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Analyses of Boundaries in Systems Practical Exercise User's Guide



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FACILITATOR GUIDE

Analyses of Boundaries in Systems (ABS) is a practical exercise (PE) that can be used to help hone sociocultural systems thinking (SCST) skills in Army leaders. SCST is an awareness that the operational environment is affected by a multitude of factors, that these factors are affected and changed by each other, and that culture and social relationships are pervasive throughout this system. This document was developed to be a resource for instructors. ABS was designed to be conducted with current and future field-grade officers in Professional Military Education courses or for Army leaders who may find themselves in situations where they need to engage in SCST. ABS draws from real-world events to highlight sociocultural systems (SCS) concepts. The goals of ABS are to generate discussion among groups of participants, encourage systems thinking, promote new ways to think about complex events, and to practice productive discourse.

This facilitator guide contains instructions and materials for conducting ABS sessions. Its subsections consist of the ABS overview, the purpose and learning objectives of ABS, how to prepare to facilitate ABS, and execution guidelines. This facilitator guide includes scripts and *Pro Tip* boxes that you, the facilitator, can use to walk participants through the exercise.

In addition to this facilitator guide, this document contains an *Introduction to Systems Thinking* handout, which you can provide to participants as part of starting the conversation about systems thinking or to refresh participants' memories regarding systems thinking. This document also contains handouts of case descriptions and perspectives, which participants can use in Stage 1 of the exercise. Lastly, this document also contains facilitator slides that display what should be done at each stage of the PE.

Exercise Overview

This section of the guide covers the different stages of the ABS practical exercise, including a visual representation of what the teams look like, the purpose and learning objectives of ABS, a description of materials needed to facilitate ABS and the different cases to select from, and the execution guidelines for the practical exercise. ABS involves a class of participants operating in small teams to explore a real-world SCS that has multiple perspectives. For example, a real-world SCS can have a political perspective, an economic perspective, and an infrastructure perspective. ABS tackles the SCS in three stages:

Stage 1 The class is divided into small teams. Each small team is assigned one SCS perspective and the team studies that perspective using support materials provided to the team. Based on the assigned perspective, the team creates a timeline of key historical events, develops visual representations of the SCS, proposes potential interventions to address the problematic aspects of the SCS, and envisions how the SCS might respond to those interventions. The team proposes potential interventions from that perspective to the rest of the class.



First team analyzes Case XYZ from Perspective A



Second team analyzes Case XYZ from Perspective B



Third team analyzes Case XYZ from Perspective C

Stage 2 Participants are re-assigned to new teams with one member from each of the initial teams, such that each team member has a different perspective on the SCS. These new small teams work on integrating their perspectives and representations of the SCS to develop a more complex understanding of the whole SCS, to identify leverage points, and to propose interventions for the broader SCS. Each new team proposes potential interventions for the broader SCS to the rest of the class and provides feedback to the other teams.



Teams are reformed such that each team member has a different perspective on the SCS. Each team will now propose interventions for the broader SCS in Case XYZ.

Stage 3 In the final stage of ABS, the facilitator leads a whole-class discussion about the challenges and lessons learned during the PE, and the facilitator recapitulates the learning objectives and SCS concepts addressed in the PE.

Purpose and Learning Objectives of ABS

The *crawl, walk, run* analogy illustrates the development of SCST.

Crawl This stage involves understanding basic properties of SCS and involves early development of SCST skills. SCST is still unnatural to the learner, and he or she tends to revert to linear thinking when presented with situations that require anticipating outcomes. Linear thinking is characterized by focusing mainly on simple cause-and-effect relationships, where a cause leads to an effect, and that effect becomes the cause for another effect, and so on. Nonlinear thinking, on the other hand, is awareness of simple cause-and-effect relationships, as well as being cognizant of how a cause may lead to multiple effects, that an effect may modify the prior cause in what is known as a feedback loop, and that feedback loops may persist to result in effects of varying magnitudes and directions. Nonlinear thinking may be more effective in predicting and preparing for the outcomes of acting within SCS, where many causes and effects may not be immediately apparent.

Walk At this stage, the learner already has experience applying SCS concepts to novel cases and forecasting possible outcomes, but SCST remains effortful.

Run This stage is characterized by a natural, automatic application of SCST to new situations. When facing complex operational situations, SCS thinkers at the *run* stage tend to integrate SCST into their understanding of the area of operations and their planning of potential courses of action.

ABS is considered to fall under the *walk* to *run* levels of SCST skill development. If participants have no prior experience with systems thinking, the facilitator can prepare the participants for ABS by providing them with this guide's *Introduction to Systems Thinking* section. This introduction section will provide participants with an overview of systems thinking as well as provide them with terms that are commonly used when discussing systems thinking.

The following learning objectives are addressed in ABS:

1. Demonstrate understanding of the foundational theory of SCST. This understanding will include:
 - 1.1. the range and nature of stakeholder groups in SCS,
 - 1.2. the structural characteristics of SCS, and
 - 1.3. the manifestations of SCS structural characteristics.
2. Demonstrate the ability to apply SCST skills. This application will include:
 - 2.1. visually representing SCS interdependencies and the dynamic nature of SCS,
 - 2.2. examining multiple perspectives and historical background, and
 - 2.3. translating SCS concepts to envision promising, sustainable interventions.

Preparation

General PE Structure	
Recommended number of participants	8 to 12, but can potentially accommodate 3 to 16
Estimated run time	3 hours
Materials needed	<ul style="list-style-type: none"> ○ Participant and facilitator packets, ○ TV, projector, or laptops for watching the videos, ○ Internet access to access the videos and articles, ○ Printed copies of supplemental materials if there are not enough laptops or phones for each group or if there is no internet access, ○ Writing tools: sheets of paper, pens, and ○ Whiteboard for participants/teams to use to present their findings.

Review the cases to select the one(s) that best suits participants' needs and the size of the class. This guide contains five cases. Each case is presented with four to five perspectives:

Case	Perspectives
Falling Birth Rates	Economy Environment Military Social
Fukushima Nuclear Disaster	Economy Environment International Community/Neighboring Countries Power Plant
Illegal Drug Trade in Colombia	Drug Production Drug Trafficking Illegal Mining Internally Displaced People (IDPs)
Nagorno-Karabakh Conflict	Armenia Azerbaijan Israel Russia Turkey
Planting Trees in Cities	Energy Health

Once you select the case that you plan to use, spend time familiarizing yourself with the case and its perspectives. If time permits, it is also advisable to conduct some research for additional sources about the case that you would like to include in the exercise.

