2023 Minerva Topics of Interest

Below represents the Minerva Research Initiative topics of interest for the 2023 funding competition. In framing any Minerva proposal, it is important to articulate the basic science contribution of the research proposed. It is expected that all proposals will have sufficient area and subject-matter experience to appreciate the nuances of diverse local contexts—including the (ethical) challenges posed by different value systems—and proposers are strongly encouraged to review the 2019 Future Directions in Social Science report on the Emergence of Problem-based Interdisciplinarity as a reference for the program's strong interest in supporting projects that are disciplinarily diverse and committed to addressing problems in innovative ways. It is also expected that proposals utilize both qualitative and quantitative approaches and include validation strategies of the research findings and potential impacts. Further, the program is interested in how the theoretical and methodical approach of the proposed research is generalizable such that it could influence how similar problem sets are approached.

Successful proposals will in some clear way align with the most recent National Defense Strategy. In addition, there is strong interest in research proposals partnered with Historically Black Colleges and Universities, Minority Serving Intuitions, Tribal Colleges and Universities, and other appropriately diverse teams, such as Professional Military Education Institutions, especially as they contribute different perspectives on the social dynamics of the challenges posed below.

See the complete NFO on grants.gov for submission instructions.

> Topic 1: Societal Cohesion in Crisis
> Topic 2: Considering Societal Resilience at Multiple Scales
> Topic 3: Sociotechnical Adaptation to Climate, Food, and Water Stress
> Topic 4: Social Impact of Technological Change
> Topic 5: Parasocial Relationships, Social Media, and Radicalization
> Topic 6: Temporal Orientation and Strategic Considerations
> Topic 7: Evolving Contexts of Deterrence
> Topic 8: War Termination Processes and Prospects

NB: Each proposal should be submitted to only one topic area, even if there is overlap with another topic area.

White Papers due: January 15, 2024 | Full Proposals due: April 2, 2024

Topic 1: Societal Cohesion in Crisis
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The ability of a group, or society more broadly, to hold together is central to social life. As the nature of the social unit varies cross-culturally and across political systems, this topic seeks to understand the nuances of shifting social and political cohesion in the face of diverse and evolving crisis situations. While part of the concern is a question of societal resilience (the focus of Topic 2), a related fundamental interest is in the endogenous and exogenous factors that bring groups together/apart, the temporal and situational nature of group solidarity, collective memory, and the relationship between cohesion and motivation toward a stated end. A comparative focus should be given to individual and group behavior within individualist and collectivist societies and how the scale of cohesion—micro-, meso-, macro-scales—influences the response and its sustainment in face of adverse conditions. New approaches to measure social, cultural, religious, political, and economic cohesion—as well as key intermediary variables, including expectations of (self-) performance, perception of status, trust, and morale—that can utilize existing data streams or for which data can be collected quickly and remotely with qualitative fidelity, are encouraged.

This topic seeks to develop or elaborate upon descriptive models that can be used to assess or predict societal cohesion, as well as analytical models that offer new insights into individual and group formation, particularly in response to crises. Approaches should employ empirical testing and explicitly consider the generalizability of findings across contexts. Particular value will be placed on approaches that can mediate between assessing individual commitment to anticipate the behavior of groups and organizations. This includes not only the resolve of national political leadership, but also those segments of the population who would engage in popular resistance—including armed combatants at different levels of organization and the interactions between these actors—and a group's willingness to take actions, including deterring or preparing for conflict.

Specific foci may include, but are not limited to:

Will-to-resist
- Generate frameworks and models of will-to-resist—both passive and active forms of resistance, including those leading to violence—that identify pathways of internal and external influence that may impact national political leadership, key populations sectors, and/or organizations of armed combatants.
- Consider how models of will-to-resist apply in cases of proxy or regional conflict. How does external support influence commitment to a cause of resistance and what types of factors shape the evolution of resolve?
- How do potential third-party entrants (allies and partners) into conflicts influence will-to-resist of the varied parties involved? To what degree are political, economic, and military elites influenced versus general populations?
- In what ways do pre-conflict, early conflict, and protracted conflict influence will-to-resist dynamics?

