second- or third-order effects of today's decisions and actions?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Developing an Understanding (Individual Activity)

Instructions: Take approximately 25-30 minutes and work independently. After reading through the scenario you were given, read through the rest of this sheet and then develop two things:

1. A description of your understanding of the current situation or problem described in the scenario (in bullet points or paragraph form).
2. A rough sketch that depicts your view of the situation. Your sketch might include stakeholders, key factors, and relationships among them, and any other features of the situation that strike you as important.

As you develop your understanding and sketch, it is important that you think about the range of factors that could be at play. Below is a set of factors that are often part of complex problems. Use this set of factors to help you think about the nature of the problems depicted in the scenario.

You will likely recognize the factors listed below as those represented in the PMESII-PT framework. However, do not be limited by that framework or the factors listed here. Take care to consider not only the factors in isolation; consider their relationships and interactions as well.

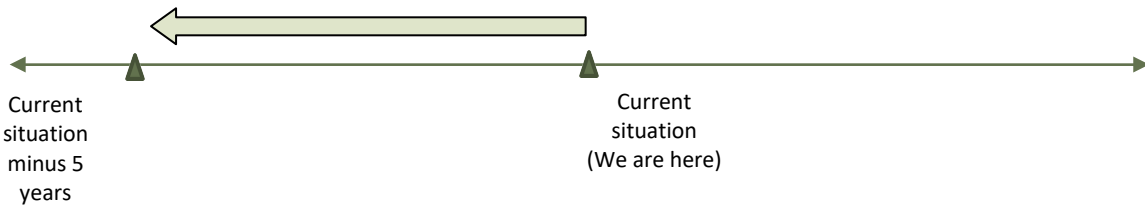
The situational understanding and sketch you develop over the next 30 minutes is going to serve as a foundation for the remainder of the exercise. You will be briefing this understanding to each other later on in the exercise.

Potential Factors to Consider		
Cultural	Military	Religion
Economic	Persons of Influence	Social
Informational	Physical Environment	Technological
Infrastructure	Political	Time
Key Stakeholders		

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Timeline: Part 1

Instructions: Based on your current understanding of the situation (considered in Step 1), think *back* in time by 5 years. In other words, take that current situation and travel back in time by 5 years. What did the situation look like at that point in time? Refer back to the previous section of this aid to ensure you are considering multiple factors as you think about what the situation looked like 5 years ago.



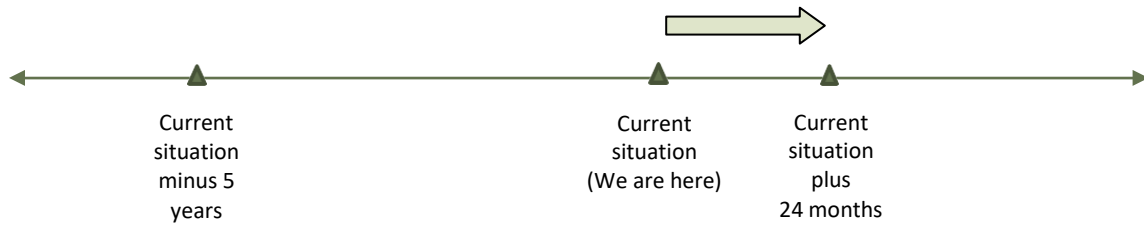
Describe this set of conditions and relationships, using both words and sketches.¹⁹

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

¹⁹ It is likely that you do not have all the information you need or want to do this activity. That is okay. In fact, it is representative of what often happens in the operational environment. The point of this exercise is to practice thinking in time, rather than to get the right answer. To address the lack of information and help you move forward, you may want to jot down the top three to five questions to which you would like answers. Then, construct answers to those questions, and note your assumptions. Use those assumptions as a basis for moving forward with the activity.

Timeline: Part 2

Instructions: Assume again that we are in the present. Now, run the scenario *forward* in time and consider what the situation might look like 2 years out from the present. Refer to the previous section of this aid to ensure you are considering multiple factors as you work this through.²⁰



You are going to generate two different future scenarios:

1. First, think about a future scenario that is *probable* (i.e., highly likely). Jot down a few notes describing that scenario.

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

²⁰ Note: When trying to come up with future scenarios, you may find you have a lot of questions. It may help to jot down the questions you have, note your assumptions, and then move forward based on those assumptions.

2. Now, think about a future scenario that is possible. Write a brief description of the possible future situation. You can also sketch it if that helps you depict the situation. Later in this exercise, you will be presenting your possible future scenario to one another.

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Mid-Exercise Reflection (Individual Activity)

Instructions: Now that you have developed a probable and a possible future scenario, work on your own to consider and jot down some notes on the following questions:

1. What assumptions did you make in developing the two future scenarios?
2. It is likely that you focused on some factors more than others? Which ones did you focus on, and why those more than others?
3. What do you see as the most significant factors that might influence each of the future scenarios? Are they the same for the two scenarios? If not, how are they different?
4. What effect did thinking *back* in time have on thinking *forward* in time? Was it helpful? Why or why not?
5. What was easier for you to think about – a *possible* future scenario, or a *probable* (likely) scenario? Why? How was it different?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Small Group Discussion

Instructions: After each person presents his/her *possible* future scenario to the small group, consider and discuss the following.

