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SECURING AMERICA'S FUTURE IN THE NEW "INTERWAR YEARS"

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PARTICIPANTS:

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THOMAS WRIGHT, Moderator
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COLONEL KENNETH P. EKMAN (USAF)
Federal Executive Fellow, The Brookings Institution
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Federal Executive Fellow, The Brookings Institution
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Professor of Security, National War College

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P R O C E E D I N G S

MR. SINGER: Let's go ahead and begin. For those of you that I haven't met yet, I'm Peter Singer. I direct the Brookings Center for 21st Century Security and Intelligence, and it's my great pleasure to welcome you all to the session. The Center, or 21 CSI as we call it, was created to address some of the key problems in security policy shaping the coming decades. It brings together folks that work on everything from defense policy to arms control questions, cyber security and intelligence community issues.

And what we try and do is not just explore the new policy challenges that are emerging but also how they cross and connect between traditionally stove-pipe fields. And it's with this mission in mind, that we've been hosting the Research Symposium for Military and Federal Fellows, now in its fifth year. And it's why, also, it links very well to the theme of this year's session, Securing America's Future in the New Interwar Years.

I would argue, similar to today, in the 1920s and '30s, were a period of great flux and change, with uncertainty in everything from strategic trends, to budgets, to new technologies that were incredibly disruptive in everything from their tactics and doctrine to the very organizations and domains of warfare itself.

And today we are going to explore changes that can be thought of as these parallels, again, and changing everything we fight with urbanization trends, and cyber domains, to new organizations that we are building. But I would argue that among the most important lessons from the last interwar years, was the need to weather change by learning. Our forbears had a much, much, tougher budget environment living through a great depression, they would laugh at the challenges of sequestration.

But they figured out everything from uses for the new aircraft carrier, to the development of an Army Air Corps, and then subsequently an Air Force. To the U.S. Marines conceiving of amphibious warfare before they even had a truly functional amphibious landing craft. That is, if you go back and look at the officers of similar rank to

many of you here today, the soon-to-be greats, like the Eisenhowers, Pattons, Bradleys, Nimitz, Chesty Puller.

This period was not just about generating new ideas and throwing away old ones, but also about identifying the leader attributes that would be needed in the upcoming conflicts. That's why I would argue that it's so crucial to have a program that focuses on those qualities of open and independent thinking. Now, it's important for me to note, especially for the media here in attendance, that the research and policy recommendations that come out of this session, you're going to hear in the coming hours, as well as any of the statements that are made by the officers, the panelists today, they are not about espousing official policy.

Rather, this is a research symposium, intended to provide greater awareness of the valuable independent research work that these leaders are producing on cutting-edge issues, in particular with either research approaches, and/or topics that the regular bureaucracy often has a tough time dealing with. In essence what we are about to enjoy is an event organized by military officers designed to highlight some of the best research being conducted by military officers today.

So, with that quick introduction, I'll hit just a couple of logistics points. The first one, as you can see up there, for those of you that are embracing social media, you can tweet or follow this event at hash tag BI Military, and you'll also, in the agenda, notice that we've got a series of breaks woven in, as well as a launch later on, and that will all be set up in the hallway there that you've seen.

With the logistics out of the way, it's a real great pleasure for me to be able to introduce our opening speaker, not just one of the top thinkers on 21st Century Warfare, but also a great friend.

David Kilcullen began his career 22 years -- serving 22 years as a Light Infantry Officer in the Australian Army, attaining the rank of Lieutenant Colonel. After that he served with the Australian Office of National Assessments, and then with the U.S.

State Department, as Chief Strategist, in the Office of the Coordinator for Counterterrorism. And later, a Special Advisor for Counter-Insurgency to the Secretary of State.

He went to serve as Senior Counter-Insurgency Advisor for General Petraeus during the 2007 surge, and advised NATO's ISAF Force from 2009 to 2010. In addition to continuing in these roles, consulting for U.S. and allied governments, international institutions, industry and NGOs, Dr. Kilcullen is currently the Chairman of Caerus Global Solutions, a Strategic Design Consultancy, where he focuses on the overlapping problems of conflict, climate change, energy, health and governance in the conflict zones of the world.

And finally, if all of that wasn't enough, he is an accomplished author in multiple domains, including of such key works as *Twenty-Eight Articles* which is, I would argue, the most widely-circulated email among troops deploying in the warzones, like Iraq and Afghanistan. He is the author of *Complex Warfighting* which was a crucial paper in outlining thinking in the space, and shaping our views post 9/11. And finally, a number of acclaimed books like, *The Accidental Gorilla*, *Counter Insurgency*, and most recently, *Out of the Mountains: The Coming of Age of the Urban Guerrilla*, which I urge you to check out.

So with that Dave, we are delighted to have you join us, and please join me in welcoming.

DR. KILCULLEN: Thank you. And it's wonderful to be back. This is the second I've had the opportunity to speak at this event, and I think it's a unique event in Washington and it's actually organized by the Fellows at Brookings, and I think it has a sort of gritty realism to the research that some of the other research conferences around the town don't necessarily include. So what I'm going to do is try to talk for about half-an-hour or so, so that we can have time for at least some questions and discussion.

What I want to do is start with a little bit of look back at history, and then

talk about some features of the future conflict environment in which we may find ourselves operating, in and after what Peter just called the interwar period that we are in now. And then, finally, I want to talk about what I think would be my top 10 implications of that environment, for both military and civilian thinkers, as we consider the future of conflict.

So 2014, it's coming up to 200 years since the end of the Napoleonic Wars, and if we look back over those last two centuries, since 1815. At patterns of conflict across the planet, one thing jumps very clearly, and it's that irregular conflict, that is conflict in which one or more of the major combatants is a non-state armed group. Not a government, but an insurgency, or a militia, or a group of terrorists, or bandits, or pirates, or whatever, is by far the most common, numerically, and the most geographically widespread form of conflict across the planet over the last 200 years.

So, about 83 percent of conflicts since the end of the Napoleonic Wars have been irregular in nature. That is one or more combatants was a non-state armed group. Only 17 percent of conflicts since then have been -- sorry, have been conventional, that is state-on-state, primarily force-on-force, one government against another, where the outcome is determined by the clash of regular militaries on an organized field of battle.

Now, we can't ignore that 17 percent, and I'm not here to say that we should be focusing on irregular warfare to the exclusion of conventional state-on-state conflict, because that 17 percent includes both World Wars, which between them killed about 120 million people, and it may well have included a third world war if we hadn't focused very heavily on issues of nuclear deterrents over the 60 years after the end of the Second World War.

So, it's not that conventional state-on-state conflict doesn't matter, it matters very much, it's just not very common, it's not the norm, and if we think about what normally happens it tends to be conventional military against the non-state actor, or a

collection of state and non-state actors, often occurring in an intrastate, that is within one country, conflict environment. And if we sort of narrow that historical aperture a little bit, to look at U.S. Military history in particular, we see a very striking pattern in the way that the U.S. Military engages in conflict.

And in fact, if we begin a timeline at around 1846, that is the beginning of the Mexican-American War, and we run that timeline forward to now, over about the last 150 years, we see a very consistent pattern, where the U.S. engages in a large-scale, or long-term stabilization operation, irregular warfare conflict. Peacekeeping operation, or counterinsurgency campaign, about every 20 to 25 years. And I'm talking about campaigns on the scale of Vietnam or Afghanistan or Iraq.

In the periods in between those conflicts, it engages in numerous small and medium-sized conflicts. Defense Science Board Study of 2004, showed that in the period since the end of the Cold War, we've engaged on average in small and medium-sized peacekeeping, stabilization and humanitarian systems operation, about once every five years, and those operations have lasted about 10 years each.