You may also construct your own case with an SCS of your choice. The cases in this guide can serve as a template. If you choose to construct your own case for ABS, note that the topics are appropriate if they are multifaceted, in that examining the topic from one perspective may lead to one solution, while examining the topic from another perspective may lead to a different solution, and various possible solutions may need to be synthesized to arrive at what would be considered the best course of action. Topics should present issues that are complex, that have significant implications, that do not possess an unambiguously correct answer, and that contain assorted stakeholders with disparate agendas and are in different operational environments.

The following SCS concepts are addressed in ABS:

1. Boundaries
2. Co-adaptive cycles
3. Environmental influence
4. Feedback loops
5. Goal conflict
6. Historical influence
7. Individual and collective goals
8. Interdependence and interaction
9. Leverage points
10. Multiple players/stakeholders
11. Nested social systems
12. Second- and third-order effects
13. Self-organization
14. Supporting structures
15. Synthesis
16. Timelines

To learn more about SCST with respect to the operational environment, the following anthology is informative:

Strong, B. E., Babin, L. B., Ramsden Zbylut, M., & Roan, L. (Eds.) (2013). *Sociocultural systems: The next step in Army cultural capability* (Research Product 2013-02). Fort Belvoir, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. ADA591027 (Dist. A)

Execution Guidelines

At the beginning of the session, inform the participants of the nature and the duration of the exercise. Then assign participants into teams for the first stage of the exercise following these guidelines:

- If there are three or four participants, each participant will be the “team” for the first stage of the exercise.
- If there are 5 to 11 participants, assign at least two participants per team so that there is teamwork involved during the first stage of the exercise.
- If there are 12 or more participants, it is recommended that you create four teams to minimize the number of teams with four members. Two to three members per team is ideal for this task.

Begin by briefing participants with the following:

The group exercise you are about to complete involves learning about real-world issues and events, articulating your own understanding about what is taking place in the region, and proposing potential ways to address the issues. The full exercise will take approximately 3 hours.

Then, if there are only three or four participants, continue:

For the first hour, each one of you will first analyze the case from a specific perspective. You will deliver a 10-minute presentation of your findings to the rest of the class. During the second half of the exercise, all of you will complete a similar task as a team. At the end, we will all have a group discussion about the exercise and what it teaches us about sociocultural systems thinking.

If there are five or more participants:

Each one of you will be assigned to a team and each team will analyze the case from a specific perspective for the first hour. In one hour, your team will deliver a 10-minute presentation of your findings to the rest of the whole group. During the second half of the exercise, you will be assigned to a different team, and you will complete a similar task with your new team. At the end of the exercise, we will have a whole-group discussion about the exercise and what it teaches us about sociocultural systems thinking.

Make sure the participants understand the overview:

Do you have any questions at this point?

Team Research and Discussion

Assign learners to their teams and distribute the ABS handouts for your chosen case. The handouts specify the tasks to be completed and the materials (i.e., videos, articles, visuals) corresponding to the perspective that the team should adopt for the case. Also distribute any other supplies participants may need to either review the materials (e.g., laptops) or to complete the activity (e.g., sheets of paper and pens). Ensure each team has enough room to be able to play videos and to discuss without interfering with each other. This guide comes with slides that support facilitation of ABS.

Once all participants are in their teams and have their handouts, review the instructions for the first stage of the exercise:

During the first stage of this exercise, your team [or you *if the class is too small for teams*] will review the materials provided to you to get familiar with your case perspective. As your team reviews these materials, keep in mind that you will be asked to:

- (1) create a timeline of the key events influencing the situation,
- (2) visually represent the players involved,

- (3) propose potential interventions to address the situation, and
- (4) anticipate how your intervention might impact the situation and how different players might react.

In approximately one hour, your team will have to share your timeline, your representation, your proposed intervention, and your envisioned impact or reactions with the rest of the class. Make sure you manage your time appropriately so you can be ready to present in one hour.

Do you have any questions at this point?

Answer any questions participants might have about the materials or about each of the tasks they need to complete. Remember that your role is to facilitate ABS. For the most part, participants should work in their teams with minimal facilitator guidance. Participants should engage in productive struggle when they encounter challenges tackling the subject matter, as working through the challenges is part of the learning experience.

Pro Tip

This is a good opportunity for you to quietly observe and take notes on how the different teams approach the task and which challenges they encounter along the way. The notes will be very useful to link SCS concepts to concrete learner experiences during the final debrief.

Pro Tip

Provide frequent time reminders to help teams keep track of time. If they have not started drafting timelines and visual representations after the first 30 minutes, you may want to encourage them to start working on the products.

Pitch Intervention to Other Teams

After approximately one hour, stop all team discussion and ask each of the teams to present their findings to the rest of the class. Instructions to participants may be:

At this time, your team has up to 10 minutes to explain to the rest of the class what you learned about your case and what you envision as a promising intervention. Leverage the timeline and visual representation your team created to explain your understanding and your proposed intervention. Once you finish your presentation, the rest of the teams will have an opportunity to ask questions and point out limitations of your proposed intervention. When other teams are presenting, you will have an opportunity to ask questions to other teams and critique their interventions.

Do you have any questions before we start the presentations?

Teams are expected to use the whiteboard to support their presentations. Each team will be required to cover these four topics:

- (1) timeline of key landmarks and events leading to the current situation,
- (2) visual representation of the players involved and their relationships,

- (3) proposal for a potentially successful intervention and rationale, and
- (4) description of anticipated impact on the SCS and potential reactions/adaptations.

During the presentation, pay particular attention to the extent to which:

- (1) the proposed timeline and representation reflected SCS understanding,
- (2) the proposed intervention acknowledged SCS characteristics, and
- (3) the team was able to anticipate likely adaptations of stakeholders to intervention.

The primary goal of identifying deficiencies in SCS understanding is to leverage them during the final debrief to enhance participants' SCST skills.

After each team presents, encourage other teams to ask questions and critique the presenting team's proposed intervention. Ideally, other teams will bring up relevant aspects outside of the SCS on which the presenting team focused that can impact the success of the intervention. If the other teams are not participating, you may want to ask other teams about relevant aspects of the case perspective they covered and how those aspects might impact the proposed intervention.