You all started in the same place, with the same scenario.

1. In what ways is the possible future you envisioned similar to that of others in your group? In what ways is it different?
2. Consider and discuss how and why you came to different places with your scenarios. For example:
 - What do you see as the most significant factors that might influence the future scenarios? Why?
 - Were the factors you considered different from those considered by others in this group? How so?
 - What assumptions did you make in developing the two future scenarios? How were those assumptions different from the assumptions of others in this group?
 - What might account for the different factors you considered compared to others in your group? Or for the different assumptions you made?
 - What might account for the factors and assumptions that members of the group had in common?
3. Now that you have discussed your considerations with others in your group, have you detected any blind spots you might have had when envisioning your possible future scenario(s)? What are they? How might you avoid those blind spots in the future?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Group Debrief and Reflection

Instructions: Take a few minutes to consider and make some notes on the following questions. Then discuss your responses as a group.

1. What was particularly challenging about thinking into the future? What helped you to think into the future?
2. Consider the differences you identified between the *probable* and the *possible* futures. How might it be helpful to consider both when thinking forward in time?
3. How did creating a sketch help you think about a future scenario, if at all? How did seeing sketches that others created help you understand the future they had envisioned?
4. What were the major factors that influenced your predictions about future events? Why those factors and not others—that is, what made those particularly important?
5. Were there certain factors you considered as you developed an understanding of this particular current situation that did not seem relevant for anticipating the future? What are they, and what made those factors less relevant for considering potential future conditions? Now that you have seen and heard what others in the group came up with, has your view of what is and is not relevant changed?
6. What did you notice about the types of futures you and others envisioned? Were there common themes? For example, were the envisioned futures generally positive/desirable for the U.S.? Did they have more of a negative slant? What might account for that?
7. What do you see as the advantages and drawbacks to envisioning desirable vs. undesirable futures?
8. Did any of your classmates' insights in this exercise strike you as particularly effective or innovative? Which ones? How so?
9. Based on your experience in this exercise, what do you see as your strengths and/or weaknesses in anticipating potential futures?
10. What might you take from this exercise to apply in your work?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Phase 2

Shaping the Future

Instructions: We have received direction from higher command that this [posted] future scenario is in the U.S.'s best interest. You are responsible for shaping the future in a way that enables us to realize this envisioned future situation.

Please consider the following questions and write some brief notes in response.

After this activity, you will be presenting your responses and recommended actions to others in your small group.

1. What can the U.S. do to maximize the likelihood that the current situation will evolve towards this desired future scenario? What courses of action should the U.S. take to increase the probability of this future scenario?
2. What effect will those actions have? How do you expect the present situation to change, based on the actions you would take? Why?
3. What actions should the U.S. *avoid* taking that might minimize the likelihood of achieving this desired future scenario? In what ways would those actions reduce the likelihood of the desired future scenario?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Ripple Effects

Instructions: After you have presented your recommended actions for shaping the future to your small group, consider each person's ideas and discuss the following:

1. What second- and third-order effects (both intended and unintended) might these courses of action have?
2. What second- or third-order effects (both intended and unintended) might these courses of action have on the [fill in the blank]?

Example topics for *fill in the blank* include:

- country's economy
- stability of the country's borders and neighboring countries
- stability of the region
- security of allied forces
- political climate of the region
- social relations among various groups
- allies' view of the U.S.
- stability of the country's government
- country's political leadership

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

Shaping Debrief

Instructions: After developing and presenting your ideas for how to shape the future, consider the following questions and jot down some notes. Then discuss your responses as a group.

1. What assumptions did you make when developing your recommended course of action (COA)?
2. How might you test or verify those assumptions?
3. In this exercise, you were not held accountable for the accuracy of future circumstances that you envisioned, nor for the ideas that you developed for shaping the future. However, when you use strategic foresight and thinking in time in real-world operational contexts, you likely will be held accountable. How might the expectation of accountability influence how you approach this activity in real operational settings?
4. Consider your initial understanding of the situation. How has your view of it changed based on this exercise?

USE THE SPACE BELOW TO JOT DOWN YOUR THOUGHTS AND IDEAS.

**STRATEGIC THINKING SKILL-BUILDING EXERCISES
SUPPLEMENTAL MATERIALS**

**STRATEGIC SKILL-BUILDING EXERCISE
SUPPLEMENTAL MATERIALS**

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Enhancing Strategic Thinking: Skill-Building Exercises

Image credit: shutterstock.com

Note to facilitators: The slides for the exercises have been developed to provide the following to participants:

- 1) Context for the skill-building exercise – including the importance of practicing foundational skills to become an effective strategic thinker
- 2) An overview of the exercise – including the purpose, activities, and learning objectives
- 3) Brief tutorial

Facilitators may choose to adapt, add to, or rearrange any portions of this slide deck to introduce the exercise to participants.