So what we tend to see is kind of a sign, where, if we see a period of high engagement in military activity at large scale around the planet, which may go for 10 or 15 years. Then we see a period of sort of 20 years of smaller, but more numerically common engagements, and then we get back into large-scale engagement. So, one of the things that jumps out of that historical pattern, is that although right now, we have a President and Secretary of Defense, and a Congress, and frankly Joint Chiefs, as well as a public who are -- who could not be less interested in engaging in large-scale conflict overseas.

The fact is that the historical records suggest that we will again at some point, in the next decade or two, engage in large-scale irregular warfare activity. We don’t like to think about it, we don’t like to plan for it, we almost deliberately forget lesson from each cycle of large-scale engagement before the next, but the fact is there's no

evidence to suggest that we are looking at any change in that pattern. And in fact, you could ask what it is about the United States that creates those cycles, and I think it's a very interesting question.

Stephen Sestanovich just recently published a book called *Maximalist*, where he tracks cycles of what he calls over-commitment and underperformance in U.S. engagement with the planet since the end of the Second World War. He talks about things within U.S. political culture that drive the U.S. to engage, but then to disengage with international issues of conflict. And that's his explanation for what I've just pointed to, this phenomenon that a few people have recognized, of these cycles of high and low periods of engagement.

I'm not sure that that's a completely -- sufficient explanation. You could also look at what some people might call the deep structure of U.S. engagement with the planet. Things like reliance on -- until very recently, on strategic oil supplies. The majority which were located overseas. That's one possible explanation, and there's a whole school of thought out there that suggests that the cycles of conflict in which we find ourselves, are primarily driven by a sort of capitalist, near-liberal car industrialism that relies on the automobile and fossil fuels in order to generate that.

Again, I'm not sure that that's a complete explanation, because that's a phenomenon that's existed for the last 70 years or so, but this pattern goes back at least 150. So there's probably some other explanation. I'm not sure what it is, but if I were a betting person, and if you are in the military you probably need to be, when you think about future conflict.

I certainly wouldn't be betting that we'll be getting out of the business of large-scale or long duration stabilization counterinsurgency, peacekeeping or humanitarian assistance operations any time soon. So I think we are looking at a period of operational continuity, although as I'll talk about in a second, I think the environment is going to be very different from what we've been engaging in over the last 10 years.

But before onto that, I think three obvious points. The first one is, I think it's valid and important to be thinking about an interwar period, but a practical matter we are not actually in the interwar period yet, we are still at war. We still have colleagues and friends deployed in Afghanistan, we have a significant amount of combat going on, and we still have a very tricky process of disengagement, stabilization, the creation of enduring securing relationship that we have to navigate if we want to get to the interwar period that we've been talking about.

Rushing for the exit in Afghanistan is actually one good way to guarantee that we'll have to come back at some point. The second point that's worth making is, you know, as Trotsky repeatedly said, there were disputes whether he actually said this or not, "You might not be interested in war, but war is interested in you." And one of the things that we've seen is that, as we've sought repeatedly to disengage from large-scale, long-duration stabilization operations, the planet seems to be kind of dragging us back into those conflicts.

So if things like Syria, Ukraine, the conflict in Mali, conflict in Libya, and confrontations in the South China Sea, and over the Senkaku Islands, suggest that while we might want to think that we are in an interwar or post conflict period, we are actually not, and we need to be thinking about how to manage an era of persistent conflict as well as thinking about how to handle the next upswing.

Thirdly though, and I want to reinforce something that Peter said in the introduction, this is the time to be reimagining what future conflict is going to be. In the 1920s and the 1930s the British, the Americans, the Germans, the French, sat down in their different ways and thought about the lessons of the First World War, and thought about what were the key takeaways, the key capabilities, the key strategic considerations to bear in mind for the future.

In the United States it was a time of real intellectual ferment innovation. And we've talked about the Army Air Corps, the Higgins Boat coming out of the Marine

Corps. Not just out of thinking about what happened in the First World War, but out of the experience of the Banana Wars in the Caribbean, and a variety of the small conflicts that filled that interwar period as we've talked about. In Europe we saw three very different visions of the future of conflict emerge from those kind of postwar think fests that the different militaries engaged in. And obviously we know which one came out on top in 1940.

So the way that we imagine the future of conflict, has a very important effect, not only on what our capabilities are that we bring into the next cycle of intense violence in conflict, but also the kinds of conflicts that will emerge, because as we demonstrate capabilities to operate in a certain environment, potential and actual adversaries will alter the way that they plan to counteract that. So this is a very timely and important discussion that you guys are having.

So, with that in mind, let's talk about this future environment. The first thing I want to say about the future environment for conflict, and it's, I think, an obvious point, but it's worth saying anyway, is that it will not look much like Afghanistan. And to an American audience where, Americans spend a lot of time over the last decade engaged in very, very urban combat in Iraq, I think it's fairly obvious that Afghanistan is not the only mode of conflict that we've experienced over the last 10 years.

But if we were having this conversation in Europe, one of the things that I regular encounter when I engage with NATO and other allies, is a view that in some way Afghanistan is, if you like, the paradigm of 21st Century conflict. And that, I think, is because whereas roughly the same number of countries engaged in both Iraq and Afghanistan, about 50 in either case. In the case of Iraq only really the United States was engaged in heavy urban conflict in the center of the country.

When I deployed to Iraq in February 2007, for the second time at the beginning of the surge, as Peter noted earlier, at that time 50 percent of total combat action in the war in Iraq, was happening within Baghdad City limits, which was a purely

U.S. and Iraqi theater. The rest of the country experienced a vastly lower level of conflict. So only the U.S., and to some extent the U.K. in Basra, experienced this kind of high intensity over an environment.

But if we look at Afghanistan it's very different. We have roughly the same number of countries engaged, 50, but the conflict is much more diffused. Most countries that have deployed to Afghanistan have seen significantly more conflict than they saw in Iraq, the U.S. is an exception in that respect. And most conflicts -- most of the conflict in Afghanistan has been rural and remote. So, for most of the conflict to date, Afghan Cities have actually been the safest parts of the country, and the war has been one of frontier outposts, remote valleys, little villages in the mountains.

And so for most of the alliance and most Western countries, the vision of future war that they are taking out of the last 10 to 15 years, is very heavily influenced by the Afghan theater. And of course Afghanistan is pretty -- it has some pretty specific characteristics; it's landlocked, it's very remote. As I said, the conflict hasn't been particularly urbanized, and most importantly, Afghanistan has a very, very low level of electronic connectivity. Dramatically higher than it used to be, in common with most places on the planet, but still quite low compared to much of the rest of the developing world.

So, as we look forward, Afghanistan is not a great model to think about what the future environment will be like. And in fact, most examples of conflict that we've seen in the last 10 years or so, have been urban, they've been coastal, they've occurred in very heavily electronically-connected environments. Places like Libya, Syria, Somalia, the unrest of the Arab Spring, the final phases of the conflict in Sri Lanka, the ongoing unrest in several mega cities around the planet. All of these examples of both warfare crime and non-state violence have occurred, primarily, in this coastal-connected urban environment.

And there are four key trends that are driving this environment. I talk

about these in great length in the book that I just put out last year. But let me talk through it very briefly for you. The first one is just, straight up, population growth, so at the beginning of the Industrial Revolution in around 1750, the total population of the planet was around 750 million people. It took about 150 years for that population to double, so by 1900 we were looking at 1.5 billion people on the planet. The population doubled again in only 60 years to 3 billion by 1960. It doubled again to 6 billion by the year 2000, and in just the 14 years or so since then, we've added 1.1 billion to the planet. So today, we are looking at around 7.1 billion people living on planet earth.

So we are seeing not only rapid growth in population, but an accelerating growth in population. And as we project that forward, the Bureau of Economic and Social Affairs at the United Nations, and other organizations that look at future demography, project that the population of the planet, won't continue to rise forever, they will top out sometime around the middle of the century, at about 9.2 to 9.5 billion people on the planet. But that's another 2.something billion more people in just the next generation added to the global population. So that's the first big trend which is shaping this pattern.