Trusted relationships

- What is the role of leadership and morale in sustaining cohesion and how does this vary by role? Does the role change based on social, cultural, religious, or political leadership?
- How do factors like well-being, inequality, status, and social division impact sociological distinctions between trust and confidence in relation to social and political cohesion? To what extent do these factors have different impacts on various types of crises?
- To what extent are relationships of cohesion within individual and group control, and what leads to breaking down or building up commitments to a particular cause?
- How does collective memory impact social cohesion and relationships in light of contemporary crises?
- What is the relationship between social identity and societal cohesion, and how does diversity of identities across different levels impact cohesion development and sustainment?
- How is cohesion repaired or reformed at the micro-, meso-, and macro-levels in face of and following a crisis, particularly one of adverse outcomes?

Technological impact
- How does technology and evolving relationships with it (the focus of Topic 4) impact cohesion? Does it do so differently in different quotidian and crisis contexts?
- In what ways do time and scale influence the extent to which technology influences will-to-resist and/or trusted relationships within/between/among coordinating groups?

Topic 2: Considering Societal Resilience at Multiple Scales
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Co-POC: Gregory Ruark, DEVCOM ARL, Army Research Office, gregory.a.ruark.civ@army.mil

Resilience as a concept has existed for centuries. It has received increasing attention during the world's COVID pandemic experience, as societies had to adjust not only to a life-threatening disease, but also the effects that it imposed that had social, cultural, economic, and political consequences with unequal impact, an impact of increasing complexity when considered in conjunction with the opportunities and challenges of globalized societies, such as fragile global supply chains. Resilience today has multiple definitions, many of which are discipline-, location-, and/or context-specific. There are models that consider resilience in terms of socio-ecological systems, socio-technical networks, and complex adaptive systems. While these approaches, considerations, and models continue to advance resilience research, there are some gaps in understanding how different societies of the world respond and recover from systemic shocks.

Social science has seen a steady growth on resilience research. Current literature tends to follow two primary tracts: conservative resilience, which is akin to achieving stability after disruption and persist in its current state, and transformative resilience, which considers systemic renewal or adaptation after experiencing shock(s) resulting in a change. Many studies concentrate on specific shocks, such as disaster response, climate change, or specific traumas. The most recent theoretical addition is equitable resilience, which considers social vulnerabilities and [un]equal access to power and resources (Matin, Forrester, & Ensor, 2018). Within this literature, a small subset uses the term "social resilience," which generally combines the two tracts mentioned above, focuses on a specific shock, and examines one or more social effects on the group level. Most recently, in

response to the recent pandemic, societal resilience research has begun to expand. This growth is important because a large percentage of existing resilience research focuses on the individual level, which while important, does not usually consider different societal structures, social networks, and models that may espouse differing preferences for collectivism, family, generation, culture, language, gender, relationship to nature, lifestyle, communication, technology, health, societal norms, and worldview, among other potential variables and values. Understanding these variables in the context of absorbing and recovering from multiple systemic shocks and in co-occurrence with other systems at different timescales underscores the need for more research on societal resilience globally, which may require interconnected but distinct conceptualizations at various levels/scales. This topic calls for development of the science of societal resilience with consideration for societal variations and values.

For purposes of this topic, societal resilience is meant broadly as a society's ability to absorb, and when necessary, adapt to and/or bounce back from multiple disruptive external and/or internal shocks experienced at the same time, in close proximity, or as consequences to previous shock(s), with consideration for that society's organization, culture, and values. Because this preliminary definition is meant as a starting point and does not distinguish between conservative and transformative resilience or consider specific variables or regions, proposers should refine as needed to support the proposed research. Differences that may occur societally across the world are critical aspects of this topic, particularly as these societies experience complex, systemic, shocks or disruptions that may include sociotechnical components and affect people globally, albeit unevenly.

The topic does not prescribe any particular use case(s) but does anticipate that focusing solely on one type of shock or societal sector will be insufficient to meet the topic's intent. Experimental approaches are encouraged.

