

UNCLASSIFIED

# GLOBAL FUTURES REPORT

## ALTERNATIVE FUTURES OF GEOPOLITICAL COMPETITION IN A POST-COVID-19 WORLD



### A COLLABORATIVE ANALYSIS WITH FORESIGHT PRACTITIONERS AND EXPERTS

Air Force Warfighting Integration Capability (AFWIC)

Strategic Foresight and Futures Branch

June 2020

Distribution Statement A. Approved for public release: distribution unlimited

UNCLASSIFIED

# TABLE OF CONTENTS

<b>02</b>	<b>Introduction / Executive Summary</b> Lt Col Jake Sotiriadis, USAF, Ph.D. Chief, Strategic Foresight and Futures Branch, AFWIC  Jairus V. Grove, Ph.D. Director, Hawaii Research Center for Futures Studies
<b>03</b>	<b>Executive Summary</b> Strategic Foresight and Futures Branch, AFWIC
<b>04</b>	<b>Strategic Foresight and Futures Studies: A Methodological Approach</b> Lt Col Jake Sotiriadis, USAF, Ph.D. and Jairus V. Grove, Ph.D.
<b>07</b>	<b>Four Global Scenarios for a Post-COVID-19 World</b> Lt Col Jake Sotiriadis, USAF, Ph.D. and Jairus V. Grove, Ph.D.
<b>15</b>	<b>The Future of Geopolitical Competition in Space</b> Kara Cunzeman Lead Futurist, Center for Space Policy and Strategy, the Aerospace Corporation
<b>18</b>	<b>The Future of Competition and Autonomous Systems</b> Major Laura Hunstock, USAF Strategic Foresight and Futures Branch, AFWIC
<b>22</b>	<b>The Future Nexus of Supply Chains and National Security</b> Jason Schenker Chairman, The Futurist Institute
<b>26</b>	<b>The Future of Malign Influence Campaigns</b> Vera Zakem Senior Technology and Policy Advisor, Technology for Global Security
<b>29</b>	<b>The Future of China's Belt and Road Initiative</b> Shannon McGurk Strategic Foresight and Futures Branch, AFWIC
<b>31</b>	<b>The Future of Geopolitical Competition in the Middle East</b> Marwa Maziad, Ph.D. Visiting Scholar in-residence, Jackson School of International Relations, University of Washington
<b>38</b>	<b>The Future of the European Union and Implications for Transatlantic Relations</b> Lt Col Jake Sotiriadis, USAF, Ph.D. Chief, Strategic Foresight and Futures Branch, AFWIC
<b>42</b>	<b>Conclusion</b> <b>About the Authors</b> <b>Appendix A: Acronym List</b>



# INTRODUCTION

Lt Col Jake Sotiriadis, USAF, Ph.D., and Jairus Grove, Ph.D.

The COVID-19 pandemic sheds an important light on the criticality of futures-based thinking to move us beyond conventional assumptions and positions. In today's chaotic cycle of rapid change, growing complexity, and radical uncertainty, the national security establishment must develop the skills and flexibility to adapt to the unexpected. To be sure, the fallout from COVID-19 has revealed overlooked vulnerabilities for our supply chains, our society, our economy, and—most pertinent for this report—our national security strategy, **which relies on all three**.

The primary aim of this report is to disrupt how we conceptualize national security futures. Rather than arrive at “definitive” conclusions or prescribe budgetary, policy, or force structure recommendations, this document instead challenges us to consider how the future can defy accepted probabilities to affect the Department of Defense and the Department of the Air Force.

We are living far from “equilibrium system,” when novel and even catastrophic change are most likely. However, in every alternative future—no matter how severe or unexpected—there are always winners and losers. The organizations best positioned to seize and incorporate the exploits of the new order will be those with the capability to perceive, learn, and adapt even when the signals from tomorrow may seem utterly ridiculous today.



**Lt Col Jacob S. Sotiriadis, USAF, Ph.D.**

Chief, Strategic Foresight and Futures Branch, AFWIC

**Jairus Victor Grove, Ph.D.**

Director, the Hawaii Research Center for Futures Studies  
The University of Hawaii at Manoa

Washington, D.C., June 2020

\*The authors' views expressed in this document are their own and **do not** reflect official positions or endorsements of the Department of Defense or the Department of the Air Force.



# EXECUTIVE SUMMARY

We develop four overarching, global scenarios that feature transformation, collapse, discipline, and continued growth outcomes. These global scenarios **do not represent the most probable or likely outcomes**—rather, the report harnesses **emerging weak signals** from **environmental scanning analysis** (that likely seem improbable today) and weaves them into the possible futures of a post-COVID world.

- ◆ **Global Future #1 (Transformation) – 2035 “From Bio-hegemony to Bio Supremacy:”** The new “Great Powers” are those states that have achieved superior levels of bio-resiliency vis-à-vis their peer competitors. National bio-data stockpiles, coupled with a new blend of capabilities in artificial intelligence, satellite-based imagery, and unprecedented global connectivity, have raised the premium on fielding *networked* military forces. Those states that possess bio-resiliency, along with the capability to instantly make information ubiquitous across their security apparatuses, dominate the new competition.
- ◆ **Global Future #2 (Systemic Collapse) – 2035 “The New Warring States Period:”** Scholars label the 2030s as the new “warring states” period—referring both to the ancient Chinese conflict era as well as the outbreak of the 21st century’s first continental-scale civil war in China. This marks China’s second civil war in less than 100 years. The most dramatic factor contributing to this new, global instability is the **legitimacy crisis** wrought by COVID-19. Additionally, a **second legitimacy crisis emerges around the “truth narrative”** itself. Industrial scale science and medicine—which had doubled life expectancy and nearly ensured food security in the 20<sup>th</sup> century—are now widely seen as tools for societal manipulation.
- ◆ **Global Future #3 (Discipline) – 2035 “Authoritarian Regionalism:”** Severe strains on social order have driven both liberal and authoritarian regimes alike towards highly centralized and restrictive measures. Surveillance regimes are no longer voluntary. Access to basic necessities requires consent and cooperation with real-time bio-surveillance as well as unannounced health checks at home or work. National militaries, and in particular **national air forces**, often find themselves replacing commercial supply chains and even the oversight of production and local distribution of goods to prevent riots and hoarding.
- ◆ **Global Future #4 (Continued Growth) – 2035 “Endemic Disruption:”** States with the capability to maintain data profiles of their populations and the populations of competitors can map and predict the intensity and timeline of each new disease outbreak. This capability has resulted in a kind of stochastic hegemony. While the disease’s mutation cannot be predicted, once an outbreak begins, states with stochastic hegemony can determine when the populations and the armed forces of their competitors will be disrupted and how long they will be vulnerable to attack. The curse and high ground of this ‘rhythmic readiness’ has created instability and enabled territorial incursions, as states know they have a locked in advantage for weeks or even months. The U.S. Air Force benefits significantly from the necessity of a new offset strategy to limit the reliance on troop levels. Less civilian air traffic and greater access to the skies is limited by the proliferation of unmanned aerial vehicles (UAVs) and long term, low-orbit surveillance systems.



# STRATEGIC FORESIGHT AND FUTURES STUDIES: A METHODOLOGICAL APPROACH

Lt Col Jake Sotiriadis, USAF, Ph.D. and Jairus V. Grove, Ph.D.

## WHAT IS “FUTURES STUDIES”?

Simply stated, futures studies (or strategic foresight) is an academic discipline that seeks to foster anticipatory thinking to aid decision-making.<sup>1</sup> Foresight practitioners are well-versed in the processes of identifying weak or emerging signals as well as sources of disruption and societal change agents. Part and parcel of strategic foresight is the crafting of "alternative futures" (or "scenarios") within the context of helping an organization or community plan for and move towards its **preferred future**.

All too often, organizations tend to coalesce around one particular vision of the future, which can expose major vulnerabilities in strategic planning. As we see today, even expertly calculated probabilities are of no use when you are fighting your way out of a situation you did not anticipate. **This is why futures studies is not about correctly predicting the future.** Rather, it uses multiple images of possible—even if not probable—futures to test our intellectual arsenal for strategic adaptation.

## HOW DOES THIS DIFFER FROM TREND ANALYSIS OR INTELLIGENCE ANALYSIS?

Trend analysis shows us what to expect if the present continues; intelligence assessments, on the other hand, give us likely adversary courses of action based on established patterns of behavior. Alternative futures can create a virtual training ground for decision-makers who will face adversaries and global dynamics more complex and more dangerous than we have previously confronted.

As a habit of mind, strategic foresight requires imaginative approaches to design that are often at odds with organizational cultures requiring high levels of cohesion. In times of radical change—during pandemics, geopolitical crises, systemic transformations, or major shifts in domestic political culture—experimentation can appear imprudent. But it is the capacity to develop and maintain intellectual capital for new thinking that enables us to take the high ground when our security environment is turned upside down.

## WHY DO WE EMPLOY SCENARIO MODELING?

At some level, we are all “futurists” in that we all anticipate outcomes beyond the present. Preparing for the unexpected is a bit like the time travel equivalent of red teaming.

The goal here is to envision a *believable* yet *unanticipated* world and confront the limits/creative possibilities of existing capabilities. In order to provide the best possible audit of present capacity, we want to create four distinctive futures that challenge core assumptions about present trends.

<sup>1</sup> For more reading on futures studies, see:

Wendell Bell, *Foundations of Futures Studies: Human Science for a New Era*, Volume 1, Transaction Publishers, 1997;  
 Jim Dator, *World Futures Review*, Volume 7, Number 4, December 2015;  
 Jennifer Gidley *The Future: A very short introduction*. Oxford University Press, 2017;  
 Richard A. Lum, *4 Steps to the Future: A Quick and Clean Guide to Creating Foresight*, (Futurescribe: Honolulu, HI) 2016;  
 Richard Slaughter, *Knowledge Base of Futures Studies*, Revised 2020;  
 Amy Webb, *The Signals Are Talking: Why Today's Fringe is Tomorrow's Mainstream*, (PublicAffairs), 2016.



## THE “FOUR FUTURES” FRAMEWORK

One of the most widely-employed methodologies for crafting alternative futures scenarios is the “Four Futures” method. Developed by the Hawaii Research Center for Futures Studies (or “the Manoa School”), this model employs four archetypes of the future (see Figure 1).

The “Four Futures” are generic images of the future that recur throughout history, public debates, and popular culture; but they also *stretch the limits* of what we think of as logically possible.<sup>2</sup>

These four archetypes are:

1. Transformation
2. Collapse
3. Discipline
4. Continued growth

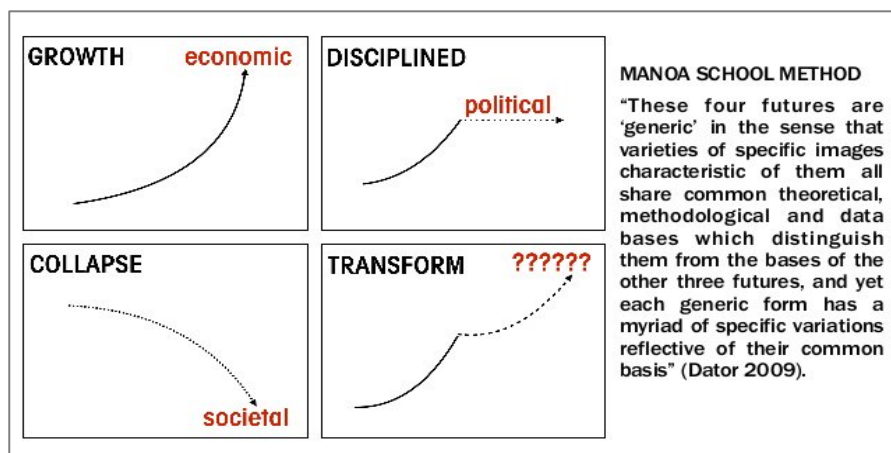


Figure 1 Graphical representation of the Manoa School “Four Futures” Method

### Transformation Futures

**...address a fundamental shift in the rules of an established order.**

We should keep in mind, however, that transformation is a subjective outcome. As such, transformation futures represent neither a “good” nor a “bad” systemic transformation. For example, the French revolution was a transformation future, but less enticing for the *Ancien Regime* than those storming the Bastille. More importantly, the social logic of authority and legitimacy were never the same again after the French Revolution. Phenomena such as democracy, populism, and market economies have intensified freedom as much as they have intensified both the scale and destructive character of war.

### Collapse Futures

**...show us the possibility of a sudden loss of order.**

They provoke us to consider how we would adapt to a radical change in our expectations or to the rules of change. Examples of a collapse future are the end of the Cold War or the collapse of the European colonial system after World War II. Collapse futures highlight that actors must rapidly make new rules, find new alliances, or find new advantages in a system where the old rules no longer apply. These collapses can highlight unitary drivers, such as the structure of the international system; complex collapses like the reversal of globalization; or the dark ages after the fall of Rome. Again, such outcomes are not necessarily “good” or “bad,” but depend of historical, contextual, and subjective interpretations.

<sup>2</sup> The names of these scenarios partially speak for themselves. However, each and every archetype can have bright and dark variants. Remember—in every future there are winners and losers. Therefore, the central question is always: “bright and dark for whom?” What kinds of actors and organizations will succeed in a given future and which are likely to become obsolete or even extinct?