The second one is urbanization. So, again, going back to the sort of time reference that I've been using of the end of the Napoleonic Wars, the beginning of the Industrial Revolution, at that time, roughly 2 percent of people who lived in the planet lived in a city of 1 million or more. By 1900 it's 10 percent, by 1960 it's 25 percent, by April 2008 it's 50 percent across the planet. By the middle of this century, at around the time that we hit that 9 to 9.5 billion population level, we'll be sitting at 75 percent urbanization. So three-quarters of the people on the planet will be living in a city of a million or more.

And as part of that process, we are not only seeing a huge constellation of small and med-sized cities, we are seeing an increasing number of mega cities. Cities over 10 million in population. So that we are going to have some just absolutely enormous cities, clustered primarily on coastlines, which I'll get to in a minute, in the

developing world in particular, emerging over just the next generation.

Edgar Pieterse, who is the Head of the Africa Center for Cities in Cape Town, in South Africa, says, "We are talking about dramatic disruptive change in less than one generation." And I would put it a different way, it took all of human history, until 1960, to get to 3 billion people on the planet. We are likely to add the same number of people just into coastal cities in the developing world in the next 30 years away. I think it's a fair bet that that's going to have some kind of effect on conflict, and we can talk about that in some more detail.

Third trend is littoralisation. So these cities that we've talked about are not evenly distributed. They are not only appearing within the developing world, primarily, but they are also primarily appearing on coastlines. Already in 2012, 80 percent of people on the planet live within 50 miles of a coastline, and that process of moving to coasts has really paralleled the process or urbanization. For reasons of basic physics, it isn't always has been easier to move things that are heavy by water than on land, and so most cities have tended to emerge around logistics hubs or trade intersections, and over time we've seen this process of cities emerging more heavily on coastlines than in inland areas. And that same pattern is still evident today.

And as, of course, people move to cities; they don't move to a green field site, they move preexisting urban environments. And so we see this cluster of new urban population emerging around the outside of existing cities, and we see a process of urban overstretch, where cities are overwhelmed by the sheer number of people and they don't have the governance capacity, the public health capacity, in particular the water generation, or electricity generation capacity, to sustain this period of rapidity in growth.

And what you get is a sort of horseshoe-shaped, or ring-shaped band of peri-urban territory around the outside of an existing city, in which there are very few government services, very little government presence, and you get the emergence of non-state armed groups, who carry out the functions that the government is not able to

carry out.

Now, really important point for a roomful of military officers, it's incredibly important not to think of non-state armed groups as automatically the enemy. There's not a lot of Sunday school choirs running slums out there in the third world. If you are a non-state group that's providing the functions of the state in an environment where there's not a lot of government presence, you are almost certainly going to be an armed group, or you're not going to survive very long. So, when you go into a mega city, or into the slums around the outside of a mega city, in particular, you will be encountering non-state armed groups who are not necessarily the enemy, they're just the government, and after 9/11 we used to talk a lot about ungoverned spaces.

In the process that I've been doing over the past few years, I've been into a lot of these supposedly ungoverned spaces. The Pakistani Frontier, Mogadishu in Somalia, parts of Libya, parts of Latin America. None of them are ungoverned. They are all very thoroughly governed, but just not by the government. There is some group providing government functions.

All the stuff that I've just talked about was well understood 30 years ago. So if you look at military doctrine, particularly Marine and Army doctrine from the late 20th Century, the idea of the urban network tutorial is all there, and guys like Ralph Peters and General Krulak, General Scales, many people were writing about these very issues before the turn of the century. But that was the Pre-Cell Phone Era, it was before significant penetration of the Internet into the developing world, and was before the emergence of satellite and cable TV as major players in the developing environment.

And so what we are looking at with this fourth factor, is something that's fundamentally new, and that's the explosion in electronic connectivity that's happened in just the last decade. Just a couple of datum points on that. In Nigeria, in the year 2000, there were a total of 30,000 cell phones, today there's 130 million. That's 280,000 percent increase in just a decade or so. And we see very similar patterns in the

developing world. In the time over the last decade where U.S., U.K., and other developed countries have gone up by about 70 to 150 percent in terms of cell phone ownership and Internet access. We've seen rates of 28,000 to 300,000 percent increase in the developing world.

And that, fundamentally, changes the environment. We've talked about cities under stress, about urban overstretch in mega slums. We've also talked about the emergence of non-state groups that fill that gap, but one of the important elements that this new connectivity brings, is that these groups are very, very connected, both with each other and with other groups around the planet, and with vast populations and Western communities.

So we have a much greater degree of economic and informational interdependence in the environment, and we have the possibility for what some theorists talk about as boomerang effects. Things that happen overseas can rapidly have an effect in a domestic environment. And one example that I know people at Brookings have looked at in detail, is the idea of Diaspora attacks. So when you're engaging a non-state armed group in an overseas environment, for whatever reason, it is often not the smartest thing for that adversary to directly attack U.S. Forces in theater, it's much smarter for them to attack the U.S. homeland directly. And we are starting to see those kinds of patterns emerging.

I think another pattern that is clearly a function of this explosion of connectivity, is what I call remote warfare. Some other people call it virtual warfare. The idea of things like drones, really remotely powered of vehicles actually, and cyber operations, as becoming increasingly important, as we are dealing with a tech savvy and technologically literate population in a way that we've really not dealt with before in conflict. And during Q&A I can give you some examples of that, if you like.

So, let's cut to the chase and talk about some of the sort of top 10 implications for military thinkers at this point. And I think, a couple of caveats. The

implication of course is that conflict will increasingly happen in urban-crowded, coastal, highly-connected environments. But that doesn't mean that there won't still be conflicts in rural environments, in mountains, in jungles, deserts and so on. And if you're in a professional military, you can't just focus on the most likely, you have to focus on a full spectrum. And so for professional planners, we can't just focus on the urban environment we need to take account of urban environments as being more common as operating areas, but we need to think about the full spectrum of -- the full range of environmental conditions.

There will also still be conventional state-on-state conflicts. We are seeing one in Ukraine right now, but they may occur in a different mode because of these environmental that we've just talked about. And I think the way that Russia moved into Ukraine in the last week, is evidence of the ability of some nation states to leverage tools that just weren't available a few years ago. And again, we can talk about that in Q&A. So, as a proportion of the whole, I think conflicts are more likely to happen in these urban coastal environments, but they will happen in a different way than we may have been used to over the last decade.

So top 10 implications for you to think about. The first one is that we need to start thinking about cities, rather than countries, as the primary unit of analysis. We organize around the country team, the country desk, the embassy which generally is located in a capital city, and we tend to come up with a set of solutions that are well-tailored at the nation state level, but not very effective at the city or subsidiary level.

And in fact, if you think about, let's say, Nigeria again, Abuja, Benin City and Lagos, are all three cities in Nigeria, but they have completely different circumstances. Very different factors are driving the problems that are happening in each of those cities, and having a one-size-fits-all approach to the three isn't really the way to go. You need to be thinking about each city as a unit of analysis in its own right.

The second very important element, is that we are now dealing with a

self-revealing environment, so we are talking about a very connected, very literate, very tech savvy population in many of these developing world mega cities. And you can just look at, for example, the number of people that are blogging, including the number of people who are blogging in English from favelas around Rio. You can look at the number of television stations run by the community in large cities in Africa, including radio and television stations in squatter camps in large African cities.

You can look at the number of people that are out there studying, and publishing research on their own environment. And it used to be that we could take an, arguably, very orientalist approach to the developing world, and people would go and study, you know, simple societies, and would send missionaries out to civilize the natives. And we would send anthropologists out with funny hats on to write books like, you know, *The Sexual Life of Savages In Melanesia*, which is a real book from the 1920s. And that would be our approach. A very sort of orientalist othering of people that -- who weren't fortunate to be, you know, White and belong to the imperial upper class.