Key areas of interest include, but are not limited to:
- Develop theory/ies and refined definition(s) that consider societal resilience with co-occurring systems across the globe at multiple levels/scales
- Conduct cross-cultural comparative studies on societal resilience in various regions or contexts and explore the techniques used in different societies to absorb and recover from systemic shocks
- Discover how societal resilience as a concept should be constructed from non-Western perspectives and explore whether new methods are required to understand and assess such resilience
- Assess and test whether the concept of equitable societal resilience can be developed and measured
- Explore how to integrate local, indigenous knowledge systematically best and appropriately into societal resilience and determine how this knowledge revises the construct, if it does, and if so, how it affects different levels and scales
- Measure societal resilience worldwide at national and, if possible, sub-national or other levels/scales, with consideration for local assessment of societal resilience, and determine how best to normalize these measures, if appropriate

- Identify key variables that influence type of and effectiveness of co-occurring societal resilience responses and outcomes (conservative, transformational) and how that differs based on shock characteristics (intensity, duration, timescale, etc.)
- How does co-occurring societal resilience look under different types of stress, atypical compared to systemic, and when types differ between systems (e.g., societal resiliency in response to a prolonged, low intensity systemic shock and economic resiliency in response to an acute, momentary shock), and how does this look at different levels
- Develop methods and/or models to understand when societal resilience(s) will yield a conversative compared to a transformational outcome, to incorporate any new resilience methods/models resulting from data analysis

Bibliography:
Matin, Nilufar, John Forrester, and Jonathan Ensor. 2018. What is Equitable Resilience? *World Development* 109: 197-205.

Topic 3: Sociotechnical Adaptation to Climate, Food, and Water Stress

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Climate and environmental change are increasingly accepted as a major issue facing societies, and a defining global challenge with significant potential to reshape future security and stability. As outlined in the DoD Climate Risk Analysis Report (2021) the associated risks include mass migration, altered patterns of infectious disease, water and food insecurity, degraded livelihood systems, political instability, supply chain disruptions, global conflict, and social fracturing, as well as adverse effects on an array of key economic sectors. The pace at which developed and emerging economies and nations can formulate a response to mitigate the complex social impact of climate change, including stress put on food, water, and shelter, is certain to be uneven and likely to require scientific, political, and ultimately pragmatic solutions that differ by location. This topic thus focuses on the development of approaches to describe and assess efficacy of climate change adaptation strategies, explores the relationship between social and technical "solutions," and the opportunities and challenges associated with implementation and adoption. These approaches may be applied to characterize pertinent systems, component subsystems, and their interactions to determine whether we can gain sufficient insight to understand how systems adapt and which strategies may generalize. Areas of work within this topic may focus on a specific place or a particular adaptation strategy; comparison, when possible, is encouraged.

Food and food production systems, for example, are deeply embedded in social, material, economic, and cultural systems. Climate change is among the factors that shape ongoing stresses to such systems, including weather-related stresses on production and distribution systems, geopolitical dynamics affecting trade and conflict, demographic trends including population growth and urbanization within the context of disruptive technologies such as AI, automation, supply chain, and cyber-risk. As we consider the future of food system stability and sufficiency—or water, shelter, and corollary human needs—what social and technical challenges need to be met to facilitate stable and thriving communities?

While models increasingly offer more detailed projections of how populations might be impacted by climate change (although with assumptions that may not hold), this topic focuses on the social and sociotechnical challenges and opportunities of response. While societal cohesion (Topic 1), resilience (Topic 2), and responses to technological change (Topic 4) are all relevant, the focus here is on adaptation which is likely to be culturally, socially, politically, and economically varied. There is particular interest in developing new ways of thinking and responding that appreciate innovations in depicting these systems and their dynamics, efficacy of different approaches to govern vital human systems such as food and clean water for collective benefit, delimiting types of responses to social and material change, interconnections between physical, biological, and social dimensions of adaptation to historical extremes, the importance of social needs such as the human need to belong, and the challenges and potential opportunities of centralized and/or distributed adaptation across different environments, communities, and scales.