### Discipline Futures

*...show us that collapses are not always complete or transformational.*

Instead, a new collapse or the loss of a major ordering principle may lead to a period of heavy-handed control in the place of a previously stable and distributed construct. Consider the period during the Great Depression through the Second World War—here, the regulating of prices, the freedom of movement (at times), and the rationing of goods, were all planned and managed nationally because the market economy failed to accomplish these tasks. However, neither did Capitalism itself collapse, nor did a revolution take place (as it did in Russia in 1917). The international order was maintained artificially until a new institution like the Bretton Woods system could be established to manage the highs and lows of the global economy. Sometimes this is less pragmatic and more forceful—e.g. states move from republican to imperial models or states collapse and find themselves under trusteeship. A key insight of this future helps us to consider resource intensive labor and new roles institutions play when presented with a choice between collapse or survival.

### Continued Growth Futures

*...show us how different things could be if fundamental principles do not change.*

Our goal here is not to presume that situational dynamics will be the same in the future as they are today, but instead to see what the future might look like **if we do not** adapt, collapse, or transform. For example, what does the international order look like if the United States never enters the “Thucydides Trap” of a showdown with China? What would the consequences of a twenty-year “almost Cold War” look like? What if we never achieve general artificial intelligence and instead continue to expand levels of automated but not autonomous weapons deployment? The continued growth future is meant to show us **the costs of inaction** rather than surprise us with the unexpected.

## HOW DO WE BUILD SCENARIOS?

- ◆ We engineer alternative futures to produce the desired effect—disrupting assumptions and habits of thinking. However, we do not “invent” the futures. Instead, we populate each scenario with what we designate as “weak signals” discovered through the extensive efforts of horizon scanning.
- ◆ Weak signals are technologies, behaviors, cultural (and even religious) trends, changes in the ecosystem or agricultural system, and geopolitical shifts that we may only have a glimpse of. These weak signals likely seem far-fetched or outright improbable today.
- ◆ We should note that today’s “weak signals” are tomorrow’s reality — technologies like clustered regularly interspaced short palindromic repeats (CRISPR) (which potentially allow malign actors to develop a new generation of bioweapons), nationalism and state malfunction in well-established countries, new diseases, new forms of intelligence, the failure of things we depend on like antibiotics—are all signals which appeared weak sometimes only a few years ago and are now squarely in the realm of the possible.



# FOUR GLOBAL SCENARIOS FOR A POST-COVID-19 WORLD

Lt Col Jake Sotiriadis, USAF, Ph.D. & Jairus V. Grove, Ph.D.

## INTERPRETING THE SCENARIO FRAMEWORK

Framing the future of competition in a post-COVID world means we must first identify the prevailing sources of macro change *today*. This is an important process with which to map both the origins of disruption and their potential effects on our strategic planning. The sources of macro change represent external phenomena that broadly affect our economy, government structure, and societal norms. The intensification or deceleration of these major sources of macro change can point us to weak or emerging signals that deliver insights into alternative futures.

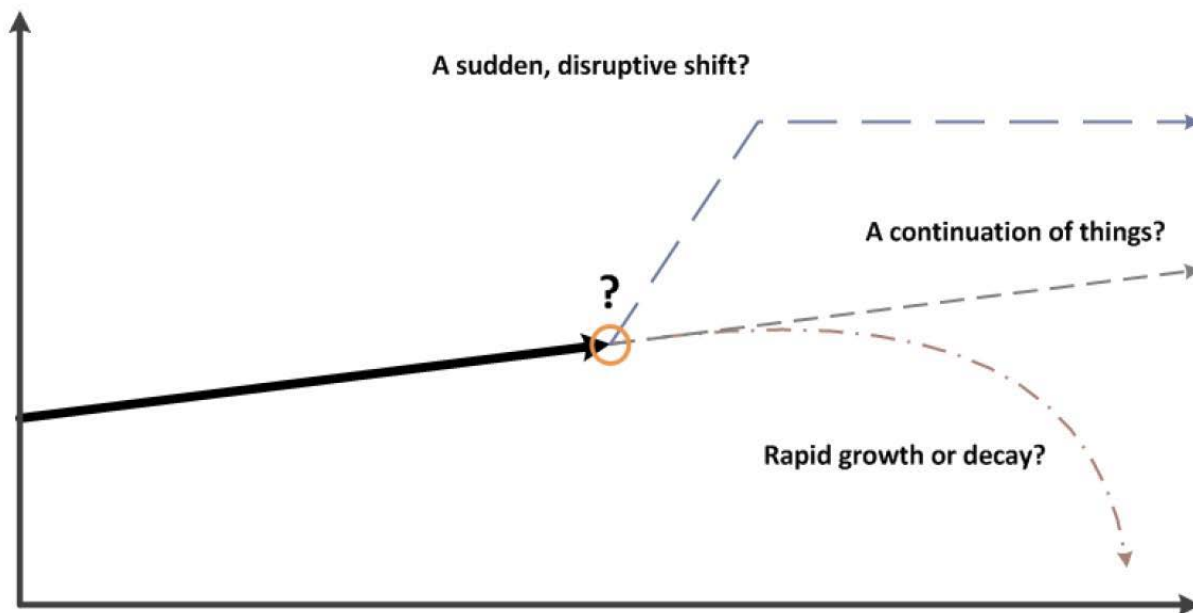
Our report employs in-depth **environmental** and **horizon scanning** of key areas that represent potential sources of macro change for the Department of Defense and the Department of the Air Force: space, autonomous systems, national security supply chains, malign influence campaigns, and geopolitical competition in key areas of interest to the United States and our allies. Cataloguing our horizon scanning data allows us to then “connect the dots” back to the Department and our service, positioning us to consider potential responses.

## WHAT DO THE SCENARIOS REPRESENT?

- ◆ We develop four overarching, global scenarios that feature transformation, collapse, discipline, and continued growth outcomes. These global scenarios reflect the combined insights gleaned from environmental scanning analysis across all identified areas of macro change.
- ◆ Additionally, several sections contain uniquely tailored alternative futures scenarios that correspond to a particular topic (e.g. the future of competition in space). This allows for a deeper look into key areas of interest and augments the main analysis in the global scenarios.
- ◆ It is critical to note that the global scenarios **do not represent the most probable or likely outcomes**—rather, the report harnesses **emerging weak signals** from environmental scanning analysis (that likely seem improbable today) and weaves them into the possible futures of a post-COVID world.
- ◆ We turn up the volume on these signals and build futures in which these possible (but low probability) events could be decisive in changing the world. We believe this creates the necessary feeling of reality and provides participants with provocative thought experiments that might actually transpire.







**Figure 2** Mapping Disruptive Shifts (Sourced from Richard K. Lum, "Four Steps to the Future")

## DISRUPTION HAPPENS—WHERE DO WE GO FROM HERE?

We cannot solve for future uncertainty—and it is worth re-iterating that futures studies is **not** about predicting the future. But the reality is that major systemic disruptions like the current pandemic are not usually at the forefront of our thought processes. Organizations that find themselves in the midst of a major disruption typically (and understandably) over-predict or under-predict the lasting effects the disruption may have on their strategic plans or vision.

**Figure 2** (above) characterizes the dilemma of decision-making in the midst of disruption. In some cases, a continuation of the pre-disruption order may ensue; in others, rapid growth, decay, or even a major transformation may characterize a completely different operating environment. The question we must ask ourselves, however, concerns our ability to “future proof” our strategic plans and assumptions in order to allow for alternative narratives, namely: “how do we build flexibility via foresight practices into our everyday plans and projections?”

Ideally, we should endeavor to incorporate alternative futures into our strategic planning process as a matter of practice—doing so in the midst of seismic shift becomes too late. In the words of Ted Newland, a foresight trailblazer at Shell: **“the greatest value of the scenarios is that they created a culture where you could ask anyone a question, and the answer would need to be contextual ... ‘because the business case is positive’ answer was out of bounds.”**



System-changing, disruptive events are far more common than most people imagine... And yet most [...] people behave as if they live in a continuous environment, as if their plans and business plans and projections are going to be relatively linear.

PETER SCHWARTZ

“Inevitable Surprises: Thinking Ahead in a Time of Turbulence”

## GLOBAL FUTURE #1: TRANSFORMATION

## “FROM BIO-HEGEMONY TO BIO-SUPREMACY”

**2035 – The new “Great Powers” are those states that have achieved superior levels of bio-resiliency vis-à-vis their peer competitors.**

Dynamic changes in immunity and genetic variability have transformed the way we manage and protect both intellectual and human capital. During the previous decade (2020-2030), national security has come to be re-defined as a continuous maintenance of national bio-data stockpiles—**this is now as important as projecting military power.** Developments such as real-time contact tracing, genetic profiling, pattern-of-life analysis for contagion, and AI-enhanced heuristics enable this new reality.



**Figure 3** World map with WMD hazard symbols superimposed. (Photo from Wikimedia Commons)

A new security threshold has also been crossed—many in the biosynthesis industry now argue that the human ecosystem can be *programmed*, not just predicted. Anticipatory and engineered health platforms are the new norm, powered by advances in CRISPR technology, real-time body/population simulations, and the computing power of quantum processors. More importantly, underlying medical conditions that contribute to morbidity can now be modified. Retroviral biomedicine enables us to copy and paste existing immunities in national populations within a period of weeks or months—rather than years and/or decades. Genetic and metabolic population management as well as strategic communications are now facilitated via continental-scale infrastructures across human-machine interfaces. Some societal groups—for religious or ideological reasons—refuse to be part of the human bio-security network. But fatality rates among those without access to health informatics and immunity modulation are comparable to Europe during the Middle Ages.

The multi-decade fight against COVID-19 and other emergent pathogens has transformed life expectancy into a *choice* rather than a mere question of fate. For those that can afford continuous, bio-informatic upgrades, only a handful of degenerative diseases still pose any real challenge. This new reality has also created unforeseen vulnerabilities—1) the data fueling these systems has now become a key financial commodity for exploitation; and 2) a population’s metabolism and immunity are now hackable in real-time—challenging international scientific research and humanitarian aid efforts. Few desire to leave their respective bio-security networks to travel “off-grid.” Those who do so face considerable scrutiny as well as long periods of quarantine before being re-admitted to the network.

Rumors persist about the race for more and more lethal forms of sabotage through surveillance and enhancement networks. Steering national, regional, and even individual genomes from sickness to health also makes it possible to steer individuals and groups from health, to sickness, to death. This complete transformation in bio-hegemony is now realized via a few keystrokes rather than the slow-plodding, social engineering of public education or eugenics.



**Figure 4** Improving global surveillance of antibiotic resistance. (Photo from AMR Digital Marketing)

But global insurgencies have also ensued—militant reactionary groups across the globe continue to resist the new status quo, which they view as a threat to both human dignity and individual freedom.

The new great powers compete with each other for bio-hegemony, and ultimately, bio-supremacy. National bio-data stockpiles, coupled with a new blend of capabilities in artificial intelligence, satellite-based imagery, and unprecedented global connectivity, have raised the premium on fielding *networked* military forces. Those states that possess bio-resiliency, along with the capability to instantly make information ubiquitous across their security apparatuses, dominate the new competition.

The incredible advances that preserve and perpetuate life in the new microbial environment also create a **new, information-centric high ground**, which scales from the nation-state to the single human genetic fingerprint.

## GLOBAL FUTURE #2: SYSTEMIC COLLAPSE

### “THE NEW WARRING STATES PERIOD”

**2035 - Scholars label the 2030s as the new “warring states” period—referring both to the ancient Chinese conflict era as well as the outbreak of the 21<sup>st</sup> century’s first continental-scale civil war in China. This marks China’s second civil war in less than 100 years.**

China was the first global power that dramatically failed to fulfill domestic expectations for public health, resource management, and improving its citizens’ quality of life. Xi Jinping’s “Neo-Confucianist” model, which aimed to re-define the CCP as the defender of Chinese national identity, could not bridge intense societal divisions. The economic disparities between China’s exploding urban economies and the abject poverty of ethnic minority, migrant, and agricultural populations became more than the CCP and PLA could manage—particularly as COVID-19 returned on multiple occasions.



**Figure 5** High Mobility Artillery Rocket System. (Photo by Senior Airman Isaac Johnson/U.S. Air Force)



**Figure 6** China’s Military Releases Video Aimed at Hong Kong. (Photo by VCG via Getty Images)

The “Chinese Dream” of the 2020s has turned into a global nightmare. China’s strategic centerpiece—the Belt and Road Initiative (BRI)—now exists in name only. Instead of extending all the way to Europe (as originally envisioned), the BRI cannot even connect Beijing to Shanghai. Major infrastructure projects underwritten by Chinese state-owned enterprises have ground to a halt in over 90 countries, contributing to a series of major economic recessions.

The bitter civil war in China was a harbinger of other conflicts to emerge in the 2030s. Bloody, secessionist struggles began to take shape

throughout the Middle East and also in several continental states. NATO’s overextension towards the East in the early 2000s—and a severe breakdown in transatlantic relations in the 2020s—has shaken the alliance’s ability to honor its commitments. The Eurasian Economic Union has attempted (with little success) to fill the economic void left by the Belt and Road Initiative in Central Asia, parts



of the Middle East, and Eastern Europe. Turkey is now a NATO member in name only and a series of energy wars in the Eastern Mediterranean continue to paralyze the alliance.

The most dramatic factor contributing to this new, global instability is the **legitimacy crisis** wrought by COVID-19. While many governments dismissed recurrences of the virus as merely “another flu,” COVID-19 re-doubled in population saturation and lethality every 6 to 9 months. States in every region of the world offered a diversity of solutions—from lockdowns, novel drug treatments, travel bans, and efforts to accelerate herd immunity—but an enduring solution was never found.