We don't need to do that anymore, it was never the right thing to do, but it's totally unnecessary now, because you have hundreds, if not thousands, of people in these environments telling you minute by minute what's going on in the environment, and that happens all the time. Not only enduring conflict, but also pre and between conflict. So the ability to understand the environment is dramatically better than it was. We should never again, be in a position that we were in when we went into Iraq in 2003, of going in blind, without understanding the environment, without understanding who was who in the zoo. Without understanding who to talk to, or who to be wary of, and so on.

I would argue, and as most of you know, I have argued a few times, that going into Iraq at all was a significant problem. But even if you assume that we are going to be going into these environments, on a relatively regular basis in the future, which is what the historical record suggests, then we need to be going in with a better understanding of the environment. And that involves, I think, engaging with communities

in a different way.

Third implication. We are talking, I think, primarily here about littoral expeditionary operations. We are going to be operating in a very littoral environment, that is an environment where the intersection of air, land, sea and cyberspace domains create a very complex and different set of circumstances, for an expeditionary Force Commander, and we need to be thinking, in particular, about keeping as much of our forces afloat, as we possibly can, without, for example, sending brigades and divisions to engage in the slums around very large mega cities in the developing world.

Fourth implication. And I think this is something that I've written about before but I want to just be very clear about this. FM-324 style counterinsurgency, as we've known it over the past decade, will not work in the future environment. It just won't work as a matter of scale. A doctrine that we currently have as authoritative within the U.S. Military, talks about 20 counterinsurgents per 1,000 members of the local population. That translates into the entire U.S. Army disappearing in a mega city, and most people in that mega city not even knowing it's there.

So, the idea that we are going to be able to flood troops into a developing world city, to try to control that city, to try to occupy it, and direct behavior of the inhabitants, was never a good idea from a political or moral standpoint. It's not a good idea from a doctrinal standpoint now. It's just not doable as a matter of scale.

The next implication is perhaps a reaction to that, which is that we are seeing increasing focus on remote warfare. Cyber operations, drones and robotics, as ways to compensate for that lack of ability to engage at strength in a mega city. We need to be very, very cautious that we don’t create a set of tools that allow political leaders to avoid the consequences of conflict. To send robots or drones, or cyber weapons into, "harm's way" while keeping our own people safely, that is safe for us, ensconced away from the scene of conflict. I think that will, if anything, only exacerbate this tendency to engage in large numbers of small campaigns, or we are not finding big ones, and then

reengage in these cycles of over-commitment and underperformance that Sestanovich talks about.

But that doesn't mean that the drone, the robot and the cyber operator won't be really important tools going forward, and the way that those tools develop and change, is something I think your imagination and your engagement with the future of pattern of conflict will shape. And is very important.

Logistics point. I wasn't smart enough to be a logistician when I was in the Army, I had to be an Infantry Officer instead. But if I was going to go back, I think that I would put much more emphasis on trying to understand logistics, and for the future operating environment, logistics will be the key to just about everything, in terms of non-stockpilable resources like electricity and water. In terms of engineering capacity, in the terms of the ability to reconstruct environments that have been damaged. In terms of the ability to handle industrial and urban installations that carry within them the destructive power of a weapon of mass destruction, but are surrounded by very densely packed population.

Are these things are that engineers and logisticians understand. Are that combat arms officers often don't, are going to be critically important in engaging with this sort of future, urbanized environment. And in particular, the way that we have done logistics over the last decade, contract-based, garrison-driven, where we go in and set up a base; we hire in from the external environment the capabilities that we need to sustain ourselves, won't be feasible in a future urban environment, where the reason we are there in the first place, may be that people don't have enough resources to sustain themselves.

Terrorism. Next implication. Terrorism will remain. I don't think there's any likelihood that al Qaeda, or al Qaeda like groups will go anytime soon. Most of these groups, I would argue, have 30 to 50 years of lifespan left in them, but we need to move away from the idea that has really animated a lot of strategic thinking over the last

decade, where we have defined the threat around terrorism.

If you live in one of these developing world mega cities or in a coastal environment that's experiencing overstretch, sure, there may well be terrorists groups operating in your environment, but that's not the major threat. In fact, in some ways the environment itself is more of a threat than any one group in it.

Just one example, last September there was a horrendous attack by al-Shabaab on a shopping mall in the Kenyan capital of Nairobi, which killed 74 people. And it was very, undramatic, four people came in from the outside and carried out a spectacular attack using, sort of, urban siege techniques, and created a massive popular impact. But if you live in Nairobi, that's not your major concern. There are 49 gangs operating in the City of Nairobi, between them they kill more people every month, than al-Shabaab killed in the Westgate Mall attack.

And as they work to prey on people coming into and out of the city, they've created a network of control, which basically allows them to shut the city down at will. And so, for most people in the developing world, and certainly in these kinds of cities that we are talking about, terrorists will be out there as kind of an irritant in the environment, but they won't be the driving factor. And we need to be thinking beyond, sort of, the war on terror as a construct. It's not as -- it probably never was a sufficient construct to explain international security, it certainly won't be in the future.

Last couple of implications. Clearly, it would be much better to keep the U.S. Military out of these environments entirely. And I want to be very clear about that. It's much better to engage upstream. To not have military boots on the ground. To not engage with deployed forces. To work through local partners or, in fact, to just facilitate peace building, and help communities to deal with their own problems without requiring a military response.

So, clearly, civil is better than military. But that's like saying that fire prevention is better than fighting fires. That's true, but it doesn't help you if you're in the

fire department. If you're in the military, your job is not prevention. Your job is to engage when prevention fails. And so, although it is incredibly difficult and demanding to think about this very challenging future environment, and it's tempting and also correct to say we shouldn't be engaging in there. There's no valid U.S. Military role in a lot of these problems.

The historical record is very clear, that is not going to stop American politicians from sending American Military Forces into these environments on a fairly regular basis. So you have to be ready to engage with them. You can't just say, "Our solution to the problem with the mega city is to not go there," which is kind of what we said, at an earlier generation of military thinking.

Related to that upstream intervention, through things like unconventional warfare, or foreign internal defense, or security forces systems; or, as I've said, peacemaking or peace building, is clearly preferable to late-phase, large-scale intervention. But again, we need to be ready for sudden reengagement. So although we are moving out of Afghanistan as fast as we reasonably can, and we are looking to a future environment of sort of low-intensity, persistent conflict, started with a few state-on-state conflicts, there still remains the possibility that we might get dragged back into some of these, what I would call zombie conflicts, which we think are dead, but they keep coming back to life.

Many conflicts in Africa fall into that category. Afghanistan most certainly does, and clearly the war in Iraq is in zombie-like phase right now of bouncing back. So, as we think about the future environment, we want to -- yes, we want to focus on upstream, non-military intervention, but we want to be ready to engage in the environment if we need.

And then the final point, which I just want to emphasize, is that the environment itself, public health, climate change. The overstress of economic and resource systems, water shortages, electricity shortages, those kinds of issues, large-

scale disease propagation, may turn out to be more of a threat than any one actor in the environment. And so we maybe need to be thinking about our security as a function of the individual, and the resiliency of the community, and ways that we can support that, rather than purely thinking about military intervention as an approach to dealing with armed adversaries in the environment.

So, I've thrown out a huge amount of stuff there. And what I think I'll do is just open the floor, we've got a few minute for questions. And why don't we start here, and let's have a conversation about it. Yeah?

SPEAKER: (Inaudible) I am a PRP, I'm an Intelligence Analyst. I think one of things that's important to point out is that we are facing 1 to 4 meters of seawater coming to those same urban centers in most cases. And when that happens the people downtown in the middle of the horseshoe, of course, you're going to move into the suburbs. And in many of these autocratic states, that means plowing down shanty towns to reassemble your skyscrapers. So there's just guaranteed conflict, just to do that.