Specific foci may include, but are not limited to:
- How do we describe and measure the efficacy of climate change adaptation strategies and outcomes in human dimensions? Do reflections of social, economic, and other manifestations of equity track qualitative and quantitative differences in impacts of climate change adaptation? Are there robust, practical methods to assess the value of ecosystem services, and their changes through time with sufficient granularity to understand inter-group dynamics across different levels of society? How will impacts of climate adaptation affect different aspects of national security?
- New understandings and approaches to governance managing the relevant Commons for desired collective outcomes in contexts of evolving needs, moral/ethical/societal norms, and population shifts
- What are the relationships between climate change, food and water access, shelter, and the performance of financial, political, religious, or other institutions, economic sectors, and national security? What methods can be applied to determine whether and how different types of social systems are affected by the social, economic, and political responses to environmental change?
- What are the implications in human dimensions of intentional and/or uncontrolled changes to meet and manage environmental constrains and resource availability?
- How does the nature of economic interdependence (or isolation) affect the management of environmental challenges across various geographic and political-economic scales?
- How might the advent of more distributed provisioning systems that use technological advancements to reshape the production of food, energy (heating, cooking) and/or building materials away from long, highly specialized supply chains dependent on annual production cycles affect livelihoods and labor, risk of food insecurity, economics and adaptation of economies, politics, ideologies, and geopolitics, and of formal and informal social structures within and between communities? If there are multiple ways such systems could facilitate food sovereignty, are there mechanisms by which to predict which way will be most successful in a given context(s)?
- How can emerging technologies help to mitigate the adverse impacts, threats, and risks due to climate change, creating unexpected benefits (e.g. technological breakthroughs in distributed production, increased social coherence through better risk governance, etc.),

and what social challenges and opportunities do those technologies present? How does this vary across different societies or societal segments? How do risks in adopting unfamiliar technologies influence the provision of these technologies?

- How can traditional and indigenous approaches to climate variability, food, water, and shelter augment local adaptations of sociotechnical approaches to changing stresses on one's lived environment?

Topic 4: Social Impact of Technological Change
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Throughout history, technology had been influential in driving societal change. Most recently, this has included an evolving relationship with information, characterized by innovations that have transformed how information is transmitted, stored, and ultimately used. Advances in high-performance computing, optic networks, near-limitless digital storage, (semi-)autonomous machines, transportation of goods and ideas, artificial intelligence, etc., have (and are) impacting sociocultural, economic, political, and even the psychological understandings of social relations. The nature of society across local- to global-scales has been impacted by new networks, interdependencies, and imagined futures that both enhance and threaten social orders.

This topic seeks to explore the impact(s) of emerging technologies on social structures and concomitant relationships. Particularly, it is comparatively concerned with how the impact of technological change varies across different societies and across micro-, meso-, and macro-scales. It is assumed that proposals will similarly seek to understand how/if different emerging technologies lead to different categories of social impact(s) and how varied international approaches to emerging technological change may present new opportunities and risks to local-, regional-, and global-orders. Furthermore, proposals should include an appreciation of the moral and ethical implications technological change may present to different societies.

Specific areas of interest include, but are not limited to:
- The impact of changing relationships to knowledge and skill development, and the supplanting of expertise, particularly in relation to information that is heavily processed with minimal input by humans, such as artificial intelligence processing information and turning it into "knowledge" and in some contexts, decisions.
- How will institutions traditionally charged to facilitate learning evolve in societies where the construction of knowledge is no longer solely, if at all, undertaken by the human? How would institutions differ across societies?
- The impact of emerging technology on the nature and characterization of work such as organizational structure, division of labor, and what it means to be a professional.
- How has emergent technology impacted society's relationship with it, what are new risks for individuals and groups, and what are societal impacts when competing interests arise among allies, partners, and competitors.
- How do differences in technology penetration, such as speed and intensity, effect adoption of or resistance to technology? What is the societal impact of uneven adoption rates across different scales and how does this influence perceptions of well-being.

- The impact of increased incorporation of virtual-based and fully-integrated platforms into everyday life.
- How do different approaches to Future Generation Wireless Technology and connectivity, be it centralized or decentralized, restricted or more open and collaborative, impact social relations, perceptions of security, and application/usage.
- How will technology proliferation impact know resource costs, and what are the effects on society and concomitant relationships? Likewise, how can unknown resource costs, along with societal implications, be identified?