These failures created a **crisis of legitimacy in the state itself**, as governments were no longer able to deliver their basic function as guarantors of security.

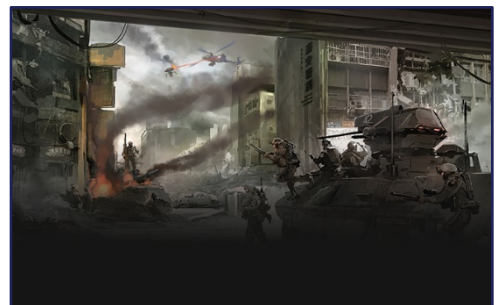
Additionally, a **second legitimacy crisis emerged around the “truth narrative”** itself. Industrial scale science and medicine—which had doubled life expectancy and nearly ensured food security in the 20<sup>th</sup> century—are now widely seen as tools for societal manipulation. COVID-19’s “success” as a virus is thought to be the result of human intervention and constant fine-tuning by competing, rival state actors. Rumors persist that a vaccine was actually found in 2023—however, the means to mass produce it no longer exist. The research team of international scientists developing the vaccine died in a plane crash that same year—but the cause and origins of the crash remain undetermined.



**Figure 7** Notional image of a COVID-19 Vaccine. (Photo by Reuters)

This betrayal of trust in the state chipped away at commonly shared beliefs of national obligation that once held states together. The decade-long collapse—and subsequent years of low intensity war and pandemic—wreaked havoc on the human population. This severe contraction resulted from shortages of food and medicine to treat diseases nearly eradicated in the 20<sup>th</sup> century (polio, dysentery, typhoid). Basic infections now often result in sepsis.

Non-state and para-state actors have initiated a revolution in military technology using the broken elements of the more advanced technological infrastructure that started in the 21<sup>st</sup> century. The components of the “internet of things” that was nearly realized (combined with the drone revolution), now litter a four-dimensional battlespace: improvised jamming equipment; hacked smart weapons; cyber terror tools; flying, digging, and swimming IEDs. Some of these new IEDs use face recognition capabilities common to phones and computers of the early 21<sup>st</sup> century—others employ simple machine learning and AI platforms repurposed from smart cars and intelligent refrigerators.



**Figure 8** Future Warfare Concept. (Photo by Army University Press)

The diminishing pool of healthy individuals to serve in military and security forces has increased reliance on UAVs, landmines, and other anti-personnel weapons that do not require humans. Command and control of former national militaries is fragile; international organizations are an afterthought as states struggle to recreate stability at smaller and more local scales. The states that are successfully rebuilding have: 1) leveraged natural territorial barriers; 2) managed sustainable agriculture through automated means; and 3) re-established a sense of community and purpose lost to more than a decade of isolation, fear, and destruction.

## GLOBAL FUTURE #3: DISCIPLINE

## “AUTHORITARIAN REGIONALISM”

**2035 - Severe strains on social order have driven both liberal and authoritarian regimes alike towards highly centralized and restrictive measures. Surveillance regimes are no longer voluntary. Access to basic necessities requires consent and cooperation with real-time bio-surveillance as well as unannounced health checks at home or work.**



**Figure 9** Regionalism Revisited. (Photo by LSE IDEAS)

During the 2020s and early 2030s, COVID-19's lethality fluctuated from one percent to five percent. Additional flash outbreaks of toxic shock syndrome among children and teenagers saw national health systems, governments, and societies teeter on the verge of collapse. Communities initially careened from total lock down to insurrection in an effort to use quarantining for containment. Each lockdown promised a vaccine in exchange for sacrificing a life outside. But as the virus became fully airborne, contact tracing efforts could not keep up with the sheer rate of outbreaks. The lack of cooperation from national populations led to the adoption of increasingly authoritarian measures.

Contagion levels and an inability to treat the now highly lethal disease have all but halted international travel. International commerce is intensely politicized and strict economic nationalism is the political consensus. Political parties, as they still exist, **are defined by how caustically they seek retaliation and resource competition.**



**Figure 10** Hong Kong Protestors and Riot Police. (Photo by Bloomberg/Getty)

The loss of both international trade regimes and global economic interdependence has contributed to isolationist and belligerently expansionist foreign policies around the planet. The hallmark, post-1945 international organizations have long been forgotten and with them any semblance of pre-existing alliance systems. Regional plunder is a common experience of weak states and freedom of navigation is fiercely contested. Sea Lanes of Communication are heavily mined, regional and national waters are patrolled by surface and submarine drones, and air travel is less frequent as it is increasingly unreliable. **Regional mercantilism** with **highly regulated internal movement** and economic activity characterize international relations.

Non-state actors and break away zones create frequent distractions for the central administrative states with the resources and power to quell insurrection. In other regions, these dynamics have led to nearly stateless warzones. Communities as we understood them in the 20<sup>th</sup> century now only exist online; these communities fluctuate wildly between nationalistic rage for competitor states/regions and nihilism, as living in isolation has severely undermined feelings of a positive future.

Few if any remaining militaries draw a distinction between domestic and international activities, as martial law under the auspices of a permanent pandemic emergency is the new default. Total collapse



**Figure 11** C-17 Globemaster III aircraft delivers pallets of water and food. (Photo by U.S. Air Force/Tech. Sgt. James Harper Jr.)

has been averted, and some high-functioning authoritarian regimes are preferable to others. The measure of a successful region or state is determined by its ability to manage strict resource rationing. Labor interruptions and the nationalization of economies has severely undermined the stability of agriculture as well as other essential consumer goods.

National militaries, and in particular **national air forces**, often find themselves replacing commercial supply chains and even the oversight of production and local distribution of goods to prevent riots and hoarding.

## GLOBAL FUTURE #4: CONTINUED GROWTH

### “ENDEMIC DISRUPTION”



**Figure 12** Chinese Military Command Center. (Photo by AP)

**2035 - States with the capability to maintain data profiles of their populations and the populations of competitors can map and predict the intensity and timeline of each new disease outbreak. This capability has resulted in a kind of *stochastic hegemony*.**

While the disease's mutation cannot be predicted, once an outbreak begins, states with ***stochastic hegemony can determine when the populations and the armed forces of their competitors will be disrupted and how long***

***they will be vulnerable to attack***. The curse and high ground of this ‘*rhythmic readiness*’ has created instability and enabled territorial incursions, as states know they have a locked in advantage for weeks or even months.

Since 2020, long term social distancing has been necessary to manage COVID-19 and other variants of the original outbreak. Scientists continue to work on a vaccine, claiming a breakthrough is just around the corner. Despite early optimism that warmer temperatures would slow the spread, little (if any) seasonality emerged. Fortunately, the case mortality rate of the disease has hovered between 1 and 2 percent. National policy responses now create predictable rates of spread and timelines for herd immunity after the outbreak of each new strain.

The decade of social distancing measures has also taken a significant toll on the labor supply. Chronic illness, work stoppages, and workplace closures have significantly decreased the reliability of human workers and military personnel alike. Automated platforms—for everything from production, to shipping, to long early warning systems, and even long-term military deployments—are increasingly the norm (although some criticize an overreliance on automation, claiming this was done before certain



**Figure 13** Russian Presidential Information Center. (Photo by Business Insider)



technologies were reliable). Few if any major breakthroughs in artificial intelligence have taken place in the last decade. However, the reliability of the human has diminished significantly making **machine learning platforms** and **heuristic targeting algorithms** more acceptable.

Demographic retreat—shorter life spans and lower birth rates—has compensated significantly for the disruptions in the food supply as well as well as once reliable supply chains. Drives to automation have encouraged onsite production, increased amounts of industrial 3D printing, and efforts to extract profit through reduced human labor and transportation costs.

**Similarly, the United States military has significantly reduced its basing footprint around the world.** Major staffing shortages, fears of bringing infection home, and allies' concerns of contagion have accelerated the isolationist trends that began in the mid-2010s. NATO exists now in name only. Many confidence building activities and joint operations have been re-tasked to virtual training environments. Similarly, international organizations like the United Nations play an increasingly diminished role and often suspend in-person meetings in favor of digital conferences. The world's normative legal order has morphed into a series of regional, rules-based systems.

Economic stagnation is also a new reality, endowing military branches with the first pick of citizens that possess the most important technical skills. However, with weakened populations, less economic activity, and crumbling infrastructure, fewer and fewer “breakthroughs” are realized. **This is a decade of improvement and recovery rather than the once predicted era of disruptive transformation.**

The U.S. Air Force benefits significantly from the necessity of a new offset strategy to limit the reliance on troop levels. Less civilian air traffic and greater access to the skies is limited by the proliferation of UAVs and long term, low-orbit surveillance systems. The Air Force, having absorbed what remained of the Space Force after the 2025 budget freeze, is also providing significant power projection and deterrent missions as freedom of navigation is strained under the pressure of diminished sea-based trade, fishing disputes, and frequent travel bans.



**Figure 14** F-35 Lightning II. (Photo by Lockheed Martin)

# THE FUTURE OF COMPETITION IN SPACE

Kara Cunzeman, Lead Futurist, Center for Space Policy & Strategy, The Aerospace Corporation

## OVERVIEW

Space is an increasingly indispensable domain that affects commerce, defense, and our everyday lives. Pre-COVID-19, progress in the space enterprise was steadily advancing. Space internet and remote sensing constellations continued to proliferate low-earth orbit (LEO). Venture capital and private investments flowed into a diverse set of startups. The recent announcement of the Space Force and associated organizational changes captures how the U.S. military is seeking to respond to the transforming security environment. The Artemis Program was also advancing towards enabling a human lunar landing in 2024—today, all of these activities now face major challenges.

Numerous conferences, business summits, and crucial decision-making milestones within the space industry have been deferred or cancelled. Manufacturing for launch and satellite product lines and associated supply chains has been significantly disrupted. Small businesses have also been disproportionately affected; Bigelow Aerospace, for example, recently laid off its entire workforce, claiming COVID-19 as the primary driver. OneWeb, a major leader in the competition for space-based internet services, filed for bankruptcy. Boeing, a “too big to fail” anchor of the Aerospace industry has asked for a multi-billion-dollar bailout.

When (and if) this situation dissipates, do we pick back up where we left off, or will we be somewhere different? Are there longer-term impacts or ripple effects that may unexpectedly surface that could completely change the known trajectories we have been on?

Our society is now reeling from the severe blow to the economy—as such, space issues are not first on most people’s minds today. However, the various domain-focused insights within this body of work serve as different lenses, providing deeper glimpses into how the geopolitical environment could be influencing the United States’ role in the world.



**Figure 15** Chief of Space Operations Gen. John Raymond testifying before the House Armed Services Committee. (Photo by Wayne Clark, U.S. Air Force)

Space is a key pillar of our inquiry to understand what great power competition might look like in a very uncertain future. Our foresight tools provide us with systematic and structured means for exploring possible futures in order to make better decisions—even under great uncertainty. In this section, we examine the space domain using the four futures foresight model: continuation, discipline, collapse and transformation. These frames help us to envision external factors that we believe the United States must consider if it desires to prevail in the competition for space post-COVID-19.

## POTENTIAL FUTURE A.

### Continuation: Business as Usual

Let us for a moment imagine that within the next few weeks or months, the U.S. and global economies make a rapid recovery and return to a status which was roughly in line with the pre-COVID spread. The job market is recovering, businesses begin recovering, and the months of lockdown have been left behind. There will likely be some schedule shifts to government and commercial space programs, but nothing devastating to overall outcomes. Space will continue to serve as one of many domains for which geopolitical and transnational power plays will be made.



**Figure 16** Orbiting satellite and space vehicle. (Photo by Carlos Clarivan/Space Photo Library)

Even if the economy and general way of life return to “normal,” there are significant challenges that the U.S. will need to overcome in order to capitalize on recent space developments for its national benefit. The problems of congestion in LEO, lack of international norms and behavior, heightened competition and tensions between the United States, Russia, and China in space, and the still-fragile but budding commercial space industry will continue to play out. Nonetheless, in this type of environment, the United States will face roughly the same challenges and opportunities it faced prior to the pandemic.

## POTENTIAL FUTURE B.

### Discipline: Order and Control

The global economic downturn and restrictions on travel caused by COVID-19 causes a “cooling period” between international competition, in which the primary focus of most nations shifts to the health and wellbeing of its citizens and economic solvency. Overwhelmed by internal concerns, the United States is unwilling to invest in next generation satellite architectures or ventures to the moon. This might mean the space enterprise will have to figure out how to maximize the lifetime of its current capabilities and delay its investments for future plans. However, quietly in parallel, peer competitors, (China for instance) could leverage such a “cooling period” implemented by the U.S. to focus on investing in key strategic areas for competitive gain.

When the global economy and global competition pick up, the U.S. is “shocked” at the new capabilities of its competitors with which it now cannot compete. This moment could offer a unique time for subtle, but meaningful shifts in strategic advantage that perhaps cannot be recovered.

## POTENTIAL FUTURE C.

### Collapse: Systemic Breakdown

The enduring impacts of the pandemic drive a global and systemic economic meltdown, worse than what was experienced in the 2008 financial crisis. As countries try to jumpstart commerce, there are recurring waves of the pandemic, which cripples the medical system. Over 40% of the small businesses in the space industry alone shut down. Boeing, among several other heavy hitters of the aerospace industry, require immense government bailouts. A culmination of bailouts across industries sends the markets into a spin as the debt reckoning of the U.S. starts to become clear. The global economy essentially comes to a grinding halt.