Slides contained in the *Background and Context* portion of the slide deck are only included here in the *Supplemental Materials* section but can be used to provide context for each of the individual exercises. The slides for each individual exercise are located in their respective sections.



Background and Context

Current and Future Army leaders need to be able to think strategically.

- Army leaders need to **anticipate change**, think **long-term**, **envision potential futures**, and **exploit opportunities** to serve national interests.
- Before Army leaders step into positions that require them to function as strategic thinkers and planners, they need to **hone the building block skills that underpin strategic thinking**.

What skills are foundational to strategic thinking ability?

Competency	A Strategic Thinker...
Comprehensive Information Gathering	<ul style="list-style-type: none"> continuously scans the environment. seeks information from disparate sources. suspends judgment and maintains an open mind. considers other perspectives. possesses advanced listening and research skills.
Learning	<ul style="list-style-type: none"> is a lifelong learner. iteratively tests, reflects on, conceptualizes, and manages knowledge to gain insights on the environment. continuously examines his/her own thinking.
Critical Thinking	<ul style="list-style-type: none"> identifies the essential aspects of a situation. questions assumptions and asks relevant questions. seeks to identify meaningful connections and distinctions. understands nuance. considers the limits of data.

What skills are foundational to strategic thinking ability? (continued)

Competency	A Strategic Thinker...
Thinking in Time	<ul style="list-style-type: none"> understands historical and contemporary contexts. recognizes patterns. forecasts possible futures. anticipates second- and third-order effects. has a long-term perspective.
Innovative Thinking	<ul style="list-style-type: none"> generates creative and novel ideas, concepts, and approaches, independent of conventional norms.
Systems Thinking	<ul style="list-style-type: none"> uses a holistic perspective of the dynamic and complex environment. identifies interrelationships and integrates disparate. factors into a comprehensive whole.

What else is important to strategic thinking ability?

ST Enablers	A Strategic Thinker...
Knowledge	<ul style="list-style-type: none">• has a solid foundation for strategic thinking based in:<ul style="list-style-type: none">○ a broad general knowledge of many disciplines (e.g., geo-politics, world religions/cultures, economics, technology, sociology).○ knowledge specific to a strategic environment (e.g., local/regional customs, history, stakeholders).
Collaboration	<ul style="list-style-type: none">• leverages the capabilities of others in a team or informal network (e.g., through cooperation, leadership, building trust, conflict management) to supplement his/her own strategic thinking.
Communication	<ul style="list-style-type: none">• communicates candidly and effectively to gain individual understanding and move to the shared understanding required for strategy implementation• is adept at use of multiple media formats (oral, written, visual)• communicates well with diverse audiences that require tailored and persuasive messages
Emotional Regulation	<ul style="list-style-type: none">• is intellectually humble• accounts for his/her own natural limitations and biases related to emotion, perspective, and self-interest• maintains respect for differing values and priorities

Strategic thinking skill-building exercises will help you build skills needed for strategic thinking.

Exercises in this series include:

- **Reflecting on the Environment** – provides practice in reflective thinking, learning from experience.
- **Questioning to Deepen Learning** – provides practice in questioning.
- **Telling a Story** – provides practice systems thinking, synthesis.
- **Envisioning Potential Futures** – provides practice in thinking in time, strategic foresight.

Think of these exercises as comparable to an athletic drill.

- Professional basketball players don't just play a lot of basketball.
- They practice component skills – ball handling, shooting baskets, rebounding, and footwork.
- Practicing these foundational skills – repeatedly and over time – is essential to becoming a skilled basketball player.



Image credit: <http://inspirationsbasketball.com/basketball-1-1-1/>

Developing strategic thinking ability also requires time, practice, and attention to foundational skills.

- Doing any of the exercises once or twice will not transform you into a strategic thinker.
- They are analogous to the drills that athletes use to hone their skills.
- Developing advanced ST skills means **repeatedly practicing** the foundational skills necessary to become a great strategic thinker.
- The exercises can help you practice some of the (many) skills you'll need in order to become a skilled strategic thinker.



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IMAGES

These images are for use with the *Questioning to Deepen Learning* and *Telling a Story: Connecting the Dots* exercises.