Topic 5: Parasocial Relationships, Social Media, and Radicalization
POC: Rebecca Goolsby, Office of Naval Research, rebecca.goolsby@navy.mil

Social media engagement has been shown to be a significant pathway to violence, terrorism, fanaticism and recruitment into cultish social formations (Montell 2021), defined as tight, insular groups that bear a resemblance to cults. Montell (2021) and Danesi (2023) have explained how language and social psychology play important roles in the development of a radical mind-set; others (Haidt 2013, Morozov 2011) have considered related, critical dimensions of the formation of authoritarian perspectives and the use of media to develop "followerships" with the potential for promoting radicalization, violence, and societal disruption. A social media cottage industry developed and incentivized through social media monetization schemes has played a significant role in the promotion of malign content and extending the reach of influencer celebrities who often participate in the creation of malign content either as a primary or secondary income, seeding social media platforms with malign content that is a critical factor in the creation of cultish social formations. This is an international phenomenon, prevalent in many countries outside of the United States, and a significant concern in Europe, South America, and Asia (Morozov 2011).

The term "para-social interactions" was coined by Donald Horton and R. Richard Wohl in 1956. Their research centered around the rise of mass communication, particularly television, which enabled new kinds of psychological attachment. In para-social relationships, viewers develop one-sided relationships with a media figure, and experience a sense of intimacy or connection, even though the media figure is usually not aware of their existence. Even before the identification of this phenomenon, early indications of the emergence of such relationships were evident in the rise of "fan" culture with regard to radio. Today, social media has provided the affordances for relationships and communities that exist primarily in the imaginary world of cyberspace, where "cultish social formations" often flourish.

Cultish social formation in online communities has recently been a focus of research, primarily in the United States. As noted above, a cultish social formation is a tight-knit, insular group that bears a resemblance to cults (Montell 2021) which can lead people to not engage with the broader society or even to actively attempt to undermine it. These "cultish" social formations often have a key, charismatic leader who claims to have access to exclusive truths or solutions and their own lexicon or specialized vocabulary to separate in-group members from out-group members. These groups often demand purity or strict adherence to the group's beliefs, fostering an environment where questioning or dissent is met with disapproval or even ostracism. Social media topic communities have been shown to be an important conduit into fanaticism; cultish social formations like QAnon and other anti-social cultish formations that promote extremism have become a

conduit to terrorism and radical extremism. These formations often have additional influencer accounts that serve particular sub-audiences of the larger formation. These accounts may in turn serve the needs and interests of an influencer or media celebrity "up the chain."

Social media platforms present (and benefit from) the opportunity for audiences to develop para-social relationships with one another, aided and abetted by the algorithms of the platforms to hyper-charge these many-to-many relationships. Individuals can even leverage their popularity among peers to become "influencers," achieving that more traditional type of para-social relationships with their peers that provide them with new power to shape discourses (and achieve economic rewards from communication).

Montell (2021) describes how cultish social formations involve the use of language and emotional content to develop in-group identities that center around the group. These processes, which often destroy old social identities and social connections, can cause individuals to sever ties with family and friends. This may be necessary to create the isolation needed to accept the group's belief system, norms and values. These new beliefs and values may be contrary to their previous beliefs and values. Other research on moral psychology (Haidt 2013) and cognitive linguistics (Danesi 2023) expand on the social science of the power of languages to shape group belief and behavior. Influencer-led groups, where strategic objectives or more utilitarian objectives may be in play. The use of social psychological tactics to develop cultish social formations can be relatively benign (such as promotion of veganism or paleo diet) and might effectively end there. Others are far less benign, setting up individuals to move down the path of self-radicalization even if they have no real-world relationships that subscribe to the group's beliefs, norms, and behaviors.