**Figure 17** Joint Space Operations Center. (Photo by US Air Force)

In this meltdown, the United States realizes how vulnerable and weak its supply chain is, with the Aerospace industry as no exception. Any commercial business able to continue its manufacturing is increasingly crippled by the lack of supply and must think creatively about how to outsource—perhaps by partnering with Mexico or Canada or vertically integrating their business. Many of the planned activities and systems going up into Earth’s orbit, the moon, or beyond must be reconsidered. In the 2020 general election, the U.S. Space Force and ventures back to the moon become politicized. In the following months, as the Pentagon begins a full rework of its entire budget, it decides to strip the Space Force of its authorities and defunds it to account for other duties it must meet in these trying times. Congress also demands the DoD to cut spending by 30%, focusing instead on domestic economic growth and priorities. The U.S. decides not to pursue the lunar gateway and cuts NASA’s budget by half. Space developments essentially move into an “ice age.”

## POTENTIAL FUTURE D.

### Transformation: High Tech and/or High Spirit Solutions

Promising a major economic recovery, the U.S. cultivates a targeted set of strategies to ensure that the immense progress made in the commercial space industry over the past two decades is not in vain. Washington is motivated by other peer competitors’ continue to investments in their own space industries. Since the U.S. has recognized the importance of the space domain to its vitality on the global stage, Washington prioritizes this effort even in the midst of economic uncertainty. Similarly, the U.S. government recognizes the need to accelerate its own space programs so that it can transform its capabilities in a fiscally constrained environment. In its approach, the U.S. government decides to invest in a technology pipeline, agile contracting, and strengthening partnerships with the commercial sector and international players.

This allows the U.S. to spread out responsibilities, alleviate weakness in supply chains, leverage cutting-edge technologies, and strengthen gaps in areas that require international cooperation such as debris mitigation, space traffic control, and norms of behavior.

The United States has successfully leveraged the space domain to elevate its strategic posture. In the meantime, China and Russia must spend the next several years playing catch-up based on the incredible progress the United States has made in transforming the space enterprise.

## SUMMARY

The COVID-19 pandemic can serve as an incredible moment for the United States to reflect and refocus its vision for the role that space serves in strengthening its strategic posture: where do we want our efforts in space to be? What have we learned about the strengths and weaknesses of the space enterprise (and the relative posture of our potential competitors) in this time of great change? How do we proceed from here given the uncertainty, yet high stakes of possible futures? The space industry needs to rethink itself. How is it going to spark innovative ways to continue our technology pipelines and accelerate progress for both its near-Earth as well as human exploration programs, which we have convinced ourselves are vital to U.S. leadership? If there are missteps along the rocky budgetary environment, how does the U.S. ensure there won’t be devastating, and possible irrecoverable setbacks for the space domain and its broader leadership posture?



# THE FUTURE OF COMPETITION AND AUTONOMOUS SYSTEMS

Maj Laura Hunstock, USAF, Strategic Foresight and Futures Branch, AFWIC

Lt. Gen. John Thompson, USAF, recently asked Elon Musk at the February 2020 Air Force Association Air Warfare Symposium about the future “revolution” in aerial combat. Musk replied, “Locally autonomous drone warfare is where it’s at, where the future will be. It’s not that I want the future to be this, that’s just what the future will be. The fighter jet era has passed. Yeah, the fighter jet era has passed. It’s drones.”<sup>3</sup> In the face of the COVID-19 crisis, the narrative surrounding autonomous and unmanned systems has the potential to change from one of skepticism and distrust to one of rapid adoption.



**Figure 18** Lt. Gen. John Thompson, commander of the Space and Missile Systems Center, speaking with Elon Musk, CEO of SpaceX, at the Air Warfare Symposium in February 2020. (Photo by Mike Tsukamoto, Air Force Magazine)

## OVERVIEW

In the face of the COVID-19 crisis, China is using drones and layered autonomous systems to continue combating the outbreak as well as augment its domestic supply chain. Drones are sharing information on loudspeakers, carrying signs with QR codes (for no-contact registration purposes), spraying disinfectant, delivering packages, and taking people's temperatures.<sup>4</sup> China is making use of programmed robots for contactless delivery to aid supply chains while preventing a resurgence of the outbreak. Chinese society seems comfortable with this level surveillance and monitoring in the name of public health, and is demonstrating high trust levels in autonomous machines. While our competitors seem to welcome the aid drones and autonomous systems can provide, the United States domestic population is unlikely to follow suit.

U.S. citizens traditionally have a distrust of invasive governmental surveillance and a general unwillingness to trade liberty for safety, but how might the current COVID-19 crisis change that? The effects of the COVID-19 present an opportunity for a shift in accepting more surveillance and automation in the name of public health, much like the terrorist attacks on September 11, 2001, did for airport security procedures. What if these automated or autonomous systems can prevent the next public health crisis? An ability to quickly reconstitute our societal norms and economic growth after this crisis may validate an acceptance of more surveillance and trust in autonomous systems.

Historically, Americans have been slow to adopt technologies and advancements that replace human control with machines. Hesitancy becomes unwillingness in the discussion of autonomous weapons control. The anecdotal “Terminator Conundrum” or ethical concerns surrounding an independent machine being able to decide who and when to kill is a common debate surrounding autonomous weapons systems. Autonomous systems charged with responsibilities such as life and death need both near perfect information and ethical sensibility, leading many to dismiss the possibility as science fiction.<sup>5</sup>

<sup>3</sup> Valerie Insinna, *SpaceX's founder tells US Air Force the era of fighter jets is ending*, (Defense News), 28 Feb 2020.

<sup>4</sup> Peter Diamandis, *Learning from China: 7 Hi-Tech Strategic for Pandemic Containment*, (Diamandis Tech Blog), accessed 1 May 2020.

<sup>5</sup> Lawrence Freedman, *The Future of War: A History*, (Public Affairs: New York), 2017, Page 245.



**Figure 19** The MQ-1B Predator (left) and MQ-9 Reaper (right) are two examples of RPA systems. (U.S. Air Force photo by Airman 1st Class Christian Clausen)

The U.S. Air Force took first steps in adopting the use of remotely piloted aircraft (RPA) for counter-insurgency operations such as counter-IED, armed over watch of troops, and high value individual (HVI) removal. However, RPA operations still have a human control element in every aspect of weapons employment. While some automation protocols are in place, an RPA pilot is still very much the pilot in command, controlling aircraft maneuvers and weapons employment.

In essence, RPA pilots are no different than a pilot in a manned system, with the exception that they are not at risk if the aircraft were to crash. In order to maintain this human control element, RPA operations require a large number of personnel to operate and are restricted to flying in special use airspace (SUAS) locations within the U.S. without extensive coordination.

While the United States may be uncomfortable with autonomous systems releasing weapons on the battlefield, peer competitors may adopt a more aggressive approach. The United States' ability to shape the norms and standards behind the adoption of autonomous systems will be important in maintaining a competitive edge in this space.

International humanitarian law requires three core principles for conduct in war:

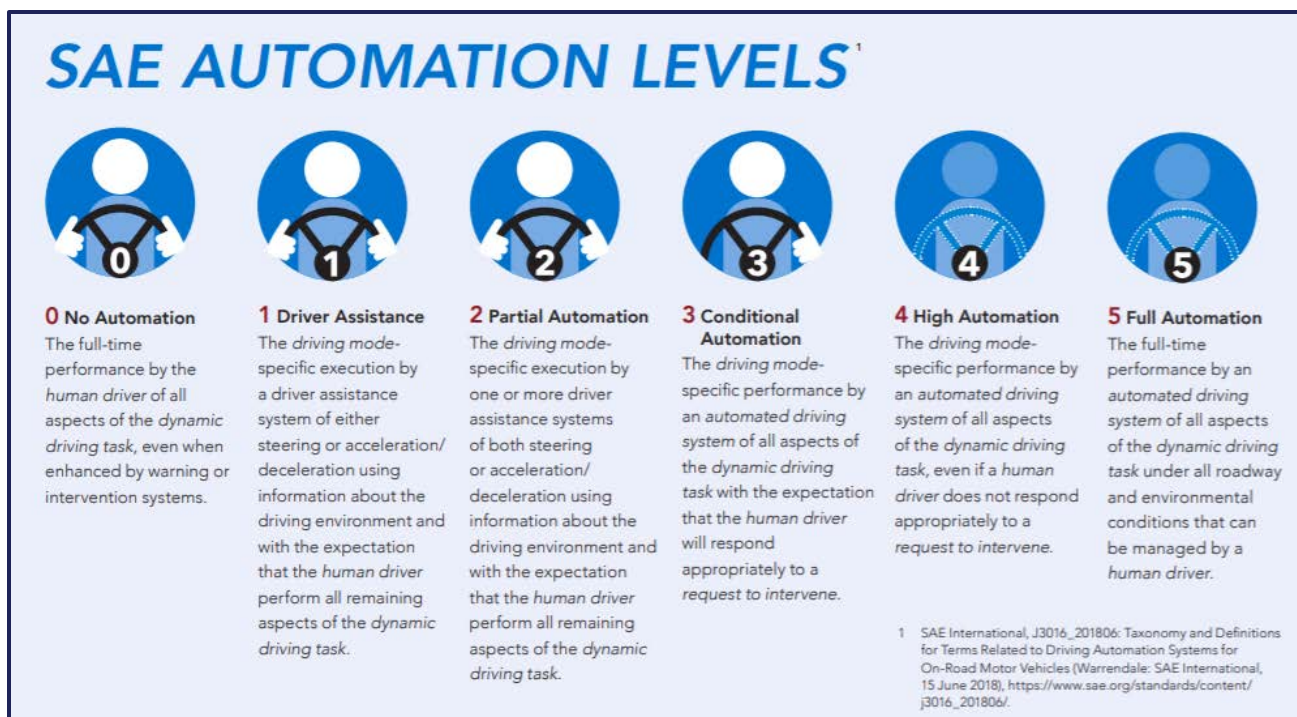
1. Distinction
2. Proportionality
3. Avoidance of unnecessary suffering

Future autonomous systems charged with employing weapons will need to be able to maintain these principles.

While promise exists in new machine learning techniques (such as neural networks), these technologies are far from mature enough to replace human judgement. Controlling the ethical conversation surrounding autonomous weapons systems internationally will be critical to maintaining U.S. leadership. As the international discussion evolves, internal policy issues of how the U.S. would mature and adopt autonomous systems domestically brings to light interesting conflicts.



The U.S. Department of Transportation, charged with oversight of the United States' autonomous vehicles policies, released updated guidance under "Preparing for the Transportation of the Future" on January 8, 2020. The number one automation principle called out in the document is "Prioritizing Safety," reflecting an inherent distrust of autonomous systems. When defining levels of autonomy, the document calls out six levels (zero through five) of automation with the highest level still optionally controlled by a human (see Figure 20 below).<sup>6</sup>



**Figure 20** SAE International Automation Levels outlined in "Preparing for the Future of Transportation." (Photo from the U.S. Department of Transportation, January 2020)

As regulations currently stand, commercial use of unmanned flying capabilities are limited in use partly due to Federal Aviation Administration (FAA) restrictions of when and where they can fly. Unmanned aircraft are viewed as less trustworthy and policy limits them from flying in shared airspace with manned aircraft. Autonomous cars and drone operations stand to be valuable in solving "last mile" issues associated with the growing e-commerce market as well as helping alleviate critical supply chain concerns in times of a public health crisis. However, Americans' reticence to accept any machine errors may greatly slow progression in this arena.

Cyber security measures will be a critical enabler of autonomous and unmanned systems for both military and commercial use. Overcoming resistance to the use of autonomous systems will require developers to invest heavily in ensuring their systems cannot be hacked or disrupted. Not only will trust in stand-alone systems be necessary, but also in how such systems will function in the layered and networked field of autonomy. Thus, any viable way ahead requires a delicate balance between transparency and protections against outside nefarious interference. In the wake of the COVID-19 pandemic, the employment of autonomous and unmanned systems to mitigate and control health crises will receive increased attention. Additionally, drones and autonomous vehicles stand to change the nature and characteristics of employing airpower as the Air Force builds an operations paradigm of multi-domain Airmen.

<sup>6</sup> U.S. Department of Transportation, *Preparing for the Future of Transportation: Automated Vehicles 3.0*, (U.S. Department of Transportation), 28 September 2018.

**POTENTIAL FUTURE A.****Continuation: Business as Usual**

U.S. and global economies recover rapidly from the effects of COVID-19. The DOD is able to return to pre-COVID readiness levels and the defense industrial base bounces back to pre-pandemic norms. But even if such a future materializes tomorrow, any “bounce back” will take time.

The DOD will likely enter at least a temporary era of budget austerity and hard choices about future platforms and technologies must be made. This is decidedly *not* a new problem. The DOD has acknowledged that it cannot place all capability in high end exquisite systems. As such, any shift that accelerates autonomous and unmanned technology developments must also reflect the policy challenges of operating autonomous systems domestically and in military operations. But in the short term, such a shift does not replace the role of the manned fighter. Funding for autonomous efforts may be cut in favor of sustaining/reviving existing programs such as the F-35 and next generation bomber.

**POTENTIAL FUTURE B.****Discipline: Order and Control**

The global economic downturn and restrictions on travel caused by COVID-19 results in a shift in priorities of most nations shifts toward domestic medical and economic concerns. This future inevitably takes the prioritization and funding away from some defense initiatives, however the development of autonomous and unmanned systems stands to make great progress as a means to health monitoring and “last mile” domestic transportation issues. The DOD benefits from private industry efforts to develop and perfect such technologies, adopting them as off the shelf solutions.