Integration into a Broader SCS

At the end of the presentations, existing teams are disbanded, and new teams are created. Each new team will have one member from each of the different disbanded teams (i.e., each member with a different case perspective in the first stage). The new team task will be to address the same questions about the broader SCS. Note that, if there were only three to four participants in the first stage, there will be only one team at this stage. Each member will bring the timeline, visual representation, proposed intervention, and anticipated consequences of their "bounded" SCS to their new team.

During this stage, each team will be asked to integrate their disparate timelines and representations into a consolidated representation of the broader SCS. Each team will also be asked to identify leverage points and propose promising approaches to intervene in this broader SCS. Participants will work in their teams for approximately 20 minutes and then share, contrast, and discuss their proposed interventions with the other teams. Point out discrepancies among proposed interventions and encourage cross-critiquing of each other's proposals.

Instructions to participants may be as follows:

You are now in a new team with people who focused on a different perspective about the case during the first stage of this exercise. Your task is to revisit the timelines and the representations that each of you created during the earlier stage and to integrate them into a consolidated representation of the broader situation. Then use this consolidated representation to identify leverage points for potential intervention. Discuss with your team how you expect the intervention to impact the system and how you expect the players involved to react or adapt to the intervention. After approximately 20 minutes discussing within your team, you will share proposed interventions across teams, and you will critique each other's proposals.

Do you have any questions at this point?

During this stage, answer any questions participants might have about the task. However, teams should work on their own to attempt to integrate the disparate perspectives and to develop promising interventions.

Pro Tip

This stage is another good opportunity to quietly observe and take notes on how the different teams approach the task and which challenges they encounter along the way. The notes will be very useful to link SCS concepts to concrete learner experiences during the final debrief.

Debrief Guide

During the last 30 minutes of the exercise, lead a discussion about the PE with participants. Initial questions will be focused on the participants' experiences while completing the PE, the challenges they encountered, the strategies they used, and the lessons they learned. Build on the participants' responses and relate the responses to the learning objectives and the SCS concepts (e.g., multiple players, goal conflict, leverage points). Also lead a discussion about the relevance of the PE and SCS to operational settings and the course material. Taking good notes over the course of the PE can be invaluable during this final debrief.

Potential facilitator questions may include:

- (1) During the first stage, what was the most challenging part about trying to visually represent a sociocultural system? How did you overcome those challenges?
- (2) Did you find identifying leverage points and developing potential interventions challenging? Why? [Or why not?] How did your team overcome those challenges?
- (3) During the second stage, did you find it challenging to integrate your teammates' respective understanding into a single, coherent representation? Why? [Or why not?] How did your team overcome those challenges?
- (4) How did your understanding of the system in question change throughout the exercise? Do you think it was useful to begin by exploring one subsystem first? Why? [Or why not?]
- (5) If you were to expand the SCS of interest beyond the one in the second stage, where would you place a broader boundary? Which players outside the current system boundaries would you be interested in including?
- (6) How, if at all, was this exercise relevant to operational situations?
- (7) How does this exercise relate to the other concepts that we have covered in this course?

INTRODUCTION TO SYSTEMS THINKING

There are many definitions of systems thinking. According to Senge (1990), systems thinking considers how events tend to be part of a larger system and are related to each other, although such relationships may not be initially apparent. Gharajedaghi (2013) characterized systems thinking as focusing on the importance of thinking about issues as a complex system that is greater than just the sum of its parts. Sackett et al. (2016) defined systems thinking as understanding how a variety of elements and domains in a complex and dynamic environment are interrelated and contribute to form a coherent whole. These definitions of systems thinking have multiple commonalities. The main commonality is that things do not occur in a vacuum. Rather, things occur in relation to other things, and a change to one thing may result in changes to other things. Thus, it is important to be mindful about how things come together and form a system.

Discussion of systems thinking, a cognitive process, necessitates familiarity with the following characteristics of systems. **Bolded** terms can be found in the glossary. The glossary is included in this guide to help you become better acquainted with components that should be considered when seeking to understand a complex system. These characteristics and terms are as follows:

1. **Adaptive** and **fluid**
2. Affected by historical factors
3. Altered by **goal conflict** and **competition** for resources
4. **Complex**
5. **Counterintuitive**
6. Depicted by **patterns of change**
7. Differentially changed by **leverage points**
8. Influenced by **feedback loops**
9. **Multidimensional**
10. **Open**, not closed
11. **Purposeful**
12. **Self-organizing**

By considering the characteristics of a system, decision makers can formulate more effective courses of action based on a more holistic picture of the operational environment and dynamic situation. For instance, Senge (1990) presented an intriguing example: the nuclear arms race between the United States and the Union of Soviet Socialist Republics (USSR). Senge described the beginning of the arms race as the result of both countries' shared suspicion regarding each other and the potential threat of attack. Each country saw the other as the aggressor and in response began building its nuclear capability as a defensive reaction to the perceived threat. Each country responded to achieve a short-term goal of establishing a sense of security. However, through the actions of both countries, the long-term result was the exact opposite: more insecurity and more fear. This positive feedback loop fed the fear and strengthened the defensive response to a potentially dangerous end state for both countries. Senge stated that this situation was an example of dynamic complexity where one had to appreciate and understand the interrelatedness and patterns of change inherent to the system.



Another important characteristic of a system is whether the system is *open* versus *closed*. Gharajedahgi (2013) explains that in closed systems there is no influence from the environment. In a closed system, no energy, information, or influence is shared outside of the system. An analogy of a closed system is a computer network with no Internet access. This type of computer network comprises only the machines on the network and the interactions between the machines. Completely closed systems are rare, but as boundaries become more arbitrary or more affected by the surrounding environment, the more the system becomes open. Returning to the computer analogy, an open computer network is one that exists with Internet access; the network is affected potentially by every other computer that may not be part of the same computer network but is also connected to the Internet. It is important to understand the distinction between open and closed systems. The more open the system, the less the ability to control the system. We must rely instead on influencing the system. This is where leverage points play a significant role in understanding and manipulating systems.