In this research effort, offerors are encouraged to submit a study on highly followed radical influencers on social media in nations other than the United States to issues such as consider:

- The social and psychological dynamics of para-social interactions and relationships in radicalization, extremism, and anti-US discourse
- The role of the influencer in the creation of radicalizing cultish social formations;
- The investigation of compelling content offered by influencers in organizing, socializing and developing radicalizing belief systems
- State and non-state actor influencers (example: Wagner Group Telegram channels, Hezbollah or Hamas Telegram, Twitter (X), or other social media platform) in the development of parasocial social formations with the potential for creating cultish social formations
- How social media monetization schemes contribute to the creation of radicalizing content from influencers
- The social psychological, sociological, or linguistic aspects of influence in social media, to include the strategic and tactical use of language, image, and video to prompt culturally-relevant emotional responses
- The investigation of techniques of education in media literacy to promote audience resilience to radicalization

Social sciences that are of interest to this solicitation are sociology, anthropology, political science, linguistics, cognitive linguistics, media studies, communications, social psychology, and the economics of social media.

This solicitation invites the study of the topic communities with the potential for radicalization and the promotion of violence, group polarization, and civil instabilities outside of the United States. The essential focus of such studies is the economic and social ecologies of cultish social formations that focus on social media influencers—accounts with very high followerships—and those accounts that seek to become such influencers.

This effort will study the spread of extremism, hate, fear, and conspiracy theory as it spreads to social media audiences through parasocial relationships and interactions. The sociological, social psychological, and cognitive science of how influencers develop into radicalizing social media personalities, the social networks and economic networks and algorithmic maneuvers that position influencers optimally for broad reach, and the influencer's use of language, video, audio, and other affordances to provide compelling content suitable for the development of cultish social formations are all good candidates for a successful proposal. Online and offline influence can be considered. The objective is to develop a deeper understanding of audience relationships with parasocial others, in either a one-to-many or many-to-many parasocial relationships that lead individuals deeper into cultish social formations that promote self-radicalization. The economic incentives for social media celebrities and the role of monetization schemes to create conducive environments for the development of toxic parasocial groups and radical extremist discourses may also play a role in the study.

The study should offer, as part of its deliverables, new insights into cultish social formation processes and new ideas for how to mitigate radicalization, develop audience resilience to online influence, and how to identify the techniques used to isolate, manipulate, and radicalize audiences across the spectrum of conflict. The social, cultural and political contexts of the chosen case studies are expected to be an integral part of a successful proposal.

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Topic 6: Temporal Orientation and Strategic Considerations
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In *The Politics and Science of Prevision: Governing and Probing the Future*, Wenger, Jasper, and Cavelty (2020) state that modern "shifts in global economics and politics are in line with asynchronous shifts in the temporal thinking in Western and in Chinese politics." The quote specifically references Chinese temporal orientation as distinct to the West, yet differences in perceptions of temporality exist across the world, as time plays a factor in worldview, outlook, decision-making processes, and in other cultural aspects. Where differences exist, they may create tensions between actors and impact relationships. These impacts may affect strategic interactions, and thus require deeper understanding.

Social science, and in particular, anthropologists and political scientists, have engaged in a growing body of literature related to time orientation and temporality since the 1970s. The literature contains multiple frameworks related to time orientation. Time has been categorized as cyclical, linear, or spiral; outer and inner; and monochronic or polychronic, among other approaches. Although the topic remains debated, many researchers view cultural understandings of time as social constructs continuously reinforced through sociocultural practices. They are not static, but rather dynamic and evolving processes reflecting how cultures change over time responding to intrinsic and extrinsic factors. Within this discussion, time orientation has progressed from a singular cultural dimension to being considered a culturally-shaped cognitive process, sometimes influenced through historical memory. Less commonly, scholars consider time orientation from an affective lens to elucidate how it affects behavior. Perceptions of time and timing, and how they inform or are informed by cognition and affect, influence all aspects of life in a society, to include planning, decision making, and resulting actions. Thus, there is particular interest in how temporality and worldview affect strategic decision making and relationships.

Management literature has a growing body of research that incorporates time-related concepts, particularly for strategy and strategic processes, and continues to note temporality as a major research gap. This literature focuses on the role of temporality in decision-making processes and planning. Because strategy involves short- and long-term decision making and planning, the connection between temporality and strategy, which could include multiple facets of the strategic, such as thinking, planning, pause, surprise, etc., are understudied conjointly, there is a need to fill gaps in current knowledge. Specifically, there is a need to further interrogate the relationship between temporality and strategy to determine how they impact sociopolitical issues and relationships globally, and in which circumstances they create challenges and opportunities.