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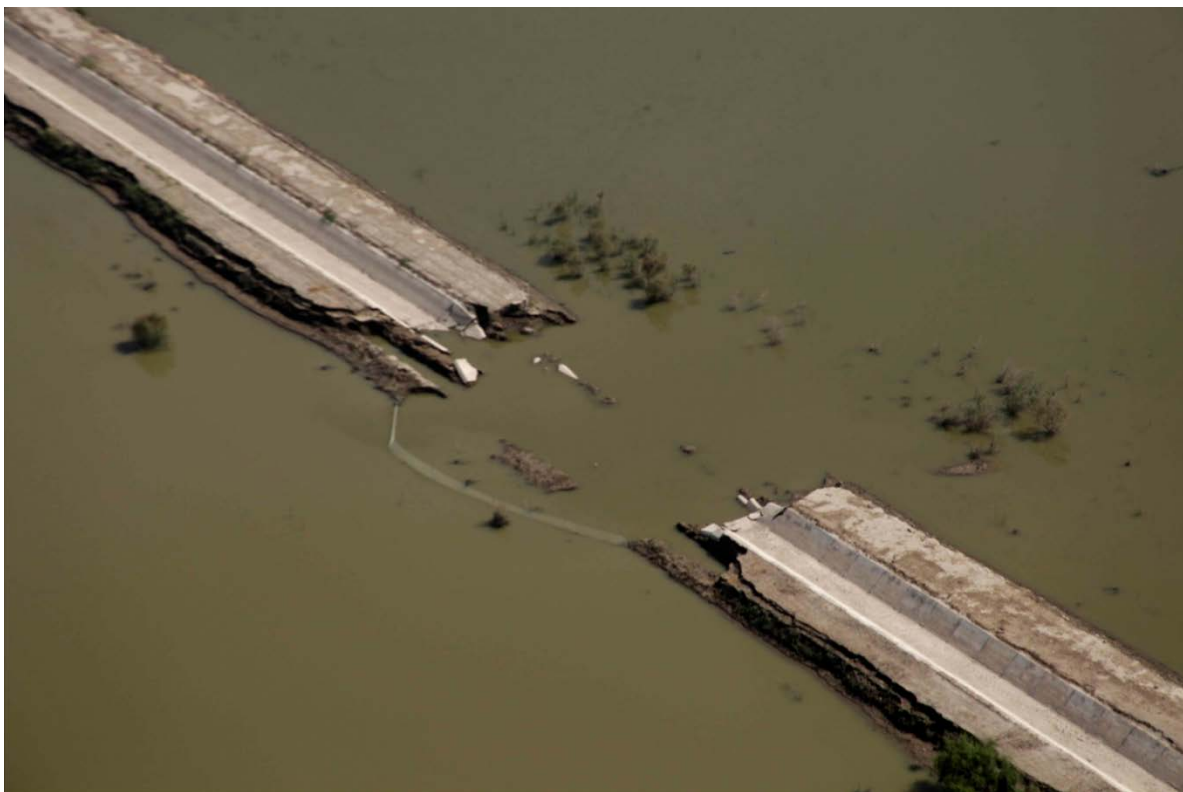
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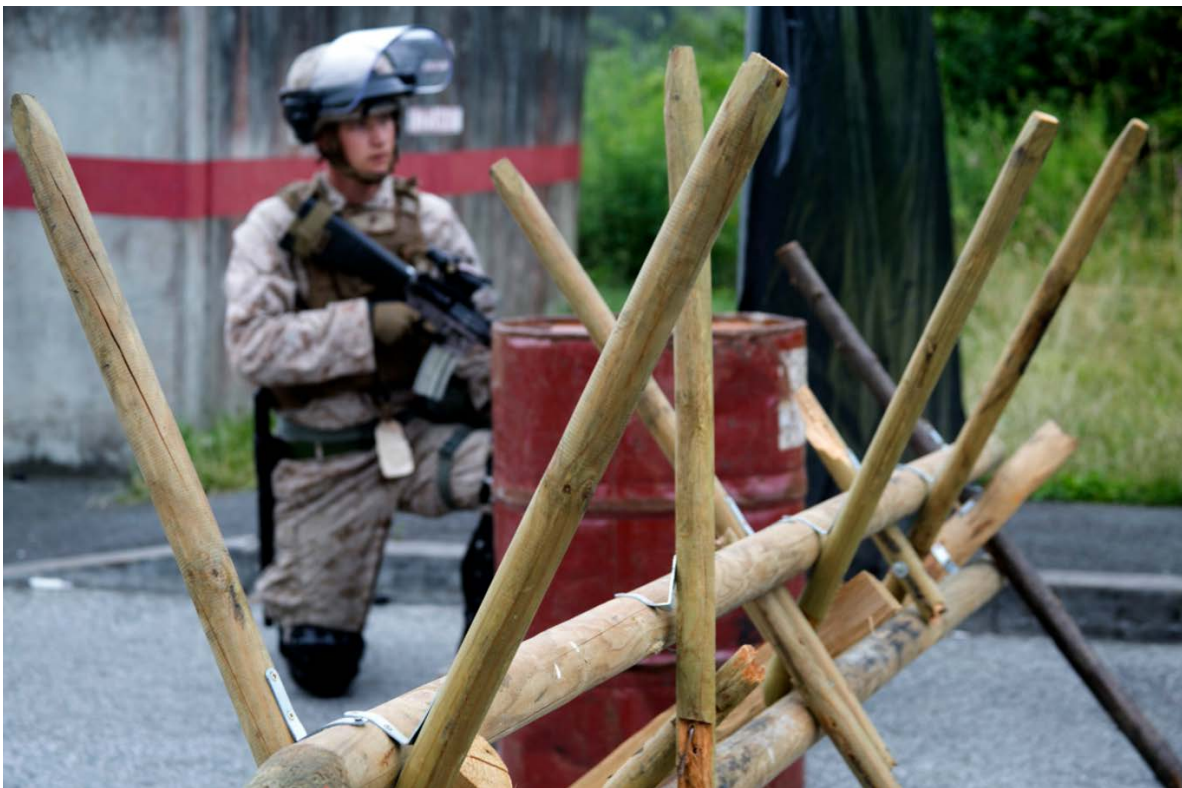
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ENVISIONING POTENTIAL FUTURES SAMPLE SCENARIOS