I think the biggest challenge we are facing, and it seems to be totally ignore, is preposition of both massive military and world food program resources out in remote places. To think that basis in Saipan in Guam, have enough to take on, a medium-ranged conflict with China is absurd. It's way, way, way insufficient. So that business of prepositioning has got to be looked at, and it's got to be looked at right now.

DR. KILCULLEN: Yeah. I think those are both great points. I would just say that I think on the climate change issue there's a lot of debate, right, around how much sea level rise we are likely to see, and about how much effect on coastal cities is likely to occur. But let's assume, for the sake of argument, zero sea level rise, and zero, you know, man-caused climate over the next century. We are still going to see, even without that, more and more people in low-lying slum environments on coastlines; which puts more and more people at risk of coastal weather events.

You only need a storm surge of about the same size as a Hurricane

Sandy generated in New York City in 2012, to about 20 million under water in Bangladesh. And as you say, they are not going to stay there, they are going to move somewhere else. And you then have the possibility of significant large-scale conflict as a result of that.

The other factor I think, of prepositioning, gets to a broader issue. Which is that we are dealing with a very, sort of Wal-Mart wealth, right? We are dealing with a global, logistics and supply chain, and a global network of sort of capitalist business interaction, and transportation systems, and electronic and information systems that's very, very tightly coupled. That is, if one system goes down, it brings down a lot of other systems, and it's very interdependent.

So we have huge portions of the planet, dependent now on these distanciated, sophisticated systems where, for example, the water depends on the electricity in a lot of developing countries. When the electricity goes down, the water goes down, and so does the sewage. And so, one of the issues that I think we need to be thinking about, is resiliency and how do we make environments better able to cope with disruption and degradation, rather than simply trying to prevent disruption from happening.

And I think that we are getting to, right away, the point, with things like prepositioning, and other issues where we are beyond the capacity of any one country, even the United States, to cope with that.

SPEAKER: This three distinctions of Europe (inaudible) the six months period of time when (inaudible).

DR. KILCULLEN: Yeah. I agree, and actually another point on that would be the diplomatic activity in between conflicts. What our diplomats do to generate things like overflight rights and basing rights, and agreements around logistics pipelines and all that sort of stuff, is very unsexy, but it's critically important to rapid response. And you, obviously, can't generate -- you can't surge engagement, you can't surge trust, you

have to be doing it in between. So We can't hunker down behind a wall in between conflicts, we have to be out engaging with the environment.

MR. SINGER: Jim?

MR. SHEARER: I'm Jim Shearer, Former Commuter to Dili, East Timor. Thank you very much for your presentation. Two quick questions, number one, what tools do we need to better engage with the non-state actors that you mentioned earlier on in your presentation? Whether it's Falintil, Kosovo Liberation Army, Northern Alliance. Oftentimes we work, I think, better with separatists than we do with -- or centralists, but the non-state actors that are in the fight, than with the state actors, but we need to rethink that?

And secondly, in the urban environment you're describing, are there interdependencies that we can exploit in a positive way through the groups that control the logistics hub at the waterfront, need water coming in from the rural area upstream? Are there road patterns that we could exploit? And again, in a positive way to try and tamp down conflict and so on.

DR. KILCULLEN: Yeah. No. Those are both great points. I think the issue on interdependency is very important. When I was the S3 of a Peacekeeping Force in the South Pacific in 1998, we were in this town called Arawa in a place called Bougainville, and I got a letter. A guy carried it out of the jungle on the end of a stick, and handed it to me. And it was from a guy who lived about 70 miles upstream from where the force was deployed. And he said, "I calculate that over the life of the peacekeeping mission, you guys have used X mega liters of water from the river. I own the river. So you guys owe me, you know, $8 billion."

And so, I wrote him back a very polite message saying, you know, "Thank you for your interest in the Peacekeeping Mission but, you know, the Government of New Guinea, and the Bougainville Revolutionary Government, and the community of Arawa, have all agreed that the Peacekeeping Mission can use the river." So, in a polite

as possible way, you know, piss off.

Four months later I get another letter back saying, "Look. That's all very interesting, but I live further upstream than they do, so before it gets to them I own river, so it's river. You know, so give me the money."

So I think what we see is we tend to think about the city and focusing on the city, but there's actually a network of interactions and interdependencies that goes around the peri-urban space and into the rural environment, and particularly the peri-urban is very important. That area which is now slum areas, and is often the area where non-state groups fill the gap that the state doesn't fill, but it's also where the cities food used to be grown, it's where the market gardens used to be. It's where the catchment area for the water used to be.

And so what happens in that peri-urban area creates, basically, a gauntlet with everything coming into and out of the city, has to pass through, or it can be shut down. I think it's only a matter of time, before a number of non-state groups in that peri-urban space, become sort of self-aware, and realize, "You know, we can shut the city down." And in fact, that's already happening in some places.

I mentioned Nairobi earlier. if you talk to some of the more, frankly, corrupt city officials in Nairobi, and complain about the deals that they make with criminal groups, they will say something which I think is very apt to a military force engagement as well. They'll say, "Look, these guys can shut the city down at any moment, so we have to make deals with them, we can't just ignore them, but they'll just shut the city down. They can shake down every, you know, gallon of water, and liter of petrol, and every truckload of bananas that comes into Nairobi. And they can shut the city down."

So I think that that -- there's an offensive and a defensive element there. If you're trying to stabilize, and you're trying to defend the environment, then you need to be building relationships with the community that are collaborative and partners.

If you want to shut the city down, for example, it's a hostile city and you

don't want to engage with massive military force. Engaging people on the outside, and building alliances around that peri-urban space, may well be an approach that you might want to take. But the important thing is to realize that treating the population as the enemy, and particularly treating non-state armed groups as the enemy, is almost certainly not going to be the way to go.

I think that we saw massive turnaround in our fortunes in Iraq when we stopped doing that and started actually listening the Iraqis and engaging with them, to the extent that we've seen anything like that in Afghanistan, it's been around projects like that. To the extend you've got marginalized or socially, or economically excluded populations in a large city, who know that they will never make it into the dominant political or social or economic order, that's the basis for a lot of this conflict. And so one of the ways to engage, I think, is to engage with those people, and not to treat them as the target set, but as a set of potential allies.

MR. SINGER: I'm going to use the opportunity for the last question, by asking two. The first you hit it very well, there's a misnomer around the idea of the Interwar Years, that you're not at war when, in fact, if you look back at the last 1920s and '30s, interwar years, there was a massive level of activity, ironically enough in almost all the same places that we are right now--

DR. KILCULLEN: Right.

MR. SINGER: --whether we then call, you know, as we then called -- you know, it was the Northwest Frontier, or it was in Iraq, it was in Somaliland. The first question though is, there was a differentiation between militaries that learned from those experiences, and applied it not just to the regular -- irregular warfare, to the 83 percent, but also to the regular warfare. So I'm thinking, you know, for example, the Marine, the U.S. Marine Corps are learning from combined armed operations in Latin America, and then applying that later on in the 1940s.

Versus, there's other militaries that ignored it and didn't learn from it. So,

you can look at, for example, the British Military in treating, you know, "This is the Colonial fight, and it's very different from the main line fight."

What are the lessons that you draw from this, in terms our own military organizations, and how do they learn through this period of active engagement? Not just regular warfare, but to the big regular warfare? And then the second question is, there's one last wrinkle in terms of urban operations that I don't know if you hit as much, but it can be -- it's a particular challenge for militaries moving forward. The urban environment is so difficult, not just because of, it's crowded, it's messy, multidimensional threats, multidirectional threats. But because of the digitized world we are in right now, you have no operational secrecy. Everything that you do, every move that you make will be live-tweeted. You know, even the Bin Laden Raid was live-tweeted.

And so how do we wrestle with that? And simply put, the entire world will have better awareness of what we are doing, maybe than our own commanders.