**POTENTIAL FUTURE C.****Collapse: Systemic Breakdown**

In this future, the effects of the pandemic drive global and systemic economic halt. As countries try to reopen their economies, they incur new spikes in both virus spread and deaths, overwhelming medical systems. This continues for some time without any medical breakthroughs in preventative vaccinations and screening/testing efforts. The defense industrial base is unlikely to survive an economic failure of this magnitude and massive government bailouts needed for its survival will be unavailable.

In this bleak version of events, the DOD will face a near dismantling of the defense industrial base that will cripple technological advancements. Autonomous and unmanned technologies may still be explored, however, breakthroughs will be greatly limited. Research and initiatives for these technologies will likely be focused on medical and health applications.

**POTENTIAL FUTURE D.****Transformation: High Tech and/or High Spirit Solutions**

In an effort to combat the next global pandemic, the use of drones and autonomous systems to contain outbreaks and solve supply chain issues will accelerate their development and mainstream adoption. Regulation and policy considerations for the adoption of autonomous and unmanned surveillance, transportation, and even weapons employment on the battlefield will likely be areas of rapid change and great debate. With this coming acceleration in technology, setting international norms and standards while leading the way in robust cyber security and protection for these systems is critical. The United States’ ability to effectively shape these conversations and policy decisions will translate into competitive advantage on the world stage.



# THE FUTURE NEXUS OF SUPPLY CHAINS AND NATIONAL SECURITY

Jason Schenker, Chairman, The Futurist Institute

## OVERVIEW

The COVID-19 pandemic has opened the aperture in many ways, revealing open secrets and overlooked risks—for our society, our economy, and our security. For national security, the COVID-19 pandemic has exposed the importance of being vigilant with our borders. And it highlights the risks of overly thin supply chains, as well as the potential downside of being dependent on the global supply chain for critical goods, like medical supplies, medical devices, basic necessities, and personal protective equipment (PPE), including gloves and masks.

## SUPPLY CHAIN AS NATIONAL SECURITY RISK

Overly thin levels of inventory as well as long supply chains present risks to national security in the United States. Most corporate entities have run their supply chain inventories exceptionally low. This thin level of supply produces risks, as does the geographic distance between trade partners, which introduces a lag time between which goods can be ordered and received.

As we have seen, this has been critical for medical devices and PPE. Trade risks were already a national security issue related to metals for materiel in the United States, which was the critical driving factor behind the implementation of the U.S. Section 232 tariffs on aluminum and steel. Additionally, the Section 301 tariffs highlighted risks to U.S. national security from Chinese threats to U.S. intellectual property.

Due to the crisis of COVID-19, PPE and medical devices are on the hot list, too. As a result, the U.S.-China trade war is likely to heat up from current levels, because risks that were previously considered somewhat fringe are now likely to be accepted as national security risks on a bi-partisan basis. In other words, both Democrats and Republicans may now come to see having critical goods, including metals for materiel, PPE for healthcare, foodstuffs, and paper products as important for maintaining civil order. In some respects, maintaining a secure supply chain is inherently difficult when the goods come from a country that is too far away for the goods to arrive quickly.

That realization is now going to receive more airtime—more talking space and room for discourse. So, we may very well see in the near term that both Democrats and Republicans will trip over themselves in order to support the idea of securing supply chains for critical medical devices, PPE equipment, foodstuffs, paper products, and pharmaceuticals to prevent the loss of American lives in the future—and to minimize the potential disruption or devastation of the American economy in the event of another pandemic.

After all, one of the big reasons we need to slow the spread of COVID-19 in the United States and “flatten the curve” is because there are not enough doctors, nurses, hospitals, ventilators, gloves, masks, or other equipment. If we could at least get the equipment piece under control, we may better protect the economy and the American people in the future.



Figure 21 Financial Markets Graph. (Photo from Osborne Clark)

## RISK OF EXPLOITATION

The COVID-19 outbreak has also revealed that the United States can be exploited in a pandemic-type event. Furthermore, if the United States could have been solely targeted it would have significantly threatened national security. Alternatively, if the United States could have been deceived into believing that flattening the curve could be beneficial—even when it was not—that, too, could have presented a risk.

This experience also reveals the vulnerability of the American public to media and social media messaging and potential manipulation around topics that may or may not be valid. These are risks presented by psychological operations and subjectivist truth.

In short, the United States from a national security perspective may very well wish to more firmly shore up technology, healthcare, medical, food, consumables, and other supply chains in order to ensure maximum stability over time. Additionally, COVID-19 has inadvertently revealed that a pandemic-level bio attack on the United States could be beyond economically devastating.

If adversaries of the United States were to implement such an attack, they could pair such action with social media and traditional media disinformation for maximum disruption, political destabilization, and economic devastation in a way that could completely destabilize the United States as an entity for at least a brief period of time.



**Figure 22** House Speaker Nancy Pelosi, House Minority Leader Kevin McCarthy, left, and House Majority Leader Steny Hoyer, right, signing the CARES Act in March 2020. (Associated Press / Andrew Harnik)

These kinds of risks may sound extreme. But we have also seen foodstuffs run low. And we have seen the American populace have to quarantine at home.

On the policy side, the Fed is massively expanding its balance sheet by potentially adding \$4 trillion. Fiscal policy stimulus in the Coronavirus Air, Relief, and Economic Security (CARES) Act involved a \$2.3 trillion package.

These policy actions alone underscore the real costs of being unprepared.

If we were to consider the cost of having just produced more ventilators, masks, and gloves—and if we had simply educated more doctors and nurses, those costs would have likely been infinitesimal compared to the potentially \$6 trillion-plus in policy support taken in order to prevent a collapse of the entire U.S. economy.

## “NOISE” FRAMEWORK

When I considered the importance of the COVID-19 pandemic for national security, I created what I call the NOISE framework, which examines some of the most important factors that contribute to national security and political stability.

Here is the NOISE framework, and the five critical factors that contribute to national security and political stability:

<b>Necessities</b>	Food, water, power, shelter, safety
<b>Occupations</b>	Jobs, vocations, hobbies
<b>Information</b>	Access to accurate, complete information
<b>Systems</b>	Financial, healthcare, transportation, education
<b>External</b>	International relations, military, supply chain, trade



As you can see, **first come the necessities**, which I have included as food, water, shelter, and safety. If people do not have these, then there are easily risks of political instability.

If these factors are stable, then a country or economy is likely to remain on an even keel. In the most recent experience of the COVID-19 pandemic, concerns about safety and food emerged. Maintaining the U.S. supply chain and basic services as well as utilities (like power and water) is critical.

**Second are occupations.** These stem from the notion that people — at the population level — need things to do. Can people be retired and do essentially nothing? Yes, of course. But as a nation, people need jobs, vocations, and hobbies. They just need to be doing something.

The need for this stabilizing force is tied to the old notion that “idle hands are the devil’s workshop.” This became a critical issue during the COVID-19 pandemic outbreak, as people were forced to “shelter in place.” Some people could still work, but others were concerned about their jobs. This is why the CARES Act was so important. Even if people cannot work, they need to know their chance of still having jobs will remain high after the pandemic ends.

**The third element of stability is information.** Information is not opinion. Real information is critical for maintaining order and keeping people calm and aligned with the same interests. Under information, I have included sharing accurate and complete information. The risks here are misinformation, disinformation, opinion presented as fact, and subjectivist truth, when the truth is, in fact, *objective*.

**Fourth are systems.** National security depends on the proper functioning of a number of critical systems, including the financial system, the healthcare system, the transportation system, and the education system. All of these have been disrupted or are at risk of being disrupted by the COVID-19 pandemic.

**The fifth element of national security stability is the external.** This includes international relations, the existence and ability to deploy the military, the global supply chain, and trade. Fortunately, some of these core elements, like international relations and the military, have not yet been disrupted by the COVID-19 pandemic. But the global supply chain and trade have.

When considering the NOISE framework, it’s easy to see how the COVID-19 pandemic has actually threatened all of these different pillars of national security and political stability in one way or another. And these risks justify the Fed’s drastic action to support the credit markets, the federal government passage of the \$2.3 trillion CARES Act to preserve jobs, the daily briefings about COVID-19 directly from White House staff and administration leaders to share information, and why some supply chain regulations and laws may change in the future — especially with regard to medical devices, medical equipment, medications, and PPE equipment.

The COVID-19 pandemic threatened to push U.S. national security to the brink. But we have held the line so far because of significant and swift action from a wide swath of vested parties. This will not be the last time such a risk appears. Thus, shoring up risks in advance could prove critical; especially because the next incidence might not be an accident.

The following four potential scenarios highlight how national security supply chains may be affected by future international relations between China and the United States—and create ripple effects in global supply chains post-COVID-19:

## POTENTIAL FUTURE A.

### The Hollywood Ending

The international competition between the United States and China becomes deprioritized. The competition between the United States and China gives way to international peace and

collaboration on multiple levels, including scientific research, supply chains, and vaccine development. All concerns fade about initial COVID-19 data transparency, long-term international competition, and the Chinese push toward economic, political, and military hegemony over Asia. This would represent a truly transformational type outcome, given decades-long trends in place and elevated concerns in the COVID-19 pandemic era.

## POTENTIAL FUTURE B.

### Trade War Détente

The hopes for an end to the U.S.-China trade war that were high at the end of 2019 are revived in the wake of the COVID-19 pandemic. Some trade restrictions remain in place, but some are dialed back. If there are additional future trade restrictions, these may be quite limited. The sense of economic symbiosis increases, as opposed to a sense of economic competition. This is a challenging dynamic, as it necessitates an important precondition of reduced competing counterparty rhetoric. This scenario also requires a reduction of national security concerns about forced technology transfers, supply chain security, and a propensity for military conflict and influence in the South China Sea.

## POTENTIAL FUTURE C.

### The Best of Frenemies

The competition between the United States and China ramps up over a period of quarters or years. The U.S.-China trade war enters an accelerated phase, in which trade restrictions imposed by the Section 232 and Section 301 tariffs are augmented by additional tariffs on medical devices and materials. Competition also manifests itself in additional supply chain restrictions, prioritizing U.S. consumption of goods from the United States and the NAFTA/USMCA region. Manufacturing increases as a percent of the U.S. economy. Some technology companies as well as other priority firms are forced to implement bifurcated supply chains to serve both the United States and China. Relations between Washington and Beijing are take on an uneasy “frenemy dynamic,” punctuated by alternating moments of symbiosis and elevated competition.

## POTENTIAL FUTURE D.

### Destined for Proxy War?

The fallout from COVID-19 leads to an almost immediate direct conflict between the United States and China. A Congressional inquiry into COVID-19 data sharing as well as exposed medical device supply chains leads to significant trade restrictions and geopolitical backlash against China. Supranational organizations like NATO and the United Nations are pulled into the conflict. Feeling threatened, the Chinese government ramps up its ground game in countries suffering from COVID-19 to shore up support for its strategic objectives. As Chinese disinformation campaigns, soft policy diplomacy, and directed influence funding accelerate, proxy wars become almost inevitable.

## MANUFACTURING COMPANIES AND NATIONAL SECURITY

In addition to broad-based national security risks that have been revealed by the COVID-19 pandemic, there are also risks associated with disruption to national security vendors.

Some companies that produce goods for national security uses (i.e. airplane manufacturers and airplane parts manufacturers) could find themselves suffering from challenging economic and business conditions as part of the slowdown in air travel.

While this is a second-order impact of the COVID-19 pandemic, it is a critical issue of primary importance for national security entities. **Looking ahead, national security organizations will need to more aggressively monitor economic and business risks of critical vendors.** This is just as



true for large publicly traded vendors as it is for startups that provide essential materiel to the defense industry.

How the government addresses these risks in the future is up for debate and unclear, but one thing seems certain: *even if these kind of national security vendors may not be too big to fail, they may be too **important** to fail.*

# THE FUTURE OF MALIGN INFLUENCE CAMPAIGNS

Vera Zakem, Senior Technology and Policy Advisor, Technology for Global Security

## OVERVIEW

In the last twenty years, state and non-state actors have expanded the use of malign influence to sow distrust in democratic societies and emerging economies:

1. From the early beginnings of the Global War on Terror where the focus was (and continues to be) in countering terrorist propaganda on and offline;
2. Russia waging a multi-faceted disinformation and malign influence campaign in targeted parts of the world;
3. China spreading state propaganda to push targeted narratives both to its population and globally in order to shape geo-strategic competition;
4. Individuals, including fringe elements of society such as white supremacists, spreading conspiracy theories in order to incite hate and violence.

Our adversaries' use of malign influence tactics are not new. However, in the COVID-19 era, we are seeing a convergence of these actors propagating to such an extreme. Everyday citizens don't know where to turn to for reliable and credible information. While no one can predict the future, in a post-COVID world, we will likely both state and non-state actors continue to exploit vulnerabilities in our society and weakened institutions, potentially working together as part of more coordinated influence campaigns. The disinformation and influence campaigns may occur online (mainstream and social media) and proliferate offline to the physical world, with the potential to cause real world harm, abuse, violence, and further divide fractured societies.