Senge (1990) stated that “the bottom line of systems thinking is leverage – seeing where actions and changes in structures can lead to significant, enduring improvements” (p. 114). The problem, though, is that the leverage point is not usually obvious. In fact, often the obvious answer leads to the outcome opposite to the expected outcome, as in the arms-race example. An in-depth examination of Senge’s research identifies several processes to consider when identifying leverage points in a system. Things to consider are cause-and-effect relationships within the system; the pattern of change inherent to the system; identifying facts versus assumptions about the system; stakeholder motivations and connections inside and outside of the system; and points of tension, competition, and error that might occur in the future as the system develops. These processes to consider are the aspects of a system that we focus on in this practical exercise—Analysis of Boundaries in Systems.

For the activities in this practical exercise, we do not expect you to be a systems thinking expert. Our goal is to introduce the topic of systems thinking and to give you the opportunity to practice applying the concepts to complex problems. In fact, you may already be familiar with some of the concepts, even though you may not recognize the specific names of the concepts.

Systems Thinking Glossary

Adaptive – systems will change in reaction to influence from inside and outside the system.

Assumption – preconceived notions about how things in a system or the system as a whole work. These notions may or may not be supported by facts, and the notions may be so deeply ingrained within the system that it is easy to rely on them without awareness of their existence.

Cause-and-effect relationship – changes in one part (A) of the system result in changes in another part (B) of the system. Moreover, the changes in B may lead to further changes in A.

Competition – when multiple parties seek the same resources, and one competitor obtaining the resources leads to another competitor losing access to the resources. Parties may use various strategies to increase the likelihood that they, and not the other party, will obtain the resources.

Complex – systems have many parts that are connected to each other in a wide variety of ways. Moreover, systems tend to be interconnected with other systems. Oftentimes, there are many parts and

connections that are not obvious. These system characteristics make it nearly impossible to completely understand the system.

Counterintuitive – the result of one’s action is the opposite of what would be expected because cause and effect are not always unidirectional, and many actions have second- and third-order effects that are often unforeseen.

Error – unintended events within the system that cause unsatisfactory effects.

Feedback loop – a factor influences a part of the system that in turn impacts the factor, creating a continual connection that results in a positive or a negative effect on the system. A positive feedback loop enhances or increases the change, while a negative feedback loop suppresses the change related to the system’s equilibrium.

Fluid – instead of being static, systems are easily changed by inside and outside influences. These changes can be frequent and unexpected.

Goal conflict – individuals within and outside of a system have different goals and interests, and some of these goals likely conflict with one another. Often, it is not obvious how goals are at odds with each other. It is important to consider various stakeholders’ agendas and goals.

Leverage – influence on the system that creates a specific outcome. This influence often comes from an indirect manipulation of the system. A small manipulation has the potential to result in large gains.

Multidimensional – influence in a system can flow through several different elements, entities, or variables in the system. For example, the direction of influence can change the system at different times and in different environments. Multidimensionality also refers to how system elements or entities are interdependent and how effects can become causes, which may result in unpredictable implications for the system.

Open – when a system interacts with the environment beyond the system’s boundary, the system is described as an open system.

Patterns of change – repeating, coherent movements in the system. These movements arise from recurring rearrangements of system elements or entities. We may be able to predict movements by observing how past movements are arranged. When we recognize a pattern of change, we may use the pattern as a clue to decipher points of influence and leverage.

Purposeful – events happen in a system for various reasons. Such reasons may be deeply embedded in culture, emotion, intention, or a combination of these and other reasons.

Self-organizing – the ability of systems to increase in complexity as it responds to the environment. The increases in complexity are assumed to be governed by orderly rules or principles.

Stakeholder – a party that exists within the system. Stakeholders are invested in the outcomes of events that affect the system because such events will affect the stakeholders as well.

Systems thinking – the ability to identify components of a system and to understand how those components interact and influence each other and how they influence the system (Gharajedaghi, 2013). Systems thinking is a discipline for understanding wholes; it is a framework for understanding interrelationships rather than merely observing things, for perceiving patterns of change rather than observing static snapshots (Senge, 1990).

Tension – the strain that occurs in the connection between elements that exist within a system. This strain may be due to changes to one of the elements, to both elements, or to an external element. Exacerbating this strain may produce negative results to the elements involved and to other parts of the system.

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CASE DESCRIPTION: FALLING BIRTH RATES

Perspective 1: Economy

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with falling U.S. birth rates and to propose potential solutions to address those issues. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing falling U.S. birth rates,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about falling U.S. birth rates.

General Background

Total Fertility Rate (TFR) refers to the number of children that women in each area have on average. A TFR of 2.1 is the replacement rate and ensures that the population size will be stable. The current U.S. TFR is 1.78. Although TFR can fluctuate over time, the U.S. TFR decreased in 2007 and has been decreasing almost continuously since. Falling birth rates have been observed among women of various ages, races, and educational levels. Many reasons have been proposed to explain falling birth rates, such as economic uncertainty, education, shifting priorities, and urbanization. There appears to be a trend where the more developed a country is, the lower its TFR is. A TFR below replacement rate may pose a variety of significant problems for the U.S., although compelling arguments may also be made for falling birth rates being a good thing or being something that should not be a cause for concern.

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CASE DESCRIPTION: FALLING BIRTH RATES

Perspective 2: Environment

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with falling U.S. birth rates and to propose potential solutions to address those issues. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing falling U.S. birth rates,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about falling U.S. birth rates.

General Background

Total Fertility Rate (TFR) refers to the number of children that women in each area have on average. A TFR of 2.1 is the replacement rate and ensures that the population size will be stable. The current U.S. TFR is 1.78. Although TFR can fluctuate over time, the U.S. TFR decreased in 2007 and has been decreasing almost continuously since. Falling birth rates have been observed among women of various ages, races, and educational levels. Many reasons have been proposed to explain falling birth rates, such as economic uncertainty, education, shifting priorities, and urbanization. There appears to be a trend where the more developed a country is, the lower its TFR is. A TFR below replacement rate may pose a variety of significant problems for the U.S., although compelling arguments may also be made for falling birth rates being a good thing or being something that should not be a cause for concern.

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CASE DESCRIPTION: FALLING BIRTH RATES

Perspective 3: Military

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with falling U.S. birth rates and to propose potential solutions to address those issues. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing falling U.S. birth rates,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about falling U.S. birth rates.