This document contains five example scenarios that can be used as a basis for the *Envisioning Potential Futures* exercise. Facilitators can also develop their own scenario(s) based on current events. The 5 synopses in this document reflect circumstances in global hotspots identified by the Council on Foreign Relations' Center for Preventive Action. The hotspots refer to areas of potential violent conflicts and sources of political instability that could impact U.S. interests. The Council provides three different tiers of hotspots, which correspond to prevention priorities. We chose to develop synopses of the Tier 3 hotspots, based on an assumption that exercise participants may have spent less time thinking and analyzing these than the Tier 1 and Tier 2 hotspots. Thus, they may stretch their thinking more.

Deepening Crisis in Venezuela

Venezuela is in the midst of a significant economic and political crisis. Oil is the cornerstone of the Venezuelan economy, accounting for more than 96% of its export earnings. Many oil-producing countries have large financial reserves to tide them through periods of sagging revenues. This is not the case for Venezuela, which was failing to make ends meet even when oil was \$115 a barrel. Dramatically lower oil prices on the international market have led to skyrocketing inflation and shortages of basic consumer goods. Venezuela's citizens face a severe shortage of food, medicine, and other basic necessities, and there is growing frustration and political unrest in the face of the country's ongoing economic problems.

Although the current President, Nicolas Maduro, was handpicked by his predecessor Hugo Chavez, he has never had popular support. Since February 2014, there have been multiple anti-government demonstrations, and the government has cracked down heavily on the political opposition, responding to anti-government protests with violence. In November 2014, Human Rights Watch reported more than 150 victims of violence due to opposition suppression efforts in the country. Despite protests over the legitimacy of the 2018 presidential election, Maduro began his second term on January 10, 2019.

Maduro has blamed the country's recent problems on the U.S., citing U.S. attempts to overthrow his government and to wage an economic war on his country. The U.S. has responded to the Venezuelan government's suppression of dissent and violence against protestors by imposing sanctions against key government officials. The Obama administration has characterized the situation in Venezuela as "an extraordinary threat to the national security and foreign policy of the United States." In response to U.S. sanctions, Maduro sought and received authority from his legislature to govern by decree until the end of 2014. The Union of South American Nations (UNASUR) called on the U.S. to revoke sanctions and respect the country's sovereignty.

Soured relations between the U.S. and Venezuela are occurring against a backdrop of significant economic ties between the two countries. Currently, the United States is Venezuela's most important trading partner. Venezuela is one of the top five suppliers of foreign oil to the United States. About 500 U.S. companies are represented in Venezuela, with U.S. foreign direct investment in Venezuela concentrated largely in the petroleum, manufacturing, and finance sectors. In 2017, Goldman Sachs "loaned" the Venezuelan government \$2.8 billion by buying Petroleos de Venezuela, S.A. (PDVSA) bonds. PDVSA is the Venezuelan state-owned oil and natural gas company. When S&P announced that Venezuela defaulted on two of its U.S. bond payments, Venezuela has blamed the U.S. with its economic war. The Trump administration added financial sanctions on Venezuela and the PDVSA, which bars U.S. banks from trading or investing in any newly issued Venezuelan debt.

Russia and China are two of Venezuela's largest lenders. Russia provided \$6.5 billion through Rosneft to PDVSA, in which Venezuela still owes Russia \$2.3 billion. This loan has helped Venezuela avoid default on their loans multiple times. In 2016, Maduro secured a fresh loan by giving Rosneft 49.9% stake in Citgo as collateral. Russia has also provided the country with military equipment, which circumvents U.S. sanctions. China, on the other hand, has loaned Venezuela \$50 billion dollars since 2007. In 2015, Venezuela asked China for a change in repayment terms, in which China has extended a grace period that allows Venezuela to make interest payments on its loans. However, China adopted a policy to not lend any more money to Venezuela until old loans have been paid. To date, Venezuela has fallen behind on oil shipments to China and Russia, which has caused Venezuela to fall behind on their repayment to the two countries.

