Lesson Guide

U.S. and China Seek Relationship Counseling: Technology in the Crosshairs

VOCABULARY (Definitions are in the context of technology)

To ally: *combine or unite a resource or commodity with (another) for mutual benefit.*

Artificial Intelligence (AI): *the theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.*

Bifurcation: *the division of something into two branches or parts.*

Collaboration: *the action of working with someone to produce or create something.*

Constructive Dialogue: *respectful conversations allowing growth from each other's insights and perspectives towards achieving a common goal.*

Decouple: *separate, disengage, or dissociate (something) from something else.*

Etiquette: *the customary code of polite behavior in society or among members of a particular profession or group.*

Intellectual Property (IP): *a work or invention that is the result of creativity, such as a manuscript or a design, to which one has rights and for which one may apply for a patent, copyright, trademark, etc.*

National Security: *the ability of a country's government to protect its citizens, economy, and other institutions.*

Quadrupets: *(aka: 4 Little Core Techies) fictitious nickname for four core technologies (AI, 5G, Semiconductor and Quantum) whose future development is greatly affected by the U.S. and China relationship.*

Quantum Computing: *A technology that harnesses the phenomena of quantum mechanics to deliver a huge leap forward in computation (as compared to traditional computing) to solve certain problems.*

Self-sufficiency: *able to maintain oneself or itself without outside aid.*

Semiconductor or Chip: *an electronic component necessary in many high tech consumer electronics and products.*

Supply chain: *the network of individuals, companies, resources, activities, and technologies needed to make and sell a product or service.*

Tariff: *a tax or duty to be paid on a particular class of imports or exports.*

Trade War: *a situation in which countries try to damage each other's trade, typically by the imposition of tariffs or quota restrictions.*

Tech War: *a battle for leadership in core technologies (e.g., 5G, AI, quantum and semiconductors).*

CLASS DISCUSSION GUIDE

1. The United States and China formalized their relationship in 1979.
    a. **What did each side hope to gain from the other?** *The United States hoped to expand its foreign diplomacy and influence (ie., closer ties with China would strengthen its position with the Soviet Union during negotiations), and the U.S. also hoped to achieve greater access to the vast Chinese market and achieve long term collaboration. China hoped to gain access to the U.S. technology it needed for its economic modernization goals, narrow the scientific and technological gap, and expand its exports to the United States.*
    b. **Name some U.S.-China collaborations that took place between 1979 and 2016**. *Examples: In February 2002, Jiang Zemin and George W. Bush agreed in Beijing to establish a China-U.S. Working Group on Climate Change; the U.S. Department of Energy and Beijing Municipality launched a series of joint development and demonstration projects aimed at displaying the potential of environmental and clean energy technologies at the Beijing Summer Olympics in 2008. In May 2002, China and the U.S. signed a new Memorandum of Understanding on Cooperation on HIV/AIDS prevention and research. Others: Landsat Remote Sensing Ground Station, Beijing Electron-Positron Collider, China Digital Seismic Network, the model for nuclear safety management and regulation, joint discovery of a hitherto unknown spiral-shaped galaxy, Dalian Industrial Management Training Center, air-sea interaction studies on the West Pacific, biological control of forest pests, and a number of large-scale public health-related epidemiological studies carried out in northern China.*
    c. **What started to bring about a change in the U.S.-China relationship around the 2010s? Where does the relationship stand now?** *In 2010, China surpassed Japan to become the 2nd largest economy in the world after the US. By the mid-2010s, geopolitical movements, increased trade imbalance, and concerns over IP theft prompted the U.S. to institute trade tariffs on China, which China then reciprocated. As of 2022, the U.S.-China relationship remains strained due to 1) security concerns over shared technologies (eg., 5G, AI), 2) blacklisting of Chinese technology companies wanting to invest in the U.S. or obtain advanced U.S. technologies, and 3) continued import bans on goods related to human rights abuses.*

2. **How did the 'Trade War' morph into a 'Tech War'?** *On July 6, 2018, Washington initiated trade tariffs due to the increasing trade imbalance with China. However, due to concerns that China was using unfair methods (state power, IP theft) to become a global technology leader, the 'Trade War' became a 'Tech War" when the U.S. blocked China from access to core U.S. technologies. In response, Beijing announced their "Made in China 2025" initiative to become self-sufficient in technologies such as AI, semiconductors and 5G. This prompted the U.S. to review its own supply chains for core*

products (chips, batteries, rare earths and medical supplies.)

3. **Why is Science and Technology such a point of contention between the U.S. and China?** *Science and technology innovations not only contribute significantly to the prosperity of a nation but can affect a country's national security, and China's technological rise is viewed as a possible threat to U.S. dominance.*

4. **Why are the "Quadrupets" or "little Core Techies" (AI, 5G, Semiconductor and Quantum) so important to each country? (Think about what these technologies are used for.)** *Semiconductor technology is necessary for advanced AI, 5G/Broadband, and quantum technology applications used for National Security and profitable consumer and commercial products. Though in its infancy, quantum technology is predicted to be able to render current security algorithms obsolete.*

5. **If the U.S. and China decided to decouple, what are some effects this would have:**
   a. **on technology development?** *Reduced collaboration could weaken or slow progress due to duplication of efforts, there may be differing technology protocols and governance standards forcing users to choose specific platforms (think Apple vs Android), cutting edge products may not be available to rival countries, a competition to push products to market quickly could prove dangerous (eg., phones with exploding batteries, unsafe vaccines, etc.).*
   b. **globally, on other countries?** *Countries may have to build supply chain redundancy should access to goods become unavailable; they could negotiate between the U.S. and China to obtain better deals and bargaining power; they may need to choose which technology base to commit to.*

6. **Why are the allies or "friends" so worried about the U.S.-China relationship? How are the countries "intertwined in different ways"?** *Many of the high-tech goods at the center of U.S.-China tensions are manufactured by global companies that compete in both U.S. and Chinese markets or rely on technologies developed or manufactured in the United States and China.*

7. **In the past, national security was predominantly militarized. With the advent of digital or dual-use technologies, what are some non-military levels of security that are affected and must now, also, be protected?** *Economic security, political security, energy security, homeland security, cybersecurity, human security, and environmental security.*

PROJECTS

1. Write a letter to the President of the United States with your ideas on what needs to be done to progress the dialog with China.
2. If you were the Relationship Counselor, what would you suggest to the U.S. and China?
3. What countries do the 6 "friend" balls represent? Where are they located geographically? Who are the members of the "Quad" and what is their significance?
4. Debate the global pros and cons of maintaining a constructive relationship with China vs. decoupling.
5. What project would you suggest the U.S. and China collaborate on? Describe the goals of the project, the project itself, and who it would benefit and why.