DR. KILCULLEN: Yeah. Both great observations. I would -- to comment on the 1920s, and what we might want to learn from that process of innovation. When a military force has been engaged in a particular kind of conflict for a very long time, there's a close alignment between experience, rank and seniority, right. So the people that are most senior in the organization are, by definition, the people with the most combat experience and they have an understanding of the environment within which the force has been operating. And so this is fairly intense, intellectual conservatives within the organization.

And you can see that in a lot of cases of -- a good example would be the British Army at the end of the campaign in Northern Ireland, where they've been doing the same thing, against the same enemy for nearly 30 years. And the Generals had all been doing it since they were Lieutenants, and they had a lot of experience, and it created a very high degree of consensus around the best way to do things.

We are not in that environment. There is, I think, a lot of anger at the

Senior NCO, Junior Officer level. There's a lot of experience of combat in Iraq and Afghanistan. There are a lot of people saying, "What was it all for? And why did we do this? And now look at Iraq today, and look at the people lost in 2006, 2007. Why did we do that?" And those people that are saying that are actually the people with the combat experience, because there's a whole band of people at the senior level, there is across nations, as to where that is. I think it's about the One-Star Level in the U.S. Military, where that level of combat experience tends to top out.

And so you get people that have a relatively ill-informed view of current conflict, but have a very high degree of seniority in the organization. And that's a recipe for, you know, intellectual ferment and debate, and it's a recipe for people to come out with a degree of anger and upset, and say "This is what we learn, and it's not what the organization seems to be learning, and we need to, you know, experiment, or think about those ideas."

So I think, that's not necessarily a bad thing, and in fact you have to embrace that process if you want to see any significant change. One of the reasons why, as you've said, the British Army, to some extent the French Army, didn't engage properly with lessons of World War I, is because they didn't allow, they didn't tolerate that high degree of internal debate. They didn't listen to a lot of the Junior Officers who had to leave before they could publish. Guys like J.F.C. Fuller, and Liddell Hart, who were some of the big theorists of maneuver warfare, wrote their works after leaving the military, because they couldn't get anyone to listen to them.

Here, we had the experience of Billy Mitchell, you know, actually getting court-martialed for proving that air could destroy ships. You know, so it wasn't just uniquely to the European countries. But I think to the extent that we engage with that debate and discussion, we'll be better off.

The other thing, is that if you want to see change, you've got to do it through experimentation. Because military operations are practical. They are not

theoretical, right. And I forget who said that, you know, in theory there's no difference between theory and practice but in there is, right? So, when you engage with people and you try to say, you know, I've got some brilliant new ideas for thinking about future conflict, you're engaging with some that's actively involved in a life-threatening endeavor.

And it's like you're climbing a cliff, and somebody repels, and hangs next to you comfortably offering helpful cliff-climbing techniques. And you're going to be like, "You know what, just let me get to the top of the cliff, and then we can talk about it." And I think that that's okay, that's legitimate. The way that you get over that is experimentation, and if you look at the militaries that adapted well at the end of last sort of interwar period, they were the ones who tried things in the field, in an experimental process, and actually validated with real troops and real data what they thought they were coming up with.

To your point on the sort of global information envelope within which we operate. I don't think that that's as bad of a problem for us in the USA as it is for most other nation states. I think it's actually generally to the advantage of democracies, and countries that operate generally in accordance with international law, and international humanitarian law, because it, in fact, makes it harder.

For example, you know, we have a Russian President telling us that there are no Russian troops in Crimea, but we have the Russian troops in Crimea tweeting and talking about it in Russian to the media, so it's pretty hard to maintain that fiction.

We have examples from the Arab Spring, where populations turn dramatically against their own government when the government shut down connectivity. So I think there's a fairly good degree, at least, of anecdotal data that suggests that more connectivity is probably better for us in terms of our operations. There are issues in terms of OPSEC, but we can manage them, and I think that what we've learned in Afghanistan, in particular, that we need to hold onto, is how to do that in a sensitive way

that understands local engagement.

The other things, the more technological thing, which is, urban environments bring with them all sorts of problems of multipath propagation and signal attenuation, for Wi-Fi and other systems. And when we operate in an urban environment, we may actually find ourselves operating with our backpack radios and so on, at an -- a communications infrastructure disadvantage to the local population, and who are there using embedded systems that they are familiar with, and in an environment that they understand.

And I think that's very different from the sort of information dominance that people talked about during the last interwar period when we were talking about the Revolution in Military Affairs.

Anyway, good luck with the rest of the conference, and I hope to engage with you guys again on some of the stuff. I look forward to reading the research.

MR. WRIGHT: Okay. I'd like to welcome everyone here to the first Panel after that terrific keynote by David Kilcullen. And this Panel is on Emerging Strategies For a Changing World. And we have four very interesting and diverse presentations on different aspects of this topic covering everything from violent extremism to the projection of air force, the interagency process and clause and position strategies.

What we're going to do -- my name is Tom Wright, I'm a Fellow here with a project on International Order and Strategy. And thank you to Peter for inviting me to moderate here today. And what we're going to do is just go down the table, have everyone speak for five to seven minutes each laying out the different aspects of their research and their arguments and then I will ask one or two questions and then we'll open it up to the floor for a question and answer session.

So we will begin with Kenneth Ekman who is a Federal Executive Fellow here at Brookings and with the U.S. Air Force and he's going to speak on imposing costs

on America's security competitors.

COLONEL EKMAN: Hi, everybody, good morning. I'm Colonel Kenneth Ekman, I'm the Federal Executive Fellow from the Air Force here at Brookings. And the product of my research -- I changed the title just to keep everybody kind of off balance here, is Winning the Peace Through Cost Imposition. As I dove into my research what I found is that that term is really used as a buzz word and as a dual remedy for both America's defense spending reductions and China's growth and military capabilities. As I dug further into my research what I found is that while some of the current prescriptions will hold up cost imposition it's kind of this inherent good, and while they're leverage a couple of fairly compelling historical examples there's not much there to put myself in the position of defense makers who I serve. There's not much there that allows them to sink their teeth into how do I take cost imposition and use my levers of programs, postures and operating concepts. So my paper is really targeted to them. So what I wanted to do today is pose five questions that guided my research, answer them as we go through it and then hopefully, you know, our defense decision makers and strategists will have better answers for themselves as they apply cost imposition as a strategy as a whole and certainly as they apply it to our competition with China.

So the first question is what is cost imposition? And for me what I came down on it was that cost imposition is a strategy whereby the U.S. improves on an existing capability strength so that a competitor will bear greater costs while still suffering from a capability disadvantage. Now what I learned as I got into cost imposition is that it's everything to everyone. And one facet of that deals with the time dimension relative to conflict. Cost imposition is used to talk about peacetime military capabilities and also talks about inflicting pain on an adversary, pain and damage in war. So I've stayed totally on the side of pre conflict so this is an antebellum discussion on incurring costs. So that's my first question.

The next question is have we been here before and I think the answer to

that is a qualified yes. So here's how the legend goes. Between 1969 and 1980 through America's investments in penetrating bombers, precision weapons and stealth we imposed disproportionate costs from the Soviet Union and in their response they invested heavily in surface to air missiles and up to 15 different variations of fighter interceptor aircraft. That's how the story goes. You know, I find it interesting as we leverage examples like that in that case that was a global competition with a true peer competitor for the United States. So when we talk about cost imposition and then China in the same sentence I think we're ascribing a certain if not current future stature to China as a competitor of the U.S. So we have been here before although there are certainly limits to the Soviet analogy that I hope you ask me about later.