General Background

Total Fertility Rate (TFR) refers to the number of children that women in each area have on average. A TFR of 2.1 is the replacement rate and ensures that the population size will be stable. The current U.S. TFR is 1.78. Although TFR can fluctuate over time, the U.S. TFR decreased in 2007 and has been decreasing almost continuously since. Falling birth rates have been observed among women of various ages, races, and educational levels. Many reasons have been proposed to explain falling birth rates, such as economic uncertainty, education, shifting priorities, and urbanization. There appears to be a trend where the more developed a country is, the lower its TFR is. A TFR below replacement rate may pose a variety of significant problems for the U.S., although compelling arguments may also be made for falling birth rates being a good thing or being something that should not be a cause for concern.

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CASE DESCRIPTION: FALLING BIRTH RATES

Perspective 4: Social

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with falling U.S. birth rates and to propose potential solutions to address those issues. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing falling U.S. birth rates,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about falling U.S. birth rates.

General Background

Total Fertility Rate (TFR) refers to the number of children that women in each area have on average. A TFR of 2.1 is the replacement rate and ensures that the population size will be stable. The current U.S. TFR is 1.78. Although TFR can fluctuate over time, the U.S. TFR decreased in 2007 and has been decreasing almost continuously since. Falling birth rates have been observed among women of various ages, races, and educational levels. Many reasons have been proposed to explain falling birth rates, such as economic uncertainty, education, shifting priorities, and urbanization. There appears to be a trend where the more developed a country is, the lower its TFR is. A TFR below replacement rate may pose a variety of significant problems for the U.S., although compelling arguments may also be made for falling birth rates being a good thing or being something that should not be a cause for concern.

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CASE DESCRIPTION: FUKUSHIMA NUCLEAR DISASTER

Perspective 1: Economy

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with the dumping of radioactive water from the Daiichi power plant in Fukushima, Japan into the Pacific Ocean, and to propose potential solutions to address the dumping. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing the decision to dump radioactive water from the Daiichi power plant into the Pacific Ocean,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about the earthquake that hit Japan and the effects of the earthquake on the Daiichi power plant located in Fukushima, Japan.

General Background

In 2011, Japan experienced a 9.0 magnitude earthquake that caused a tsunami. The natural disaster damaged the Fukushima nuclear power plant and devastated the region. Damages to the nuclear power plant led to radioactive material irreversibly contaminating the water. Thousands of storage tanks were brought in to store the radioactive water. However, these storage tanks have begun to leak, and there are not enough tanks to store the water. The Japanese government announced that it will dump the radioactive water into the ocean. Doing so will threaten marine life and the fishing economy, not just locally but also internationally. Other nations have ceased importing seafood from Fukushima and its surrounding areas.

Resources

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CASE DESCRIPTION: FUKUSHIMA NUCLEAR DISASTER

Perspective 2: Environment

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with the dumping of radioactive water from the Daiichi power plant in Fukushima, Japan into the Pacific Ocean, and to propose potential solutions to address the dumping. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing the decision to dump radioactive water from the Daiichi power plant into the Pacific Ocean,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about the earthquake that hit Japan and the effects of the earthquake on the Daiichi power plant located in Fukushima, Japan.

General Background

In 2011, Japan experienced a 9.0 magnitude earthquake that caused a tsunami. The natural disaster damaged the Fukushima nuclear power plant and devastated the region. Damages to the nuclear power plant led to radioactive material irreversibly contaminating the water. Thousands of storage tanks were brought in to store the radioactive water. However, these storage tanks have begun to leak, and there are not enough tanks to store the water. The Japanese government announced that it will dump the radioactive water into the ocean. Doing so will threaten marine life and the fishing economy, not just locally but also internationally. Other nations have ceased importing seafood from Fukushima and its surrounding areas.

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CASE DESCRIPTION: FUKUSHIMA NUCLEAR DISASTER

Perspective 3: International Community/Neighboring Countries

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with the dumping of radioactive water from the Daiichi power plant in Fukushima, Japan into the Pacific Ocean, and to propose potential solutions to address the dumping. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing the decision to dump radioactive water from the Daiichi power plant into the Pacific Ocean,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about the earthquake that hit Japan and the effects of the earthquake on the Daiichi power plant located in Fukushima, Japan.

General Background

In 2011, Japan experienced a 9.0 magnitude earthquake that caused a tsunami. The natural disaster damaged the Fukushima nuclear power plant and devastated the region. Damages to the nuclear power plant led to radioactive material irreversibly contaminating the water. Thousands of storage tanks were brought in to store the radioactive water. However, these storage tanks have begun to leak, and there are not enough tanks to store the water. The Japanese government announced that it will dump the radioactive water into the ocean. Doing so will threaten marine life and the fishing economy, not just locally but also internationally. Other nations have ceased importing seafood from Fukushima and its surrounding areas.

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CASE DESCRIPTION: FUKUSHIMA NUCLEAR DISASTER

Perspective 4: Power Plant

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with the dumping of radioactive water from the Daiichi power plant in Fukushima, Japan into the Pacific Ocean, and to propose potential solutions to address the dumping. You have approximately one hour to complete this stage of the exercise. After one hour, you will share the following points with the class:

- (1) a timeline of the key events leading up to and influencing the decision to dump radioactive water from the Daiichi power plant into the Pacific Ocean,
- (2) a visual representation of the key players involved in the situation and their relationships,
- (3) potential solutions you think can address the situation for all key players, and
- (4) the envisioned impact of your solution and how you anticipate the key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about the earthquake that hit Japan and the effects of the earthquake on the Daiichi power plant located in Fukushima, Japan.

General Background

In 2011, Japan experienced a 9.0 magnitude earthquake that caused a tsunami. The natural disaster damaged the Fukushima nuclear power plant and devastated the region. Damages to the nuclear power plant led to radioactive material irreversibly contaminating the water. Thousands of storage tanks were brought in to store the radioactive water. However, these storage tanks have begun to leak, and there are not enough tanks to store the water. The Japanese government announced that it will dump the radioactive water into the ocean. Doing so will threaten marine life and the fishing economy, not just locally but also internationally. Other nations have ceased importing seafood from Fukushima and its surrounding areas.