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Instability in West Africa, with Potential Spillover from Mali

Maintaining the political and economic stability of the West African region that includes Liberia, Sierra Leone, and Guinea has been a strategic focus of the U.S. As neighboring countries, like Mali, grapple with terrorism and civil strife, preserving West Africa's political and economic infrastructure is key to moderating factors that can lead to heightened violence and extremism. In the wake of the Ebola epidemic that infected 25,000 people, West Africa has experienced a cascade of political and economic impacts. Liberia has begun to show signs of recovery, after foreign aid agencies declared the country virus-free in May 2015. Sierra Leone and Guinea are recovering more slowly. Cases of Ebola in Guinea are continuing to emerge weekly, and there are continued concerns for cross-border transmission.

In the aftermath of the epidemic, the significant toll it took on public health services, food security, and the economies of all three West African countries has become evident. Steep reductions in trade and tourism have led to shrinking economies and increasing national deficits. The cascade of social, economic, and health effects associated with the epidemic are expected to continue for years, potentially undermining efforts to improve economic development and governance in the West African region.

The political and economic stability of the three West African countries is of particular concern as neighboring countries, notably Mali, struggle with terrorism and civil strife. Mali was regarded as a model of African democracy until the military seized power in March 2012 and the north fell under al-Qaeda control. Militant groups in Mali (including al-Qaeda in the Islamic Maghreb (AQIM), Ansar Dine, and the Movement for Unity and Jihad in West Africa) continue to assert territorial claims in the north as they attempt to establish a separate Islamic state. Militant groups have been gaining territory since a military coup in early 2012. The militant groups are undermining the government led by President Ibrahim Boubacar Keita since September 2013 and threaten to destabilize neighboring countries as well. French-led missions to combat the militants have driven some of their forces out of Mali, but others continue to maintain control of northern areas of the country.

Although the U.S. cut off much of its funding to Mali following the 2012 coup, it continues to provide some assistance through USAID. The U.S. has supported the French-led mission in Mali by establishing a drone base in neighboring Niger in March 2013, providing intelligence surveillance and reconnaissance to the French and other regional partners.

In February 2017 France and the Sahel G5 countries created the G5 Sahel force, a 5000 troop strong counterterrorism force aimed at fighting militant groups with an expanded mandate to move across borders in the Sahel region. The U.S. military has also increased its presence in the Sahel, deploying approximately 1500 troops to the region. In 2013, Malian forces backed by the French pushed out the Islamist militants; however, attacks have spread to other parts of Mali and neighboring countries. In August 2018, Estonia announced they are deploying Special Forces to Mali to assist the French in the training of troops in the first part of 2020. In 2019, 140,000 people were displaced due to attacks from militant groups.

Jihadist and Islamic State groups continue to attack the Malian military along the border with Niger. However, these groups have employed a new tactic where they are attempting to divide and conquer between ethnic groups. Specifically, they are provoking feuds between the Fulani and the Dogon by offering to protect victims of the conflict they are stoking. Attacks have now spilled into countries that have not previously seen terrorism attacks, such as Burkina Faso and Benin. In 2019, Mali's Prime

Minister Soumeylou Boubeye Maiga resigned over public frustration with their failure to stop the violence.

Continued destabilization of Mali could allow the militant organizations, including AQIM, to establish a safe haven in Mali and to use it as a base from which to further destabilize the region. Identifying ways to support sustained recovery of the social, political, and economic infrastructure of West Africa is a central concern for the U.S., as it seeks to avoid the spread of extremism from Mali to its neighboring states.

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Crisis in the Caucasus

Nagorno-Karabakh is a region located in the Southern Caucasus between Azerbaijan and Armenia. The region has been claimed by both countries. Currently, although Nagorno-Karabakh's population is 95% ethnically Armenian, it is within Azerbaijan's internationally-recognized borders. Decades of conflict between the two countries over Nagorno-Karabakh ended in a ceasefire in the early 1990s that allowed for economic investment and development of gas and oil resources in the region. However, recently there has been a marked escalation in border conflicts, with a number of civilian casualties. Russia provides a security guarantee for Armenia, where it has a military base and 4,000-5,000 troops. Azeri officials view the Western response to Russian incursions in Ukraine as tepid, part of a worrisome pattern of disengagement.

Both countries are investing in weapons and military equipment. The conflict threatens to escalate further and become a source of destabilization across the Southern Caucasus and disruption of oil and gas exports to Europe and Central Asia.

The energy infrastructure in Azerbaijan provides the only westward route for central Asian crude that bypasses Russia and includes pipelines for natural gas that extend from Azerbaijan's capital, Baku, to southern Italy. In addition, Azerbaijan, the former Soviet Union's third-largest crude producer, has used its oil wealth to beef up its military and forge alliances with the U.S. and Israel. Azerbaijan's annual defense budget rose from \$177 million in 2003 to \$3.4 billion in 2013. Purchases include sophisticated weapons from Israel, Turkey, and Russia. Armenia is a member of a Russian-led mutual defense group that includes Belarus, Kazakhstan, Tajikistan, the Kyrgyz Republic, and Russia.