The third question is what are the costs? And what I learned is that this is really a boundary problem and I think boundaries can either serve the argument or disserve it depending on how they're drawn. So here's an example of boundaries being too narrow. Let's compare the cost of one anti ship cruise missile to one aircraft carrier. I think we've just gotten too narrow there and we constrained the exchange. So I came down on really what you need to do is at least consider the costs of the totally opposing weapons systems and then draw the boundary as big as you can get while still being reasonably accurate. What I mean by that is include personnel costs, include the cost of the installations, include the enablers that allow those opposing weapons systems to go out and operate in a time of war, so as big as possible. There's also a temporal dimension to costs. If I as an initiating competitor introduce a new capability that renders obsolete my competitors previous opposing force I would say that those sunk costs that my adversary has expended now become obsolescence costs that are worthwhile considering in the exchange. I just cost him a lot of money to get better. There is also a non monetary dimension to costs. And what I mean by that is, you know, the military is not the only currency at play here. Certainly diplomatic, informational and commercial economic elements of power have their own currencies and their own exchange ratios as

you deal with a competition between nations. And so you've got to bound those and consider those because the military expenditures and force only underwrite the other instruments. So that's my third question.

The fourth question is how are they imposed, how does an initiating competitor make a program posture or operating concept decision that elicits from an adversary the desired response. And that's a dangerous game and it's fraught with unpredictability. Now certainly there's some classic theories of interaction, everything from rational actor to deterrents to spiral theories that gives some explanatory power on how we can hope that an adversary may respond. As there's a logic to arm racing and we're talking about arms here in a peacetime sense, I found arms race theory was actually very useful. And as you start looking at the composition of each competitor you can look at a competitor's perceptions and you can look at the evoked sets of standing history and long and kind of enduring paranoia even within the military and the society as a whole that could allow you to predict how a competitor would respond. Finally -- you know, up to this point I've talked about an exchange between two entities. The U.S. can't really afford to see competition that way because of our vast array of collective security agreements. So we have to think about third parties, both for the opportunities they offer us in enhancing cost imposing strategies but also for the liabilities that they represent. Cost imposing collateral damage could really happen if you forced a competitor to compete more than he or she could afford to do. So that's my fourth question.

Then finally orienting it more towards China, how can the U.S. wield this strategy against China? Certainly to use NSA Rice's terms managed competition with China requires both aggression and restraint. And I'll take maybe a tiny bit of exception to David Kilcullen's point that, you know, prevention is not our business. I think prevention is our business even as we build up a force in peacetime. Build it up too quickly and you may not like the response that you get from a competitor. So there's boundary issues here as well. And in the conflict with China I think competition

economically plays out on a world state. I think the military competition with China is much more constrained and primarily focused on Taiwan, the Taiwan Straits, the South China Seas, and maybe the Chinese littoral and eastern coastline. Now while most of that area is covered by water as an airman I'm happy to note that all of it is covered by air. And so as I look at how China is modernizing they're particularly modernizing in the areas of air, space and cyber. And so those they're modernizing because they're behind and those represent -- that represents liabilities for us or strength or weaknesses that we can exploit through waging cost imposition strategies. So the key contest that I look at over my research that are kind of woven through my paper, one the competition between Chinese strategic ballistic and cruise missiles against U.S. passive and active defenses. The next one is Chinese surface to air missile systems against our U.S. strategic attack assets. And then finally, and this is the only one that paired like capability against like capability was what I think is really an ongoing arms race in the Far East in the area of fighter aircraft.

So those were my five questions. As I kind of wrapped up my research I finished it with a sense that I think we can do better and do more with regards to coming to terms with military competition with China. Having said that though I also learned that cost imposition is not a cure all, that the term is often misused or at least poorly prescribed. Some ways that I would go about implementing it, first we'll have to institutionalize it and either we'll have to develop new organizations or organizations will have to perform in new ways. Next we need to orient most on our near peer competitor first, that being China, and attack those cost imposition opportunities that are the most lucrative not necessarily the most imminent. There is a -- it will take a certain amount of strategic consistency that's hard for us to initiate and refine a strategy that takes 15 to 20 years to evolve. And then finally I think it's going to take some intellectual honesty with ourselves and the many security constituents that we serve to acknowledge that there are areas where we simply can or should spend much more than our adversaries do

simply because of our role as a world power.

So those were my five questions and my answers and I look forward to any questions that that may prompt from you. Thanks.

MR. WRIGHT: Thank you very much, Colonel Ekman. And that was a terrific presentation. We now have our second presentation by Commander Gregory Knepper who will speak on -- who is a Federal Executive Fellow here at Brookings and with the U.S. Navy and he will speak on the topic of ensuring air power reach and persistence in the future operating environment, addressing vital fuel and refueling concerns in contested and permissive air space.

COMMANDER KNEPPER: Thank you, Tom. I've been here at Brookings for a couple of months now and one thing I've learned in my research is you don't want to follow Ken because he tends to set the bar pretty high. The last year the DOD reported burning 4.4 billion gallons of fuel. And to put that in perspective American Airlines in an average year burns approximately 2.8 billion gallons of fuel in their entire global operation. And the reason I raise that number is because it paints the strategic criticality of our fuel and refueling capabilities which enable our national strategy to conduct global operations. Now while the air domain didn't necessarily burn all of that gas it does account for a vast majority of that and because of that air power is absolutely critically reliant on fuel as its lifeblood. So for us to conduct our strategy whether it's to reassure and fortify our allies, whether it's to deter potential aggressors or whether it's actually to project power once we do enter into a state of conflict, the air power is going to be absolutely critically reliant on that gas. And so the concerns that I raise are how can we more efficiently manage our fuel systems and how can we ensure the survivability of those systems in a high end conflict? So what I tried to do is break the discussion into two separate domains. One being a passive environment for air power where we have a permissive operating air space and we can establish air supremacy, and the other being the high end conflict where we're going to face very challenging threats in the contested

environment, meaning the threats that Ken alluded to.

In the last decade or so we've been operating in a permissive environment and we've learned lots of lessons on how we can more efficiently engage our air power to support our folks on the ground. And I was going to get bogged down into a lot of discussion of well, certainly there's debate over with us leaving Afghanistan if we'll find ourselves in that environment again, but I think Mr. Kilcullen clearly illustrated that there are going to be conflicts and there are going to be challenges that we'll face whether it's in the littorals as he addressed, whether it's in crises situations like we see in Syria or Libya or even the Ukraine, or whether it's operating out in the global commons overseeing antipiracy operations or potentially in the arctic as they open up sea lanes as the polar ice cap melts. So there's certainly going to be opportunities where we're going to have to engage in that same role that we've been doing over the last decade which is that intelligence surveillance and reconnaissance missions. Now what we found at the start of our operations in Iraq and Afghanistan is that using a high end fighter aircraft to provide that role as a nontraditional mission they could do it but it wasn't exactly an effective and efficient operation. And so as we transferred into the UAV environment and found that unmanned aerial vehicles could provide greater persistence we saw that there was benefit in that. But the problem today is that we're not able to meet a 24 hour requirement and Admiral McCraven was here recently and spoke to the need for special operations forces globally. They require a 24 hour presence. And if you look at the other potential situations that could evolve over time having a manned aircraft that can fly for 8 to 10 hours refueled is not going to cover it, nor will our current inventory of UAVs which can fly for about 14 hours cover that. What we really need is a long endurance platform that can provide that coverage for an extended period of time, for days, weeks, possibly months at a time. And so some of those long endurance concepts -- there's currently a model which a solar paneled aircraft that can fly at high altitude with a 215 pound payload, something like that may be able to bridge the gap that we currently have in our

coverage to provide the persistence that we require in that permissive environment.