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CASE DESCRIPTION: ILLEGAL DRUG TRADE IN COLOMBIA

Perspective 1: Drug Production

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with illegal drug production in Colombia and to propose potential interventions to address the problem. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of key events leading up to and influencing the drug production situation,
- (2) a visual representation of the primary players involved in the situation and their relationships,
- (3) potential interventions that you think can help address the situation, and
- (4) the envisioned impact of your intervention and how you anticipate players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about Colombia and a set of resources to help you accomplish your goals.

General Background

The Colombian government has been involved in an armed conflict with left-wing guerillas and right-wing paramilitary groups since the 1960s. The United States government has been providing support to the Colombian government for decades. Over the years, both guerillas and paramilitary groups have engaged in criminal activities, including kidnapping, extortion, illegal drug trade, and illegal mining, to fund their operations. Due to the armed conflict, over seven million Colombians have been displaced from their homes and have become refugees within their own country. In August of 2016, the Colombian government reached a peace deal with the largest and most powerful guerilla group: the Revolutionary Armed Forces of Colombia (FARC). Five years after the deal was signed, much of the help that was promised has not reached the communities the help was promised to, with armed groups still controlling small villages. However, the signatories have also not returned to battle. While the armed groups remain, FARC as an institution has not rearmed.

Resources

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CASE DESCRIPTION: ILLEGAL DRUG TRADE IN COLOMBIA

Perspective 2: Drug Trafficking

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with illegal drug production in Colombia and to propose potential interventions to address the problem. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of key events leading up to and influencing the drug production situation,
- (2) a visual representation of the primary players involved in the situation and their relationships,
- (3) potential interventions that you think can help address the situation, and
- (4) the envisioned impact of your intervention and how you anticipate players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about Colombia and a set of resources to help you accomplish your goals.

General Background

The Colombian government has been involved in an armed conflict with left-wing guerilla and right-wing paramilitary groups since the 1960s. The United States government has been providing support to the Colombian government for decades. Over the years, both guerillas and paramilitary groups have engaged in criminal activities, including kidnapping, extortion, illegal drug trade, and illegal mining, to fund their operations. Due to the armed conflict, over seven million Colombians have been displaced from their homes and have become refugees within their own country. In August of 2016, the Colombian government reached a peace deal with the largest and most powerful guerilla group: the Revolutionary Armed Forces of Colombia (FARC). Five years after the deal was signed, much of the help that was promised has not reached the communities the help was promised to, with armed groups still controlling small villages. However, the signatories have also not returned to battle. While the armed groups remain, FARC as an institution has not rearmed.

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CASE DESCRIPTION: ILLEGAL DRUG TRADE IN COLOMBIA

Perspective 3: Illegal Mining

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with illegal drug production in Colombia and to propose potential interventions to address the problem. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of key events leading up to and influencing the drug production situation,
- (2) a visual representation of the primary players involved in the situation and their relationships,
- (3) potential interventions that you think can help address the situation, and
- (4) the envisioned impact of your intervention and how you anticipate players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about Colombia and a set of resources to help you accomplish your goals.

General Background

The Colombian government has been involved in an armed conflict with left-wing guerilla and right-wing paramilitary groups since the 1960s. The United States government has been providing support to the Colombian government for decades. Over the years, both guerillas and paramilitary groups have engaged in criminal activities, including kidnapping, extortion, illegal drug trade, and illegal mining, to fund their operations. Due to the armed conflict, over seven million Colombians have been displaced from their homes and have become refugees within their own country. In August of 2016, the Colombian government reached a peace deal with the largest and most powerful guerilla group: the Revolutionary Armed Forces of Colombia (FARC). Five years after the deal was signed, much of the help that was promised has not reached the communities the help was promised to, with armed groups still controlling small villages. However, the signatories have also not returned to battle. While the armed groups remain, FARC as an institution has not rearmed.

Resources

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CASE DESCRIPTION: ILLEGAL DRUG TRADE IN COLOMBIA

Perspective 4: Internally Displaced People (IDPs)

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues associated with illegal drug production in Colombia and to propose potential interventions to address the problem. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of key events leading up to and influencing the drug production situation,
- (2) a visual representation of the primary players involved in the situation and their relationships,
- (3) Potential interventions that you think can help address the situation, and
- (4) The envisioned impact of your intervention and how you anticipate players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some general background information about Colombia and a set of resources to help you accomplish your goals.

General Background

The Colombian government has been involved in an armed conflict with left-wing guerilla and right-wing paramilitary groups since the 1960s. The United States government has been providing support to the Colombian government for decades. Over the years, both guerillas and paramilitary groups have engaged in criminal activities, including kidnapping, extortion, illegal drug trade, and illegal mining, to fund their operations. Due to the armed conflict, over seven million Colombians have been displaced from their homes and have become refugees within their own country. In August of 2016, the Colombian government reached a peace deal with the largest and most powerful guerilla group: the Revolutionary Armed Forces of Colombia (FARC). Five years after the deal was signed, much of the help that was promised has not reached the communities the help was promised to, with armed groups still controlling small villages. However, the signatories have also not returned to battle. While the armed groups remain, FARC as an institution has not rearmed.

Resources

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CASE DESCRIPTION: NAGORNO-KARABAKH CONFLICT

Perspective 1: Armenia

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding the conflict in Nagorno-Karabakh between Armenia and Azerbaijan and the potential interventions to address the conflict. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events leading up to and influencing the conflict in Nagorno-Karabakh,
- (2) a visual representation of the key players involved in the conflict in Nagorno-Karabakh and their relationships,
- (3) potential interventions that you think can help address the situation, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the conflict in Nagorno-Karabakh and a set of resources to help you accomplish your goals.

General Background

The Nagorno-Karabakh conflict between Christian Armenians and Muslim Azerbaijanis is both an ethnic and a territorial dispute over the Nagorno-Karabakh region, going back to World War I. During the fall of the Ottoman Empire, Armenians were expelled from Turkey and killed in what many countries today, including the U.S., have declared a genocide. A war broke out during the late 1980s between Armenians and Azerbaijanis after Armenia demanded that Nagorno-Karabakh be returned to Armenia. After a series of battles over several years, a ceasefire was negotiated between the two countries in 1994, leaving Nagorno-Karabakh under Armenian control, protected by Russian peacekeepers. The ceasefire remained in place and was being adhered to until heavy fighting broke out in September of 2020 after a breakdown of further talks between Armenia and Azerbaijan.