**Figure 23** Disinformation and Propaganda Keyboard Graphic. (Photo by Observer Research Foundation)

In this “*infodemic*” campaign<sup>7</sup>, (labeled by the World Health Organization), state actors such as Russia, China, and others will continue to exploit our vulnerabilities and divide democratic societies. The goal here is to play a “spoiler role,” by using information (as well as political, economic, and military tools) in order to discredit Western institutions and strategically project and alter elements of regional and global power balances. In the wake of the global pandemic, Russia will continue to not only push conspiracies about the origins of the virus, its causes, and treatments, but will amplify false narratives about the virus, societal and political divisions that originate in America. We will continue to see Russia use all elements of its malign influence<sup>8</sup> tool kit to influence targeted populations, including the use of state media, online fake personals, cultural, historical, business, and political channels. Key to Russia's strategy has been and will likely continue to be adapting and adjusting its tactics to see what resonates with vulnerable populations and societies.

China, Iran, terror groups, and fringe elements of our society will continue to use the instability and paralysis caused by the virus to impact geopolitical competition in a post-COVID world for years to come. In the near to mid-term, we will see China use tactics from Russia's playbook by spreading

<sup>7</sup> John Zarocostas, *How to Fight an Infodemic*, Volume 395, Number 10225, Page 676, The Lancet, 29 February 2020.

<sup>8</sup> Vera Zakem, Paul Saunders, Umida Hashimova, & P. Kathleen Hammerberg, *Mapping Russian Media Network: Media's Role in Russian Foreign Policy and Decision-making*, CNA, January 2018.

conspiracy theories about COVID and internal societal divisions in order to sow fear and distrust in democratic societies. Violent extremist organizations (VEOs), domestic extremists, and global terrorist movements will likely leverage the instability of COVID-19 to their advantage. We have already seen white supremacists in the U.S. spread disinformation, recruit followers, and try to foment a war against minorities. We may see ISIS and other transnational terrorist organizations pushing disinformation to shape their strategic messaging at the local and regional levels.

Disinformation and misinformation narratives are (and will likely be) effective in shaping the post-COVID-19 geopolitical competition, primarily because they exploit fundamental weaknesses in our democratic institutions. In the chaotic COVID-19 era, we will likely see a further weakening of these institutions. Here, we should include corrupt, partisan, and opaque media institutions; economic instability marked by a rise in unemployment, weak markets, and poor business performance; and widespread corruption across media, political, and business sectors. The pandemic creates fertile ground for both state and non-state actors to strategize, organize, and carry out their influence campaigns.

## LOOKING TOWARDS THE FUTURE

As we look into a post-COVID-19 world, a few key events stand out:

**First, the upcoming U.S. election will be a ripe ground for both disinformation and misinformation campaigns.** Of note, we are likely to see combined malign influence campaigns from state actors and non-state actors alike around COVID and broader issues that we typically see during an election season. This may include falsehoods about the economy, foreign policy, and science. In addition, the United States Government (USG) and industry will need to be alert for any adversarial cyber operations on our election systems, and disinformation about voting procedures. How the U.S. election plays out will likely shape global elections in critical parts of the world. Adversaries will likely take note and adapt their tactics in order to incorporate COVID-19 disinformation into their broader influence campaigns.



**Figure 24** Digital Disinformation. (Photo by AP)

**Second, we are likely going to see an increase in the infodemic in 2021, particularly if we see a second or third wave of the virus, and if full treatment is not available yet.** The disinformation will likely proliferate about the virus itself, the economy, and our security. We may see a situation where our adversaries will adapt their tactics from what has worked/not worked in 2020, and employ other approaches. For example, rather than simply create content or amplify, a probability exists that adversaries may team up in order to wage a broader malign influence campaign on targeted populations.

**Additionally, we cannot talk about the future without giving consideration about the role technology will play in aiding and countering disinformation and misinformation campaigns.** For example, while social media platforms have been the place where state and non-state actors go to push their narratives, they have developed strict policies and enforcement procedures to identify, review, and take down accounts that spread disinformation, abuse, and real-world harm. Furthermore, social media platforms are erring on the side of transparency to alert customers and users about what they are seeing and the actions they are taking. That said, adversaries may exploit technologies that have vulnerabilities and weaknesses in their design to further spread disinformation. Finally, in the post-COVID-19 world, we are likely going to see technologies developed that aim to counter infodemic, and assist both platforms and governments in countering adversarial malign influence campaigns.

## KEY IMPLICATIONS FOR THE U.S. AIR FORCE AND DOD

The U.S. Air Force and DOD as institutions should consider the following regarding the future of disinformation campaigns in a post-COVID world:

- ◆ Geopolitical competition and disinformation is no longer limited exclusively to Russia, China, Iran, or the VEOs. **Rather, we are more likely to see a congruence of these actors either jointly or independently waging simultaneous, multi-faceted influence campaigns on targeted populations at a global scale.** These campaigns will continue to target all facets of our society. This will be compounded by the use of offensive cyber operations on targeted populations.
- ◆ Addressing vulnerabilities and “root cause” issues in societies will continue to be crucial. Through joint special operations, civil affairs, partner training, and working with USG interagency partners, DOD and USAF will need to focus on **stabilizing the operating environment and strengthening weakened institutions, so that adversaries may be less successful in their ability to wage influence campaigns.**
- ◆ **DOD and the USAF will need to form partnerships with the technology sector, including startups developing emerging technologies to identify, disrupt, fact check, and verify disinformation patterns, and social media platforms.** The emergence of new technology to counter the complexities of malign influence campaigns will flourish. Identifying and partnering with the requisite entities will help USAF and DOD achieve their objectives of defeating adversarial malign influence campaigns in a post-COVID-19 world.

Malign influence campaigns by diverse actors are a reality that is here to stay. Developing a strategy, implementation, and assessment of USAF and DOD efforts will be key to successfully countering disinformation campaigns and shaping the geopolitical competition in a post-COVID world.



# THE FUTURE OF CHINA'S BELT & ROAD INITIATIVE

Shannon McGurk, Strategic Foresight and Futures Branch, AFWIC

## OVERVIEW

The PRC's initial goals for the Belt and Road Initiative (BRI) were to use state-owned enterprises with strong links to the People's Liberation Army to: 1) boost PRC domestic growth; 2) solve internal demographic problems; and 3) realize the PRC's strategy for dominating global economic-security diplomacy.

The global pandemic has accelerated the export of China's worst characteristics, while prompting delays and disruptions to BRI construction and investment plans. These delays risk years of planning and hundreds of billions of dollars in PRC economic diplomacy. Quarantine measures are keeping PRC workers from foreign building sites. PRC and target country firms supplying BRI projects face acute labor shortages and fears are growing that Chinese workers will inadvertently spread the virus to new locales. **The outbreak of COVID-19 in Wuhan and its rapid global spread presents China with a series of dilemmas in advancing the BRI.**



**Figure 25** Coronavirus forces Chinese President Xi Jinping to don face mask in public. (Photo by 7News.com.au)

## THE BRI AND COVID-19

The BRI is the Chinese Communist Party's (CCP) international, transcontinental, multi-domain strategic infrastructure construction project. It includes at least 68 countries with an announced investment by participants as high as \$8 trillion across Europe, Africa and Asia. While originally envisioned in 2013 to be limited to 60 countries, the CCP has expanded BRI—at the time of this writing, Italy was announced as the 130th participant country.

The BRI has become an infrastructure financing initiative for a large part of the global economy that will also serve key economic, foreign policy and security objectives for the Chinese government. While launched as an infrastructure project, it is now a strategic foreign policy initiative that showcases **China's alternative vision of global economic and political order** with concentric rings of public and private international stakeholders.

Today, **BRI progress is slowing** as participants confront COVID-19 and the reality of indebtedness to the PRC. BRI infrastructure contracts had been awarded almost exclusively to Chinese State-Owned Enterprises (SOEs) with strong ties to the People's Liberation Army (PLA), employed PRC labor and supplies, and relied on cheap credit from Chinese, state-owned banks to tie participant countries' resources and economies back to China.

While it is easy now to infer that PRC divestment in BRI is due to COVID-19 (reports from Beijing indicated that funding for BRI projects dropped in early 2020 by 80 percent) some of these cuts were already underway before the pandemic.



## THE URBANIZATION DILEMMA

The PRC has almost 20 percent of the world's population, but only seven percent of the earth's water (and nearly 25% of China's water is polluted). Chinese agriculture has not modernized to any great degree; in fact, China is perhaps more strategically dependent on imported food than any great power since Ancient Rome.



**Figure 26** Urbanization Dynamics in China. (Photo by Yale Insights)

Growing urbanization has exacerbated the food and water shortages, as urban populations use far more water than rural societies. Urbanization also creates a demand for more water-intensive food (such as pork and beef), especially as city-dwellers become more prosperous. China's urbanization rate continues to increase: by the end of 2017, some 58.52 percent of its population was urbanized, compared with only 17.92 percent in 1978.

To combat these critical problems, the PRC needs a profitable strategic outreach project that gives it access to resources, investment and economies receptive to its exports, chief among which are its people—the BRI serves to address the aforementioned policy goals.

## THE BRI AND A POST-COVID WORLD: HARSH REALITIES, POTENTIAL OPPORTUNITIES?

- ◆ China's management of the pandemic is revealing an urgent need to manipulate narratives and contort the truth. Some critics suggest the CCP may have launched COVID-19 to attack the U.S. economy.
- ◆ All BRI participant nations represent sources of disruption to China. Falling oil prices, combined with spiraling demographic trends, run the risk of collapsing the Chinese economy and straining the CCP's legitimacy to the breaking point.
- ◆ Chinese health-related initiatives will come under more international scrutiny. Digital Silk Road efforts will be held to global legal standards, transparency and technical scrutiny. While greater scrutiny may ultimately strengthen PRC standards and performance, this may come at a cost that could strain CCP legitimacy.



It must have been clear to the CCP for some time that the BRI is in trouble. In October 2019, the South China Morning Post reported that the “total value of new projects across 61 countries fell 13 percent to \$126 billion in 2018. Investments fell a further 6.7 percent by August 2019.”

## POTENTIAL FUTURE A.

### Continuation: China Plays Not to Lose

China continues BRI economic policy at its most fundamental level, increasing participant nation debt dependency and using BRI trade relationships to justify infrastructure development that accommodates PLA deployments. However, the scrutiny of the post-COVID19 world means the CCP, used to controlling almost every aspect of its initiatives, loses control of the broader BRI narrative. Loss of control at the speed of effective strategy is not something the CCP is prepared to weather.



## POTENTIAL FUTURE B.

### Discipline: China Plays to Win

China rebounds from COVID-19, consolidating gains and accelerating the BRI on its pre-COVID-19 trajectory. PLA expeditionary forces deploy along the BRI network. Participant BRI countries with lower financial reserves and fewer options are hardest hit, leading to BRI governments across the spectrum tightening control of their respective populations. In this scenario, COVID-19 may serve as a trigger event for a global financial re-set.

## POTENTIAL FUTURE C.

### Systemic Collapse: China, Asia or the World?

Demand for international transparency in a post-COVID-19 BRI world becomes a cascade to Beijing. The CCP is overwhelmed by a loss of information control, decrease in direct influence over BRI member nations, and the demand signal for openness. China attempts to fulfill higher manufacturing quality expectations associated with new norms in global trade. European countries lower protectionist barriers in response to trade competition. In order to compete, Chinese companies must make higher quality investments in better European companies. The CCP tries to exert greater influence on these transactions with increasingly less success.

China begins to look outward in order to export its domestic problems. Having already neutralized resistance in Hong Kong, Taiwan is the first external actor to feel threats to its stability. Exploiting COVID-19 uncertainty, China attempts to take control of Taiwan using Chinese civilians and civilian maritime vessels. Advances in algorithmic warfare enable China to employ digital twins of U.S. forces, equipment and leadership in a disinformation campaign against Taiwan. At the same time, wary of North Korea's nuclear capability, China feels compelled to intervene militarily and stabilize the country.

## POTENTIAL FUTURE D.

### Transformation: Fierce Competition with Clearer Eyes

Driven to cooperate as well as compete, the CCP scales back global investment, increases the leverage its banks exert on BRI participant countries, and exploits emerging technologies deployed in the developing world to mature trade opportunities and BRI interdependence. The CCP sees the U.S. as an existential threat to manage, but also as a means of political and economic exploitation to ensure CCP survival. This continues the dangerous dynamic currently in place in which the CCP simultaneously hates, fears, but also needs the United States. The U.S. slowly rebounds from COVID-19 and repatriates critical domestic manufacturing. PRC exports decrease from 15% to as little as 5% of its economy, driving Beijing to access currency reserves and scale back BRI adventurism. Washington encourages building a mutually respectful and beneficial long-term bilateral relationship, maximizes use of the BRI so both sides win based on realistic expectations, competition, and cooperation in an agreed upon framework.

## CONCLUDING THOUGHTS

COVID-19 reveals the harsh reality that China launched the BRI to address existential domestic needs, which, if unaddressed, **may contribute to a collapse of the CCP's leadership**. BRI regression will present renewed opportunities for cooperation with the US as well as further friction points for competition. This is particularly critical in terms of which **strategic narrative**—Washington's or Beijing's—is embraced by global opinion post COVID-19.



# THE FUTURE OF GEOPOLITICAL COMPETITION IN THE MIDDLE EAST

Dr. Marwa Maziad, Visiting Scholar, Jackson School of International Studies, University of Washington

## OVERVIEW

New fault lines are emerging in the Middle East and North Africa (MENA) that reflect a multi-faceted, regional power competition. Two emerging alliance networks underscore this new rivalry: 1) The Turkey—Qatar pan-Islamist alliance; and 2) the Egypt, United Arab Emirates, Saudi Arabia, Bahrain, statist-militarized-secularizing pact (also known as the Arab Quartet).