The risk of open war remains low, but the militarization of the borders and the willingness to use violence greatly increases the risk of escalation and the potential for a conflict that draws in Russia, Turkey, and Iran, and further feeds turmoil in the Middle East.

In 2018, Azerbaijan welcomed new president Nikol Pashinyan coming to power, which has led to several positive steps. Levels of violence have decreased significantly along the cease-fire line known as the Line of Contact. Armenia and Azerbaijan have set up a hotline to exchange information and to stop shooting across a segment of their border in an attempt to allow farmers and villagers to live peacefully. In 2019, the president of Azerbaijan and the Prime Minister of Armenia committed themselves to maintaining the cease fire, developing humanitarian measures, and a continuation of direct dialog between the two countries. Currently, Azerbaijan and Russia are in an escalating battle over Azerbaijan's policy of denying ethnic Armenians any citizenship entrance into the country. Additionally in 2019, the U.S. Senate and House of Representatives provided \$17.6 million for assistance to Armenia to further democratic reforms and economic development, with the House of Representatives approving an additional \$40 million for democracy-building assistance to Armenia.

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Sino-Indian Border Conflict

The 2,400-mile Line of Control was created as part of an informal ceasefire following the 1962 Sino-Indian war. It is accepted by both countries as a de facto border between India and Chinese Tibet. However, recently there have been increases in the number and scale of engagements along the disputed border between the two nations.

China has well-developed air and rail infrastructure in Tibet that support recurrent military incursions into Indian-claimed territory. In April 2013, Chinese encroachment into the Ladakh region of Kashmir prompted a three-week military standoff. Soon after his election in 2014, India's Prime Minister Narendra Modi sent a large contingent of Indian troops, numbering in the thousands, into the region. Prime Minister Modi has taken a far stronger position with China than his predecessors and has pressed Chinese President Xi Jinping to clarify the LAC during a September 2014 bilateral summit. At that summit, the Chinese offered India an estimated \$100 billion for a variety of infrastructure projects, including high-speed trains and development of economic zones. However, Modi declined, making clear to the Chinese that India's tolerance for continued uncertainty regarding the border situation had worn thin and that any significant deal depended on resolution of the border issue.

Escalation of border tensions between India and China has wider implications, playing out against the background of relationships in South Asia that involve China, India, the United States, and Pakistan. Growing ties between India and the U.S. have raised Chinese concerns. China's close military and nuclear ties to Pakistan, an expanded Chinese presence in the Indian Ocean, and India's open criticism of China's Tibet policy could enhance the possibility of a militarized flare-up along the border.

In early 2019, border tensions between China and India continued to flare up in a dispute about where the Line of Actual Control actually lies. The Indian Army raised integrated battle groups with a mix of infantry, tanks, artillery, air defense, and signals and engineers in an attempt to mobilize and strike across the borders with Pakistan and China. Additionally, in 2019, China and India held joint military exercises with a focus on terrorism under the United Nations mandate. At the end of 2019, representatives from China and India met to discuss a resolution of the India-China boundary question, in which both countries declared they are planning events to celebrate the 70th anniversary of bilateral diplomatic ties and will actively advance boundary negotiations in line with the Agreement on the Political parameters and Guiding Principles for the settlement. China and India are also gearing up border trade in an attempt to reduce the \$53 billion trade deficit between the two countries.

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Refugee Crisis in Southeast Asia

In the last few years, as part of a broader strategy to bolster U.S. position in the Pacific Rim, the U.S. government has made a number of efforts to strengthen its relations with Southeast Asian nations. In Myanmar, U.S. attempts to re-establish relations with a pro-democratic Burmese government continue to run into a number of impediments, including human rights issues that remain a wedge between the two countries. Ongoing violence by Myanmar's radical Buddhists against the ethnic Muslim Rohingya has resulted in the displacement of more than one hundred thousand Rohingya and sharply increased the level of tension with Myanmar's neighbors. Bangladesh has sealed its border with Myanmar to prevent an influx of refugees.

The flood of refugees into Thailand threatens to exacerbate political instability and economic strains within Thailand and across the region. A decade ago, Thailand had the strongest economy in Southeast Asia, but its economy has experienced a downward spiral associated with significant economic and political impact. Violent anti-government street protests, a coup d'état in May 2014, and ongoing martial law have contributed to a \$12 billion shortfall (U.S. dollars) in Thailand's GDP growth for 2014. The 10 provinces in Thailand that border Myanmar are populated by 6.8 million Thais, more than 120,000 displaced persons in nine camps run by the United Nations High Commission on Human Rights (OHCHR), and an estimated 500,000 to 1 million registered and undocumented migrants. The precarious health of Thailand's 88-year-old and deeply loved king adds to the sense of political uncertainty.

Meanwhile, the refugee crises in Myanmar appear to be cascading across the region. In the first 3 months of 2015, the UN estimates that more than 25,000 migrants left Myanmar and Bangladesh on unreliable sea transportation headed for Thailand, Malaysia, and Indonesia. Between 2016 and 2019, 600,000 and one million Rohingya were forcibly displaced from Myanmar to Bangladesh.