Resources

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CASE DESCRIPTION: NAGORNO-KARABAKH CONFLICT

Perspective 2: Azerbaijan

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding the conflict in Nagorno-Karabakh between Armenia and Azerbaijan and the potential interventions to address the conflict. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events leading up to and influencing the conflict in Nagorno-Karabakh,
- (2) a visual representation of the key players involved in the conflict in Nagorno-Karabakh and their relationships,
- (3) potential interventions that you think can help address the situation, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the conflict in Nagorno-Karabakh and a set of resources to help you accomplish your goals.

General Background

The Nagorno-Karabakh conflict between Christian Armenians and Muslim Azerbaijanis is both an ethnic and a territorial dispute over the Nagorno-Karabakh region, going back to World War I. During the fall of the Ottoman Empire, Armenians were expelled from Turkey and killed in what many countries today, including the U.S., have declared a genocide. A war broke out during the late 1980s between Armenians and Azerbaijanis after Armenia demanded that Nagorno-Karabakh be returned to Armenia. After a series of battles over several years, a ceasefire was negotiated between the two countries in 1994, leaving Nagorno-Karabakh under Armenian control, protected by Russian peacekeepers. The ceasefire remained in place and was being adhered to until heavy fighting broke out in September of 2020 after a breakdown of further talks between Armenia and Azerbaijan.

Resources

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<https://www.washingtontimes.com/news/2020/oct/22/nagorno-karabakh-is-part-of-azerbaijan-on-that-bas/?msclkid=3bcc9dacfcf11ecb5d195c8bf0ddcc8>

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CASE DESCRIPTION: NAGORNO-KARABAKH CONFLICT

Perspective 3: Israel

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding the conflict in Nagorno-Karabakh between Armenia and Azerbaijan and the potential interventions to address the conflict. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events leading up to and influencing the conflict in Nagorno-Karabakh,
- (2) a visual representation of the key players involved in the conflict in Nagorno-Karabakh and their relationships,
- (3) potential interventions that you think can help address the situation, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the conflict in Nagorno-Karabakh and a set of resources to help you accomplish your goals.

General Background

The Nagorno-Karabakh conflict between Christian Armenians and Muslim Azerbaijanis is both an ethnic and a territorial dispute over the Nagorno-Karabakh region, going back to World War I. During the fall of the Ottoman Empire, Armenians were expelled from Turkey and killed in what many countries today, including the U.S., have declared a genocide. A war broke out during the late 1980s between Armenians and Azerbaijanis after Armenia demanded that Nagorno-Karabakh be returned to Armenia. After a series of battles over several years, a ceasefire was negotiated between the two countries in 1994, leaving Nagorno-Karabakh under Armenian control, protected by Russian peacekeepers. The ceasefire remained in place and was being adhered to until heavy fighting broke out in September of 2020 after a breakdown of further talks between Armenia and Azerbaijan.

Resources

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CASE DESCRIPTION: NAGORNO-KARABAKH CONFLICT

Perspective 4: Russia

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding the conflict in Nagorno-Karabakh between Armenia and Azerbaijan and the potential interventions to address the conflict. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events leading up to and influencing the conflict in Nagorno-Karabakh,
- (2) a visual representation of the key players involved in the conflict in Nagorno-Karabakh and their relationships,
- (3) potential interventions that you think can help address the situation, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the conflict in Nagorno-Karabakh and a set of resources to help you accomplish your goals.

General Background

The Nagorno-Karabakh conflict between Christian Armenians and Muslim Azerbaijanis is both an ethnic and a territorial dispute over the Nagorno-Karabakh region, going back to World War I. During the fall of the Ottoman Empire, Armenians were expelled from Turkey and killed in what many countries today, including the U.S., have declared a genocide. A war broke out during the late 1980s between Armenians and Azerbaijanis after Armenia demanded that Nagorno-Karabakh be returned to Armenia. After a series of battles over several years, a ceasefire was negotiated between the two countries in 1994, leaving Nagorno-Karabakh under Armenian control, protected by Russian peacekeepers. The ceasefire remained in place and was being adhered to until heavy fighting broke out in September of 2020 after a breakdown of further talks between Armenia and Azerbaijan.

Resources

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Mikovic, N. (2020, November 9). *The Nagorno-Karabakh conflict: Will Russia lose Armenia? Toward Freedom*. <https://towardfreedom.org/story/admin/the-nagorno-karabakh-conflict-will-russia-lose-armenia>

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CASE DESCRIPTION: NAGORNO-KARABAKH CONFLICT

Perspective 5: Turkey

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding the conflict in Nagorno-Karabakh between Armenia and Azerbaijan and the potential interventions to address the conflict. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (5) a timeline of the key events leading up to and influencing the conflict in Nagorno-Karabakh,
- (6) a visual representation of the key players involved in the conflict in Nagorno-Karabakh and their relationships,
- (7) potential interventions that you think can help address the situation, and
- (8) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the conflict in Nagorno-Karabakh and a set of resources to help you accomplish your goals.

General Background

The Nagorno-Karabakh conflict between Christian Armenians and Muslim Azerbaijanis is both an ethnic and a territorial dispute over the Nagorno-Karabakh region, going back to World War I. During the fall of the Ottoman Empire, Armenians were expelled from Turkey and killed in what many countries today, including the U.S., have declared a genocide. A war broke out during the late 1980s between Armenians and Azerbaijanis after Armenia demanded that Nagorno-Karabakh be returned to Armenia. After a series of battles over several years, a ceasefire was negotiated between the two countries in 1994, leaving Nagorno-Karabakh under Armenian control, protected by Russian peacekeepers. The ceasefire remained in place and was being adhered to until heavy fighting broke out in September of 2020 after a breakdown of further talks between Armenia and Azerbaijan.

Resources

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CASE DESCRIPTION: PLANTING TREES IN CITIES

Perspective 1: Energy

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding planting trees in U.S. cities and the potential interventions to address the issues. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events influencing U.S. cities to plant more trees,
- (2) a visual representation of the key stakeholders surrounding U.S. cities planting more trees,
- (3) potential interventions that you think can help address the issues surrounding planting trees in U.S. cities, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the issues surrounding planting trees in U.S. cities and a set of resources to help you accomplish your goals.