**Figure 27** Renewed military competition in the Middle East. (Photo by Rivista di studi geopolitici)

## REGIONAL POWER COMPETITION

- ◆ The Turkey—Qatar alliance seeks a **regionally hegemonic pan-Islamist project**. Relying on the transnational movement of the Muslim Brotherhood, (and other militant, non-state actors) the alliance has commissioned mercenary jihadists in Syria, Libya, the Horn of Africa and the Sahel region of West Africa to topple governments and replace them with Islamist supporters.
- ◆ The Arab Quartet was formed in 2017, as Egypt, the United Arab Emirates, Saudi Arabia, and Bahrain boycotted Qatar, accusing Doha of funding regional terrorism. At its core, the Arab Quartet is advancing a statist, militarized, secular, and defensive alternative to the expansionist, ideational projects emanating from both Turkey and Iran.
- ◆ Turkey's aggressive and reckless foreign policy is pushing a number of broader regional players toward closer cooperation. Today, **Egypt, UAE, Saudi Arabia, and Bahrain are increasingly converging on shared interests with Israel**, as well as other southern Mediterranean, southern European states such as **Greece, Cyprus, Italy, and France**.

**The COVID-19 pandemic has seen the most devastating effects in Iran, Turkey, and Qatar, where the highest levels of contagion are recorded.**

## SOURCES OF FUTURE DISRUPTION

A myriad of factors will define the future of geopolitical competition in a post-COVID-19 Middle East. As we examine today's emerging regional trends and weak signals, it is imperative to explore sources of potential disruption that may accelerate or decelerate situational dynamics; for example:

- ◆ What might the major shifts in oil markets do to alliances, dynamics, economic outlooks and competition?
- ◆ Is there a real danger that rival, ideational competition in the Middle East will intensify post-COVID?
- ◆ What is the future of the Iranian regime amid various scenarios of regional competition?
- ◆ What economic roles might Middle East militaries continue to play in one of the alternative scenarios?
- ◆ How does US/Chinese/Russian/EU engagement in the region contribute to regional competition?



## POTENTIAL FUTURE A.

### Continuation: Business as Usual

Continuity post-COVID-19 means that geopolitical fault lines look very similar to today. The Turkey-Qatar-Muslim Brotherhood alliance continues; Ankara and Doha continue to prop up Sunni, Islamist governments throughout the region. Iran continues its own violent exporting of the Shia Islamic Revolution, matching Turkey's, Pan-Islamic, Neo-Ottoman initiatives.

Turkey, however, sees an archenemy in Egypt's statist, militaristic, and secularizing trends. Qatar also continues its competition with the UAE. Proxy wars between Iran and Saudi Arabia plague the region with bloody, violent struggles. Egypt, the UAE, and Saudi Arabia, however, deepen their security arrangements with Israel. The reverberations of such alliances are felt throughout the region, particularly in Syria, Libya, Yemen, and North Africa. In Tunisia, for example, Ennahda Islamists remain active and in the Horn of Africa, especially Somalia, Al-Shabab militants receive support from Turkey. Israel and Egypt maintain their mutual understanding and avoid antagonizing each other.

Oil prices' nosedive is short-lived and does not cripple the Arab Quartet members. Saudi Arabia's \$320 billion sovereign wealth fund leverages quick trade wins in global markets hit by the pandemic. The Arab Gulf States' also rely on their \$2 trillion of combined sovereign wealth funds to keep their economies solvent. Additionally, Saudi Arabia doubles down on further social liberalization as it has ceased exporting its extremist, Wahhabi doctrines of earlier decades. States like Egypt and Israel—used to operating in “crisis mode” and adept in employing their militaries to augment logistics, distribution, and supply chains—are better positioned than other regional powers in dealing with COVID-19.

## POTENTIAL FUTURE B.

### Discipline: Order and Control

Expansionist schemes (primarily Turkish and Iranian) are considerably hindered and countries in the region retreat further into their own borders. Restrictions on immigration and travel are imposed, reflecting a stricter movement of people and goods within the region. Immediate effects are seen as Egyptian workers in the Gulf (a source of much foreign currency remittances) return home, presenting an economic challenge for Cairo. State-led economic interventions, however, with the goal of economic self-sufficiency, become exceedingly necessary. The resiliency of national centralized supply chains becomes favored over the efficiency of globalized ones.



**Figure 28** An Egyptian soldier stands guard near the Suez Canal. (Photo by Amr Nabil/AP)

Militaries that boast their own industry/business networks (such as those of Egypt) emerge as critical enablers, emphasizing their role in augmenting civilian supply chains. Thus, in the Middle East, a **military-dominated economic infrastructure** becomes necessary for societal survival during extended periods of economic self-isolation.

Iran finds itself far less capable of supporting its militant elements throughout the region, including Hezbollah in Lebanon, the Houthis in Yemen, or Shia militants in Iraq.

Across the region, states employ increasingly pervasive surveillance solutions, leveraging machine learning and AI applications to monitor their populations' health data. Here, Israel leverages controversial tech tools originally designed for tracking terror groups. Additionally, economic migrants attempting to cross the Mediterranean into Europe are considerably hindered. Tight border controls

and maritime cooperation between Egypt, France, Greece, and Italy stand in sharp contrast to Turkey's weaponization of Syrian refugees as a hybrid threat to the European Union.

## POTENTIAL FUTURE C.

### Collapse: Systemic Breakdown

Regimes in Turkey and Iran have run their course and collapse during a critical juncture around the 2023-2024 timeframe. (This year marks the 100<sup>th</sup> anniversary of the establishment of the Turkish Republic under secularist Mustafa Kemal Atatürk. It also signifies the end of the Ottoman Sultanate and Islamic Caliphate that had once ruled over the vast lands of the Middle East). Political Islamists are no longer perceived as the only “democratic representatives” of Muslim-majority polities. The distinction between *Muslims* (whether pious, religious or not) and *Islamists* (who have a hegemonic political project) is made less opaque within regional society. The Muslim Brotherhood is now in tatters—its militant surrogates in the region struggle to find adherents to an Islamist ideology that no longer offers a viable future. Libya is not Islamized under Turkey's wings.

Turkey and Iran make difficult transitions—in the case of Turkey, to a revived secular republic; in Iran, towards a new state seeking to re-connect with its historical, Persian roots. Both the new Turkey and new Iran establish closer ties with Egypt and converge on an ancient civilizational narrative that highlights renewed regional relationships.

Turkey and Iran also become much closer to Saudi Arabia, absent the previous competition over regional hegemony and the monopoly of Islamic religious authority. Hence, the collapse of pan-Islamist agendas leads to a breakdown of the old status quo. Qatar jumps ship from its previous alliance with Turkey—Doha now realizes it can no longer shoulder the immense financial burden and failure of the alliance project itself.



**Figure 29** Protestors at Iran's Azadi Tower. (Photo by Hamed Saber)

## POTENTIAL FUTURE D.

### Transformation: High Tech and/or High Spirit Solutions

The Middle East regional order begins to look like post-WWII Europe. Warring parties resolve long-standing conflicts and respect each other's borders. While economic integration and a shared currency eludes the region, the renouncement of expansionism brings a greater focus on domestic issues. Transcending previous ideological impasses allows for greater investment in education and healthcare. Middle Eastern countries see a resurgence in national entrepreneurship, technological innovations, and scientific discoveries.

Tunisia becomes ideologically decoupled from Qatar and Turkey, in their support for Ennahda Islamists. Gaza becomes the basis for a new, Palestinian State. Its cultural identity stems from being a coastal Mediterranean city (channeling the ancient Philistines as a people of the sea) instead of an Islamist identity. . A post-Hamas Gaza is modeled after Singapore, whereas Arab populations in the West Bank either become citizens of the new Palestinian State (in Gaza) and/or remain in their towns as permanent residents, but not citizens, of Israel's increasingly annexed regions, based on Jewish religious rationale. Turkey returns to a secular republic that looks to the West and eschews antagonizing its regional neighbors. Ankara renews security cooperation with Israel and resumes positive relations with Egypt.



## KEY INSIGHTS/SUMMARY

A new U.S. focus on great power competition identifies China and Russia as the primary threats to U.S. security. As such, the Middle East region has been essentially relegated to the geopolitical sidelines. The problem with such a vision, however, is that China and Russia are increasing their own presence in the MENA region—and are there for the long haul.

Indeed, China and Russia are fueling this competition with Western powers in the Middle East, even going so far as to establish new ties with traditional western allies to facilitate their presence. The emerging trends identified in this analysis shed light on alternative scenarios for a post-COVID-19 regional competition.

Given the U.S.'s troubled track record in the region—it is imperative for Washington to recognize the new fault lines of competition—and their subsequent implications for US interests—in the Middle East and North Africa.



# THE FUTURE OF THE EUROPEAN UNION AND IMPLICATIONS FOR TRANSATLANTIC RELATIONS

Lt Col Jake Sotiriadis, USAF, Ph.D., Chief Strategic Foresight and Futures Branch

## OVERVIEW

COVID-19 is exacerbating pre-existing fissures in both European solidarity and transatlantic relations. The well-publicized struggles within the European Union over economic, security, and migration policy highlight the limitations of supranational organizations in the 21<sup>st</sup> century.

At the same time, Washington's adoption of an "America First" foreign policy has led many on both sides of the Atlantic to question the long-standing paradigm of transatlantic relations.



**Figure 30** European Union Flag with protective mask. (Photo by [Institute for New Economic Thinking](#))

- ◆ Looking past the pandemic, which emerging trends today lend insights into potential futures for the European Union and transatlantic relations?
- ◆ Does a post-pandemic order look much like the current status quo, or do shifting power dynamics portend a systemic transformation?
- ◆ Which "pressure points" on the transatlantic alliance are being intensified by COVID-19? How are malign actors—namely Russia and China—leveraging today's transatlantic discord to serve their own geopolitical interests?

Emerging from a turbulent decade, the European Union has weathered the Eurozone debt crisis, the United Kingdom's BREXIT "divorce" from Brussels, Russia's invasion of eastern Ukraine and annexation of Crimea, a resurgence of populism, and the continent's worst migration crisis since World War II.

COVID-19 has hit Europe hard, particularly Italy, Spain, the UK, and Belgium. Since the outbreak, European Commission President Ursula von der Leyen announced a €750 billion (\$825 billion) "recovery fund" aimed at injecting a much-needed economic stimulus into troubled Eurozone economies. While this represents an important step in the bloc's pandemic recovery, several member states (Austria, Denmark, the Netherlands, and Sweden) do not support disbursing direct grants and loans to poorer EU members.

## SOURCES OF DISRUPTION

Against the backdrop of this inflection point, let us consider the following sources of geopolitical disruption to both the European Union (and by extension) to transatlantic relations:

**Economic solidarity** – The extent to which EU Commission President von der Leyen's recovery package is realized will set the tone for further economic integration as well as for political solidarity within the Eurozone. Absent the implementation of a comprehensive economic stimulus, Brussels risks repeating the mistakes of the past and leaving the door open to Eurosceptic populists. To be sure, China also seeks to exploit internal disagreements and sign more European nations onto its signature "Belt and Road Initiative."

**Migration Policy** – The EU's failure to manage its refugee crisis results in uneven burden sharing across the bloc—countries on the EU periphery (e.g. Greece, Italy, and Spain) bear the brunt of refugee incursions. Populists leverage this issue to sow discord and create friction within societies, intensifying tensions between member states and the European Union bureaucracy.



**Figure 31** Refugees crossing the Aegean. (Photo by Antonio Masiello)

**5G Network Infrastructure** – The EU will allow members to decide the extent to which Chinese firm Huawei can play a role in their 5G telecom networks.

This decision creates tensions with Washington, which seeks to prevent China from gaining a foothold in Western telecommunication networks. Additionally, the presence of Huawei in European telecom networks places Europe at risk of exploitation and espionage by Chinese actors.

**Libya conflict** – Russia and Turkey are now waging a proxy war in Libya; Turkey is supporting the Islamist Government of National Accord (GNA) in Tripoli, while Russia supports Field Marshal Khalifa Haftar, a secularist. Individual EU member states are also supporting different sides in the conflict (e.g. Greece and France are backing Haftar). As the conflict intensifies, the continued involvement of external powers and conflicting policies among EU members challenges the EU's (and NATO's) ability to manage the conflict and its potentially de-stabilizing repercussions.

**EU/Turkey Relations** – Turkey's aggressive foreign policy eludes a common EU response; earlier this year, waves of refugees poured into EU member Greece, encouraged and weaponized by the Turkish government. Turkish claims of energy rights in the Eastern Mediterranean place Ankara in direct conflict with EU members Cyprus and Greece as well as many Western energy companies that seek to do business in the region. Turkey's purchase of Russian S-400 air defense systems resulted in its expulsion from the F-35 program, exacerbating tensions between Washington, Ankara, and within NATO itself (of which Turkey is also a member).



**Figure 32** Turkish energy exploration in the Eastern Mediterranean. (Photo by Turkish Policy Quarterly)

**Democratic backsliding?** The governments of Hungary and Poland have enacted nationalistic policies that run counter to EU norms of the rule of law. In Hungary, President Viktor Orban took advantage of the COVID-19 pandemic to enact legislation that suspends elections and allows him to remain in power indefinitely. Russian malign influence via social media and disinformation campaigns intensify populist movements and hinder efforts for further integration of the Western Balkans.