Successful proposals will focus on developing novel basic research on temporal orientation and strategy (i.e. where strategy relates to one or more of the following areas: strategic decision making, strategic thinking, strategic adaptation, strategic planning, strategic culture, strategic surprise, to include how competing relationships may interact, synchronously or asynchronously, to influence geopolitics or sociopolitical issues; and/or advance an understanding of how and when temporal orientation and differences among them affect or should inform strategic thinking, strategic action, and strategic pause). Proposals should explicitly identify and define the aspect(s) of strategy the research will interrogate. Also of interest is how multiple aspects of the strategic might combine in "strategic competition." This topic does not prescribe specific use cases but

recommends that the team include cultural expertise for those proposed. Projects that include experimental approaches and/or consider how research results may lead to predictive outcomes are encouraged.

Bibliography:

Wenger, Andreas, Myriam Dunn Cavelty, and Ursula Jaspers. 2020. The Politics and Science of the Future: Assembling Future Knowledge and Integrating It into Public Policy and Governance. In *The Politics and Science of Prevision: Governing and Probing the Future*, edited by Andreas Wenger, Ursula Jasper, and Myriam Dunn Cavelty. London: Routledge. 229-251.

Topic 7: Evolving Contexts of Deterrence

POC: David Montgomery, Office of the Under Secretary of Defense for Research and Engineering, david.w.montgomery61.civ@mail.mil

Deterrence exists across multiple levels of society, and indeed is part of what regulates various aspects of social behavior. Within the national security context, the concept of deterrence has historically helped inform strategic decisions related to planning, investment, and policy. As the global environment has evolved, the concept of integrated deterrence—which is at the center of the 2022 National Defense Strategy and entails working seamlessly across warfighting domains, theaters, the spectrum of conflict, other instruments of national power, and networks of alliances and partnerships—has become a more holistic way of considering the dynamic relationship across complex sociopolitical domains.

This topic focuses on predictive models of deterrence and/or escalation management strategies. It assumes nuance in how deterrence may be comparatively and cross-culturally understood, and preference will be given to proposals that empirically test such models. We are especially interested in projects that develop and implement innovative causal identification strategies or leverage new measures or data and explicitly address the generalizability of findings and the extent to which similar deterrence logics are applicable across contexts and scale. It is assumed multidisciplinary approaches will be required to advance new understandings of deterrence and the varied sociocultural, economic, and political relationships it influences.

Specific foci may include, but are not limited to:

Tailored Deterrence
- Deterrence is predicated on holding valued objects at risk. What do leaders—national or within ruling coalitions—value and how does this vary across political systems? How does this vary across micro-, meso-, and macro-levels? Are these "valued objects" conditional? How do policy tools influence these objects at risk?
- How do variations in U.S. competitor decision-making processes (e.g., the People's Republic of China, Russia) influence the likelihood that specific U.S. actions will deter or provoke? With these variations, how and where do competitors make decisions about potential responses across the competition continuum?

- Recent deterrence efforts have attempted to influence the national leader(s) by holding at risk something valuable to elites, sometimes individuals, in the belief that deterrence can work indirectly. What are the dynamics of intra-elite relations and their influence on the national government?
- How can competitors' public communications be used to understand (or misunderstand) their decision-making processes and the likelihood of deterrence success? In addition to public documents, to what extent might other actions or activities convey information about their decision-making processes?
- What signaling mechanisms are most effective at deterring and in what contexts does this change?
- How do competitors perceive military and non-military deterrent signals differently? How stable are such perceptions (i.e., can they change rapidly and unexpectedly)? Given the lack of complete information, (historically) to what extent have foreign observers been able to accurately understand competitor perceptions and changes in those perceptions?
- What are reliable empirical measures for whether deterrence is being sustained, strengthening, weakening, or at risk of failing? What are the best measures for (adversary) decision-making? Do gain/loss asymmetry, decision making under uncertainty, or other models of economic actors affect the generalizability of deterrence models?