General Background

Cities are losing millions of trees each year, which can have major impacts on the health of citizens and on the environment. Within urban environments trees are often lost due to commercial and residential developments, to a lack of care, to invasive species, and to disease. Lower income neighborhoods have the least amount of tree coverage, resulting in disparities between wealthy and poor communities. Additionally, trees that are left or planted within urban environments are mostly male trees, which produce pollen that may cause allergies.

Resources

Frangoul, A. (2020, April 17). *How the mass planting of trees could transform our cities and tackle air pollution*. Consumer News and Business Channel. <https://www.cnbc.com/2020/04/17/how-the-mass-planting-of-trees-could-transform-our-cities.html>

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CASE DESCRIPTION: PLANTING TREES IN CITIES

Perspective 2: Health

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding planting trees in U.S. cities and the potential interventions to address the issues. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events influencing U.S. cities to plant more trees,
- (2) a visual representation of the key stakeholders surrounding U.S. cities planting more trees,
- (3) potential interventions that you think can help address the issues surrounding planting trees in U.S. cities, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the issues surrounding planting trees in U.S. cities and a set of resources to help you accomplish your goals.

General Background

Cities are losing millions of trees each year, which can have major impacts on the health of citizens and on the environment. Within urban environments trees are often lost due to commercial and residential developments, to a lack of care, to invasive species, and to disease. Lower income neighborhoods have the least amount of tree coverage, resulting in disparities between wealthy and poor communities. Additionally, trees that are left or planted within urban environments are mostly male trees, which produces pollen that may cause allergies.

Resources

Anzilotti, E. (2017, October 02). *Cities should think about trees as public health infrastructure*. Fast Company. <https://www.fastcompany.com/40474204/cities-should-think-about-trees-as-public-health-infrastructure>

Hunt, K. (2020, April 27). *Planting trees could help this city prevent 400 premature deaths*. CNN. <https://www.cnn.com/2020/04/27/health/trees-live-longer-premature-deaths-philadelphia-wellness/index.html>

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CASE DESCRIPTION: PLANTING TREES IN CITIES

Perspective 3: Maintenance

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding planting trees in U.S. cities and the potential interventions to address the issues. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events influencing U.S. cities to plant more trees,
- (2) a visual representation of the key stakeholders surrounding U.S. cities planting more trees,
- (3) potential interventions that you think can help address the issues surrounding planting trees in U.S. cities, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the issues surrounding planting trees in U.S. cities and a set of resources to help you accomplish your goals.

General Background

Cities are losing millions of trees each year, which can have major impacts on the health of citizens and on the environment. Within urban environments trees are often lost due to commercial and residential developments, to a lack of care, to invasive species, and to disease. Lower income neighborhoods have the least amount of tree coverage, resulting in disparities between wealthy and poor communities. Additionally, trees that are left or planted within urban environments are mostly male trees, which produces pollen that may cause allergies.

Resources

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CASE DESCRIPTION: PLANTING TREES IN CITIES

Perspective 4: Security

Tasks

For the first stage of this practical exercise, your main goals are to understand the issues surrounding planting trees in U.S. cities and the potential interventions to address the issues. You have approximately one hour to complete this stage of the exercise. After one hour, your team will share the following points with the rest of the class:

- (1) a timeline of the key events influencing U.S. cities to plant more trees,
- (2) a visual representation of the key stakeholders surrounding U.S. cities planting more trees,
- (3) potential interventions that you think can help address the issues surrounding planting trees in U.S. cities, and
- (4) the envisioned impact of your intervention and how you anticipate the other key players might react.

Make sure you manage your time appropriately so you can be ready to present within one hour. Below, you can find a short paragraph providing some background information about the issues surrounding planting trees in U.S. cities and a set of resources to help you accomplish your goals.

General Background

Cities are losing millions of trees each year, which can have major impacts on the health of citizens and on the environment. Within urban environments trees are often lost due to commercial and residential developments, to a lack of care, to invasive species, and to disease. Lower income neighborhoods have the least amount of tree coverage, resulting in disparities between wealthy and poor communities. Additionally, trees that are left or planted within urban environments are mostly male trees, which produces pollen that may cause allergies.

Resources

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Overview

You will explore a complex real-world sociocultural system (SCS) in small teams and discuss potential interventions with the class.

1. Review materials on the issue your team has been assigned to address (60 minutes)
2. Share your team's understanding of the situation and how your team thinks it could be improved (40 minutes)
3. Consider the broader SCS beyond your specific issue and discuss interventions in new teams (20 minutes)
4. Whole-class discussion about interventions (25 minutes)
5. Final discussion/debrief (25 minutes)

1. Review materials on your issue

- Think about which aspects of the situation are critical for your peers to understand the issue
- Draw visual representations to capture the structure and dynamics of the situation
- Consider potential interventions and how you anticipate they might impact the situation
- Be ready to share what you learned after 1 hour

2. Share what you learned

- Focus on aspects of the situation that are important for peers to know, to understand, and to develop interventions to address the situation
- Propose potential interventions (given what you know) and how you expect them to impact SCS
- Limit your presentation to no more than 10 minutes
- Be ready to answer questions

3. Consider the broader SCS

- New teams
- You will team up with individuals who explored a perspective different from yours during Stage 1
- Integrate/synthesize your understanding and your representations to better understand the broader SCS
- Identify leverage points and develop potential interventions to discuss with the whole class

4. Discuss interventions

- Teams briefly present their planned interventions and contrast them
- Whole-class discussion to develop a promising, sustainable intervention

5. Final discussion/debrief

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14. ABSTRACT U.S. Army missions can occur in a wide variety of environments and cultures, necessitating the development of sociocultural systems thinking (SCST) skills in Army leaders. SCST is characterized as an awareness that the operational environment is affected by a multitude of factors, that these factors are affected and changed by each other, and that culture and social relationships are pervasive throughout this system. The Analyses of Behaviors in Systems (ABS) practical exercise was developed by the U.S. Army Research Institute as part of its endeavor to improve Army leaders' SCST. ABS is discussion-based and designed to be implemented by a facilitator in groups of varying sizes. Each group will analyze a problem, within a sociocultural system (SCS), from a particular perspective, and then participants will be reorganized into new groups where each participant will be responsible for explaining their previously learned perspective to the rest of the new group. The new groups will then integrate multiple different perspectives to propose solutions to problems with the SCS. ABS uses real-world events to cover various SCS concepts, such as boundaries, environmental influence, goal conflict, and leverage points.					
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