**Change/Continuity in US administration?** Many of the established norms in the transatlantic relationship have undergone significant upheaval during the past several years. While US military spending in Europe has actually increased since 2017, many European political leaders view the current administration as an impediment to transatlantic relations. This is due to US criticism of NATO members' financial commitments, US tariffs against European steel and aluminum producers, and the characterization of the EU as a "foe." Thus, the results of the upcoming US presidential election will cast a wide shadow over the future of transatlantic relations.

## POTENTIAL FUTURE A.

### Continuation: European Disunion 2.0?

Partial re-openings to accommodate the summer tourist season lead to a resurgence of COVID-19 across the continent. The virus continues to return seasonally and extended social distancing

contributes to a significant economic downturn for EU member states. In particular, southern European countries face massive unemployment. Brussels does push through an economic stimulus, but much smaller in scale than originally announced. Spain and Portugal sign on as members of the Belt and Road Initiative, while Huawei makes inroads in several major European telecom networks. In general, European governments make uncoordinated decisions on defense spending, retreating to national-level, versus European-scale mechanisms. Russian malign influence in the Balkans intensifies, complicating further regional integration efforts. New waves of refugees from North Africa (primarily Libya) exacerbate the EU's fragile migration efforts.

## **POTENTIAL FUTURE B.**

### **Discipline: Austerity Redux and Supranational Medicine**

The 2020s usher in a massive spike in unemployment across the continent; a failure to adopt best practices to combat COVID-19 means uneven levels of contagion throughout EU member states. Calls for a more federalized union gain traction and EU member states cede considerable authority to Brussels after the signing of the 2028 Berlin protocol. The EU Commission, encouraged by Germany, Austria, the Netherlands, and Denmark, enacts severe austerity measures aimed at reducing ballooning budget deficits. The Commission also implements a freeze on the free movement of peoples, with border controls between all EU states now the new norm. These are enforced by the new European Border Security Force, which now manages migration and border security efforts. EU member states must follow strict medical guidelines prescribed by the Commission or risk being cut off from the now critical EU bio-data network.

## **POTENTIAL FUTURE C.**

### **Collapse: Revenge of the Nation-State**

Recurring waves of COVID-19 coupled with a global depression have crippled the EU's ability to manage multiple crises. During the Trump administration's second term, Washington exits the NATO alliance, citing a "lack of return on investment" to American taxpayers. Absent a US military presence in Europe, NATO ceases to exist outside of several office buildings in Belgium. Thousands of Russian speaking "ex-patriates" begin arriving in Latvia, Lithuania, and Estonia, which serve as a pre-cursor for eventual Russian military incursions to protect "Russian ethnic minorities." Turkish military incursions into the Aegean and Eastern Mediterranean, coupled with increased Jihadist attacks in Spain from North Africa-based terror groups, are the catalyst for systemic collapse. A lack of coordinated responses to the crisis by France and Germany fuels a crisis of legitimacy in the European Union structure itself. Several member states, engulfed in nationalistic fervor and facing mass civil unrest, withdraw from the European Union. What remains of the Union is a hollow shell of small, northern European countries unable to exercise control or influence on the international stage.

## **POTENTIAL FUTURE D.**

### **Transformation: Washington-Berlin-Ankara?**

The third wave of COVID-19 in 2029 creates an opportunity for unprecedented transatlantic cooperation. The new American administration embarks on a major effort to rebuild US-European relations. The discovery of Chinese spyware and surveillance schemes in several 5G telecom networks crushes any remaining trust European actors have in cooperation with China. Leveraging this opportunity, the US establishes a bio-data sharing protocol with the EU, leading to a joint, US-EU health office that manages and updates populations' bio-data stockpiles. A hard BREXIT in the early 2020s severely diminishes London's role as an international power broker. Adjusting to new realities, Washington builds upon Germany's leadership role in the EU and creates a new "special relationship," in which Germany becomes America's most significant political, economic, and security partner in Europe. Additionally, the defeat of Turkish President Erdogan's AKP party in the early 2020s accompanies a "secular renewal" in Turkey that sees successive, Western-oriented governments come to power. The successful resolution of long-standing disputes in the Aegean and



Eastern Mediterranean, combined with massive Western investments in the Turkish economy, lead to Turkey's accession as an EU member in the early 2030s.

### KEY INSIGHTS/SUMMARY

Maintaining relationships with critical allies and partners is a linchpin to the United States' national security strategy. In particular, the transatlantic alliance is vital to the maintenance of the liberal, international order. Expanding US economic and security relationships with the EU and NATO is key to ensuring global security.

Russia and China are keenly aware of these realities and seek to drive wedges between the Western allies. The "pressure points" of populist movements (encouraged by Russian malign influence campaigns) and financial/tech investments from China (including the Belt and Road Initiative) challenge the current status quo.

Additionally, disruptive conflicts on Europe's periphery, (e.g. Libya, the Eastern Mediterranean, Ukraine) which are now overshadowed by COVID-19, may morph into expanded geopolitical crises for the EU (and US) if left unchecked.

# CONCLUSION

## WEAK SIGNALS, EMERGING TRENDS, AND POST-COVID-19 COMPETITION

As tragic as COVID-19 is for our society—in particular the terrible loss of innocent life—the **pandemic forces us to consider alternative futures in a more comprehensive and methodical way.** Many of the baseline assumptions that underpin our national security strategy and service-level warfighting concepts are affected—in some manner—by the new strategic environment. The security landscape of a post-COVID-19 world contains both challenges and opportunities that defy accepted probabilities for the Department of Defense and the Department of the Air Force.

We have examined, through environmental scanning, weak signals and emerging trends that lend insights into future sources of disruption. Our report highlights several key interest areas for the Department of Defense and the Department of the Air Force—future competition in space, autonomous systems, national security supply chains, malign influence/disinformation campaigns, China's Belt and Road Initiative, and shifting geopolitical dynamics in the Middle East and in transatlantic relations.

Geopolitical competition and disinformation are no longer limited exclusively to Russia, China, Iran, or violent extremist organizations. Rather, we are likely to see a congruence of these actors either jointly or independently waging simultaneous, multi-faceted influence campaigns on targeted populations at a global scale. These campaigns will continue to target all facets of our society. As we continue to focus on great power competition—with China and Russia as the primary threats to U.S. security—we cannot lose sight of the new, emerging fault lines in the Middle East or complex crises on Europe's periphery. The global pandemic has also accelerated the export of China's worst characteristics, while prompting delays and disruptions to its Belt and Road Initiative.

In the US homeland, overly thin levels of inventory as well as long supply chains present risks to our national security. To be sure, the effects of COVID-19 also present an opportunity for a shift in accepting more surveillance and automation in the name of public health, much like the terrorist attacks on September 11, 2001, did for airport security procedures.

Ultimately, this report endeavors to enrich, enhance, and encourage ongoing efforts that elevate our current strategy, conceptualize breakthrough innovations, and drive meaningful change throughout the department(s). Strategic foresight and futures studies can help us develop the capacity to take the cognitive high ground when our security environment is turned upside down.



## ABOUT THE AUTHORS

**Lt Col Jake Sotiriadis** is an intelligence officer with broad experience in defense, intelligence, and diplomatic policy portfolios. As the Air Force's senior futurist, his work spans the nexus of disruptive technology, geopolitical risk analysis, and strategic foresight analytics. He has served as advisor to the U.S. Ambassador to Germany, intelligence briefer to the Secretary and Chief of Staff of the Air Force, and Deputy Chief of the Weapons and Space Division at the National Security Agency. His work as a thought leader has been featured internationally in: *The Diplomat*, *Defense News*, *C4ISR Journal*, *China-US Focus*, *The Daily (Kathimerini)*, and *the Middle East Institute*. He holds a Ph.D. in political science from the University of Hawaii at Manoa and master's degrees from the Fletcher School of Law and Diplomacy at Tufts University, the School of Advanced Air and Space Studies, and the Air Command and Staff College. He speaks German, Greek, and Spanish.

**Dr. Jairus Grove** is Associate Professor of Political Science and Director of the Hawai'i Research Center for Future Studies at the University of Hawai'i at Manoa. He holds a Ph.D. in international relations and political theory from Johns Hopkins University. He is the author of *Savage Ecology: War and Geopolitics at the End of the World* (Duke University Press, 2019).

**Kara Cunzeman** is a policy analyst and lead for strategic foresight for the Center for Space Policy and Strategy at The Aerospace Corporation. In her role, Cunzeman is focused on cultivating a formalized approach to futures thinking at Aerospace through the strategic foresight Corporate Strategic Initiative (CSI). Cunzeman received her bachelor's degree in multidisciplinary engineering and a master's degree in aeronautics and astronautics engineering from Purdue University.

**Major Laura Hunstock** is a Senior Combat Systems Officer (CSO) with over 1900 flight hours in the RQ-170 and B-1B. Major Hunstock has served both as an Instructor CSO in the RQ-170 and as an Instructor/Evaluator Weapons Systems Officer (WSO) in the B-1B. Her combat experience includes 85 sorties in support of Operation Enduring Freedom. Major Hunstock has served as the Wing Executive Officer at Creech AFB, Chief of Stan/Eval, and B-1B Flight Commander. She is an Air University Blue Horizons graduate with a Masters in Airpower Strategy and Technology Integration. Prior to Blue Horizons she was an Air University Fellow and instructor at the Squadron Officer School. Major Hunstock graduated from Baylor University with a BA in Political Science.

**Jason Schenker** is Chairman of The Futurist Institute and the President of Prestige Economics. He is one of the world's leading futurists and financial market forecasters. Mr. Schenker has been ranked one of the most accurate financial forecasters and futurists in the world. Bloomberg News has ranked Mr. Schenker a top forecaster in 43 categories, including #1 in the world for his forecast accuracy in 25 categories, including for his forecasts of the Euro, the British Pound, the Swiss Franc, the Russian Ruble, the Chinese RMB, crude oil prices, natural gas prices, gold prices, industrial metals prices, agricultural commodity prices, and U.S. jobs. Mr. Schenker was ranked one of the top 100 most influential financial advisors in the world by Investopedia in 2018.

**Vera Zakem** is a Senior Technology and Policy Advisor with Technology for Global Security. She is a recognized leader, driving strategy at the intersection of global threats, policy, emerging technologies and innovation, and organizational strategy and operations. Vera is a recognized expert on Russian influence and disinformation, the impact that technology plays in society and democracy, terrorism, and human security and stability. Prior to joining as Tech4GS as a Senior Advisor, Vera led strategy and research at Twitter's operations, leading initiatives to continuously serve Twitter's customers globally. Prior, she served as a leader in strategy, partnerships, research, and policy engagement at various think tanks and industry organizations in Washington, DC, including the CNA



Corporation, where she spearheaded initiatives on global influence and Russia's indirect approaches. Vera is a Term Member at the Council on Foreign Relations, was selected as a Young Leader (Class of 1999) as part of Swiss-American Foundation, and has been recognized by Working Mother Magazine. She received her M.A. from the Johns Hopkins University, and is fluent in Russian and Spanish.

**Shannon McGurk** is a retired Army Ground Cavalry China Foreign Area Officer. While on active duty, he commanded at the Troop level and served as an Executive Officer at the Squadron level. He served on the Joint Staff, Army Staff, as the Defense Intelligence Agency China Desk Officer, and as an Assistant Army Attaché at the U.S. Embassy, Beijing. Upon retirement from the U.S. Army, he worked throughout the Intelligence and Operations communities for Northrop Grumman, TASC, ManTech and General Dynamics and throughout the inter-agency community on the Air Staff as an Air Force civilian. Mr. McGurk recently returned from Afghanistan and is currently working as a Long Term Analyst and Futurist consultant for the Air Force Warfighting Integration Capability, Strategic Foresight and Futures Branch. He lives with his wife and children in Virginia.

**Dr. Marwa Maziad** is Visiting Scholar at the University of Washington's Jackson School of International Studies and former Visiting Assistant Professor at Seattle University. She is a regular Political Commentator on BBC News. Her academic publications focus on US foreign and defense policies, as well as comparative civil-military relations in the Middle East cases of Turkey, Egypt, and Israel. Dr. Maziad is also the co-editor of *The Arab Gulf States and the West: Perceptions and Realities—Opportunities and Perils* and the author of one of its book chapters "The Turkish Burden: The cost of the Turkey-Qatar alliance and hard power projection into Qatar's foreign policy" (UCLA Center for Middle East Development, Routledge 2019). She received her MA and PhD from the University of Washington and is fluent in Arabic, French, Turkish, and Hebrew.





# APPENDIX A: ACRONYM LIST

<b>COVID-19</b>	Coronavirus disease
<b>CRISPR</b>	Clustered regularly interspaced short palindromic repeats
<b>DOD</b>	Department of Defense
<b>FAA</b>	Federal Aviation Administration
<b>HVI</b>	high value individual
<b>IED</b>	Improvised explosive device
<b>ISIS</b>	Islamic State of Iraq and Syria
<b>LEO</b>	low earth orbit
<b>NASA</b>	National Aeronautics and Space Administration
<b>NOISE</b>	necessities, occupations, information, systems, external
<b>PPE</b>	personal protective equipment
<b>RPA</b>	remotely piloted aircraft
<b>SUAS</b>	special use airspace
<b>UAV</b>	unmanned aerial vehicle
<b>USAF</b>	U.S. Air Force
<b>USG</b>	United States Government
<b>VEO</b>	violent extremist organizations





# AIR FORCE WARFIGHTING INTEGRATION CAPABILITY

DESIGN | INTEGRATE | DEVELOP | IMPACT