In 2018, after Bangladesh and Myanmar were supposed to officially start repatriating members of the Rohingya minority, protesters in Rakhine demonstrated against the planned repatriation of Rohingya Muslims from Bangladesh. In 2019, a Myanmar delegation was tasked with informing the Rohingya about the progress made in infrastructure developments in an attempt to repatriate refugees, in which the Rohingya placed emphasis on their concerns about rights, citizenship, safety, and security if they return. However, the Rohingya did not agree to voluntarily return following Myanmar's attempt to convince them it was safe to return. The International Criminal Court (ICC) in 2019 authorized a full scale investigation into allegations against Myanmar for genocide through murder, rape, and destruction of communities. Aung San Suu Kyi, the State Counsellor of Myanmar, pleaded with 17 international judges to dismiss allegations that Myanmar has committed genocide and urged them to instead allow the country's court martial system to deal with any human rights abuses.

Both Myanmar and Bangladesh countries have geostrategic importance in Southeast Asia and vast natural resources. Recent political and economic problems play out against the larger picture of China's recent push to establish dominance in the region. China has staked out the South China Sea as its own, including claims to sovereignty over untapped resources that include 11 billion barrels of oil and 190 trillion cubic feet of natural gas.

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Escalating Tensions in the Persian Gulf

Tensions exist between Iran and various other states, including traditional foe Saudi Arabia, other regional competitors, Israel, and external states, such as the United States and United Kingdom. These tensions continue to increase and threaten peace in the Persian Gulf region. The expanding tensions include: implementation of the Iran nuclear deal; freedom of navigation for shipping through the Persian Gulf, and specifically the Straits of Hormuz; and the ongoing proxy war in Yemen between Iran and Saudi Arabia. Meanwhile, internal tensions in Iran include the impact of externally imposed economic sanctions, the increasing power of the Iranian Guards, and competition between moderate President Hassan Rouhani and the hardline clerics and military. Overall, Iranian-centered tensions, while varied in nature, are still well below the threshold that might lead to large-scale conflict. Nevertheless, the future is uncertain.

Reminiscent of the Tanker War in the 1980s, Iran has begun threatening and attacking oil tankers transiting the Straits of Hormuz. On the 13th of June 2019, two oil tankers were attacked by Iranian Revolutionary Guards Corps (IRGC) vessels. The ships were damaged by explosions, and the crews were forced to be evacuated. A week later, the IRGC shot down a U.S. Global Hawk drone over the Straits of Hormuz, and the U.S. came close to responding with military force. Reportedly after cancelling a planned air attack, the U.S. response was limited to cyber attacks on Iran. The nature, target, and effects of those cyber attacks has not been reported. As sanctions tighten on both Iran and Syria, on the 4th of July 2019, the British Royal Navy seized an Iranian tanker off Gibraltar. The tanker was attempting to ship oil to one of Iran's few allies, Syria, in clear violation of the E.U. sanctions on that country. As the month of July progressed, tensions increased. On the 18th of July, U.S. Marines aboard ship in the Persian Gulf employed jamming to down an Iraqi drone that flew close enough to their ship to threaten its security.

There is an increasing number of disagreements over the Joint Comprehensive Plan of Action (JCPOA) to limit Iranian progress toward developing nuclear weapons. In November of 2018, the United States reimposed sanctions that had been lifted on Iran when the JCPOA was signed. In May of 2019, Iran suspended commitments to the JCPOA and began increasing its enrichment of uranium. On the 24th of July 2019, Iran fired a medium-range ballistic missile with a range of 1000 kilometers. While not a violation of the JCPOA or other UN Resolutions, the test worried security officials not only in the region but also globally. The test appeared to indicate that Iran was pursuing both long-range and nuclear strike capabilities.

In Yemen, Iranian continues support to Houthi rebels fighting a proxy war against Saudi Arabia. Iranian support includes training, ballistic missiles, drones, ammunition, and other military supplies. Iran continues to fund the Houthi rebels, extending the war in Yemen against Saudi Arabia, largely through sales of illicit Iranian oil shipments. In July of 2019, the U.S. began pressing for a maritime coalition to prevent Iranian attacks on commercial shipping off the coast of Yemen and in the Bab-el-Mandeb Strait.

The complex internal politics within Iran continue to simmer as President Rouhani vies for power with the conservative religious clerics. Meanwhile, the IRGC continues to grow in terms of internal economic and political power. The IRGC is the primary driver of expanded external Iranian efforts in Iraq, Syria, Yemen, and the Gulf region. Hossein Salami, appointed to lead the IRGC in April 2019, remains aggressive in his application of power and relatively independent from the control of both President Rouhani and Supreme Ayatollah Ali Khamenei. Continued sanctions are having an effect on the general population, with periodic unrest spilling over into demonstrations against the regime in December 2017,

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