Whole-of-Government Approaches to Deterrence
- Can military and non-military (diplomatic, informational, economic, or other activities) instruments of power be used in whole or in part to produce effective deterrence? If so, does the use of military and/or non-military instruments of deterrence differ in impact, and how do the effects of one interact with the other? Do the dynamics change when one side has many options with which to deter while its competitor has few or one, e.g. force alone?
- Can historical lessons on successes and failures of coordination between diplomatic and military strategies inform the development of future deterrence strategies? If so, how, and what are the limits of reference class forecasting to understanding contemporary challenges?
- How can whole-of-government approaches best be leveraged to de-escalate tensions while defending important interests? How do such efforts differ across political, social, and economic systems?

State System and Deterrence
- How do multi-party and multi-level conflicts affect deterrence? How do the different roles—belligerent, audience, bystander, mediator, etc.—assumed by the powers affect deterrence?
- What approaches can governments take to deter multiple adversaries at once? How do steps taken to deter one adversary impact deterrence of another adversary? How often do signals intended for one adversary impact the decision calculus of another (adversary, ally, or partner)? How does attempting to deter multiple adversaries affect the choice of means, strategies, and ends by the deterring power?
- To what extent is value-based messaging or value-based deterrent actions effective across heterogeneous values systems?

Technology and Deterrence

- How does technology (current and emerging) impact deterrence dynamics? Do emerging technologies pose novel risks and, if so, are new approaches to deterrence necessary to address them?
- How does revealing or concealing capabilities in different technological and strategic contexts influence deterrence outcomes?
- How and to what extent can strengths in some domains offset weaknesses in others?

Topic 8: War Termination Processes and Prospects
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Dynamics of war termination have evolved over time, from the more limited aims of wars in the eighteenth century, through the more decisive objectives of many wars in the 19th and early 20th centuries, then back to the "limited wars" of the Cold War period. As such, there is an evolving need to understand the means by which contemporary conditions affect how leaders seek to terminate conflicts and the conditions under which they will be successful.

This topic focuses on empirical and explanatory models of the war termination process to understand the progress and outcomes of this dynamic process. It assumes that the belligerents' choices are informed by the structure of interaction, the intensity and domestic and international dimensions of the conflict, and the cultures of the belligerents. We are particularly interested in projects that develop innovative understandings of the evolution of actors' preferences during the course of fighting. Preference will be shown for proposals that utilize multidisciplinary teams to qualitatively and quantitative characterize the social, cultural, economic, and political contexts of the problem at the micro-, meso-, and macro-scales. It is also assumed that the problem of war termination requires both theoretical and empirical investigation.

Specific foci may include, but are not limited to:

Conflict Effects on Preferences and Choices
- How can we understand the varied costs associated with war—e.g. general economic costs, societal harm, etc.— how they change, and what drives belligerents to negotiate in specific contexts?
- How does war termination as a dynamic process affect actors' preferences and choices? What theoretical and empirical insights can we get into this process?
- How does the military strategy—the application of the means of destruction to control the pattern of conflict—interact with the political strategy and the war termination process?
- What is the interaction between the negotiating process and an ongoing conflict? Can negotiation set condition for military action? Can fighting set conditions for negotiating? How can signals sent in negotiations affect incentives for fighting? How do interests change during the progress of a conflict? How do interests change as the conflict's end approaches?

War Termination, Strategy, and the Causes of War

- Are there incentives when a war is started that complicate war termination? Are there incentives in political or military strategy that discourage thinking about the termination process?
- How should military strategy account for the dynamics of war termination?
- How do the stakes of a war influence which "exit ramps" or termination strategies are feasible?
- How have the terms of war termination historically influenced subsequent deterrence and the likelihood of future conflict?

Conflict Structure and War Termination
- How do multi-level conflicts or the conflict structure affect the war termination process? Does the number of belligerents and neutral parties affect the process? Does the kind of belligerent—e.g., state or non-state—matter?
- Conflicts may occur at several levels. All wars will include intra-belligerent as well as inter-belligerent dynamics or factors. Consider the wars in Asia at the beginning of the 20th century as an example of a multi-level conflict: (1) the civil war in China; (2) the conflict between China and Japan; (3) the war between the Allied powers and Japan. How do these levels interact and affect the war termination process at each level?
- How do intra-elite dynamics influence war termination?