At the other end of the spectrum is the high conflict scenario. And what see now is that the threats that are emerging both, you know, modern and future projections are that these threats are going to be significantly more challenging that what we've trained to in the past. And where they really expand the problem is in the ranges. So now suddenly surface to surface, surface to air, and air to air systems that potential adversaries are developing may force us into a situation where we have to retrograde at a very extended range. Currently we can operate within those weapons envelopes because we're able to do so in a peacetime environment relying on deterrents to mitigate the risks, but the risk doesn't go away. And so what happens if we do find ourselves in a kinetic crisis? Suddenly our shore based assets that are fortifying regional allies are under threat and if that refueling infrastructure is destroyed we can't operate from those facilities Our sea based assets likewise they're operating in the littorals now but those anticipated threats that are emerging may force us to extend out to deep ranges. So the problem we run into is that our tactical fighters and strike aircraft which nominally can fly a 600 mile combat radius may be forced out to such a range that they can't actually reach the fight and they can't actually reach the targets that they're assigned to address and to engage. So suddenly the tanker community becomes a strategic asset and has a strategic vulnerability because now it's not designed to operate in that high threat environment. The current replacement tanker is advertised to be a medium threat survivability. And that may not quite be enough to get to the fight if we have to operate from extended ranges.

So the questions I'm looking at on the high end conflict is how -- we have the fifth generation technologies and the fifth generation capabilities to conduct the fight but we have to get there. So how do we ensure that there's survivability at our refueling platform? One option is to treat the tanker the way we historically treated high value assets that didn't have defensive capabilities, we would provide a fighter escort to

support them while behind the enemy lines you would have a fighter cap to absorb any threat that happens to get through. This may not necessarily be a practical role. We may have to take something a little more aggressive and that may constitute a tactical tanker because the Navy operates off of an aircraft carrier and they're constrained by space so we don't have the luxury of large wing tankers so we have to default to our tactical aircraft. In this case our modern fighter actually provides a dual role as a tanker. So maybe the solution is that we develop more of a tactical tanker mindset so we can ingress into that high threat environment in order to allow those fifth generation fighters to get to the targets and then to fight their way out and have the fuel on the backside to make it home.

A third consideration again back to the UAV discussion, the unmanned vehicles. That we can potentially have a fleet of drones which could provide that refueling capability and the dual luxury is that now you have a wall of potential and expendable drones that can ingress into that high threat environment, clutter the targeting problem for our adversaries and still provide that fueling bridge to get in and out as necessary. So those are some of the potential solutions I'm trying to investigate as I proceed through the research. Again dividing the air domain into those two distinct bins, that permissive environment where we need to really focus on the persistence to stay on station and patrol those spaces, those ungoverned territories that Mr. Kilcullen alluded to. And then in the high end conflict that Ken was illustrating to be able to actually get our limited range fighters and strike aircraft to the fight given the challenges of the ranges by the modern day threats that we're going to encounter.

MR. WRIGHT: Perfect. Right on time. Thank you Commander Knepper. And we have our third speaker is Lieutenant Colonel Kim Campbell who is the Air Force Senior Fellow, the Brent Schoolcraft Center on International Center at the Atlantic Council and she will speak on the topic of moving toward a regional interagency balance.

LT. COLONEL CAMPBELL: Good morning. So we'll change themes a bit here. My project is as mentioned is entitled, Realigning Priorities and Moving Towards a Regional Interagency Balance. So let me set the context here for my project. As the U.S. National Intelligence Council suggested in its 2012 report, Global Trends 2030, regional dynamics in several different theaters will have the potential to spill over and create global insecurity in the coming decades. In order to meet these dynamic regional challenge and threats, regional overseas presence is integral. I believe that the Department of Defense can help manage these risks and meet some of the challenges including those arising from reduced force structure by employing the existing geographic combatant commands as reassurance tools to mitigate regional concerns. However it is essential that the U.S. better integrate its national instruments of power. So with that as the context as defense austerity, the QDR rollout and international turbulence we created a task force to take a look at some of these issues. The task force involves several former senior U.S. government officials from the Department of Defense and the Department of State as well as respected thought leaders and experts. Now the intent of the task force was to conduct strategic analysis and make actionable recommendations of how we can come up with a transformed regional interagency balance for engaging with key allies and partners. How can we improve the efficiency and effectiveness of U.S. security cooperation efforts and advance U.S. interests at the regional level. Our task force is chaired by General James Jones, former national security advisor and we have also conducted several one on one interviews with former combatant commanders, ambassadors and chairman of the joint chiefs. The task force members help shape the report's scope and findings but obviously due to the, we'll say contentious nature of the topic, may not necessarily agree with all of the recommendations or conclusions. I'm in draft stage of the report at this time so we'll say that everything that I'm talking about is still preliminary and the task force hasn't necessarily had an opportunity to review those findings.

But some of the key insights and things that we're looking at exploring as far as recommendations, I'll talk about those. And I'll say that the original focus of this task force was primarily to look at the combatant commands. But based on the people that we had involved we have evolved the project over time and it's become a little bit more broad. And we believe that these recommendations will help U.S. adapt to emerging 21st century strategic and fiscal realities. You'll see that some of these recommendations may be near to midterm for the viability for accomplishing which should be able to be accomplished under their current structure of the Department of Defense and Department of State. They span the level of difficulty. Some are extremely hard and will take changes from behavioral norms and institutional norms and others may be more easy to accomplish. But with that I'll get into -- we'll quickly get into just some of the recommendations, the preliminary recommendations.

First and foremost is enhancing Department of State capacity within the regions to facilitate this whole government approach. This includes budgets, manpower, equipment, training, missions, obviously Congressional intervention as required for this approach. But we believe this will help us harness some of those lessons learned, some of the hard lessons learned from Iraq and Afghanistan. Second, we're promoting the idea that regional second assistant secretary should be empowered to set and coordinate security policy within the regions. This would require a rewrite of job requirements for regional assistant secretaries and also buy in from the National Security Council. We are also recommending that interagency legislation is essential and this would be legislation that could follow the Goldwater-Nichols model, the DOD Reorganization Act of 1986, and really what we're looking at here is that the best qualified are assigned to interagency positions and also taking a look at promotions and advancement in terms of interagency experience. Somewhat superficial some may believe but we also recommend that combatant command should be renamed. This is a contentious title or a contentious subject but there are suggestions that a renaming would signify the importance of a

whole government approach and reinforce our efforts to coordinate and integrate instruments for security cooperation. I also believe the allies and partners can play a more significant role in the geographic combatant commands. This will help not only strengthen our allied and partner nations' support for U.S. policy in the region but also potentially improve access to resources. We're recommending that there should be ambassador level civilian deputies at each of the geographic combatant commands. Currently only 50 percent of the combatant commands has civilian-level deputies. This civilian deputy commander would oversee and integrate security cooperation efforts with our allies and partners and could also act as the senior political advisor. Also within the State Department the senior political military advisors within the regional bureaus should have direct reach forward capability. Many of them do, however this needs to be formalized so that our -- within the State Department they have direct reach forward to potentially the civilian deputy position and the geographic commands to allow for better coordination and integration.

We also believe that geographic commanders should be assigned for sufficient time so that they can fortify those relationships and they also have sufficient time to prepare, ideally three to four years. Currently we're seeing about two to three years for the combatant commanders. Also believe that there are major efficiencies that can be gained by streamlining the geographic combatant commands. Currently there's a GAO study that talked about a 50 percent increase from 2001 to 2012 in the size of military and civilian personnel at the geographic combatant commands. And this doesn't mean completely cut the staffing at geographic combatant commands but what we're recommending is that we look at some of the organizations, specifically J2 which is intel, J5, strategy plans and policies and J8, resources and assessment. Through talking with many former combatant commanders and people that have worked at the combatant commands there are significant redundancies that occur between the combatant command headquarters and the component commands and so there's efficiencies that

can be gained there.

Also taking a good look at some of the support agencies, the combat support agencies such as DIA, Defense Intelligence Agency and Defense Logistic Agency and look for those redundancies there. And then finally a strong look at the contract support at the geographic combatant commands which has grown exponentially throughout the years, that there could be efficiencies gained there as well. I talked a little bit about it previously but the integrated prepositioning of supplies, obviously it has to be the same type of supplies but this could help synchronize approaches to crisis response and resulting in quicker reaction time.

Ad then finally another contentious issue, but a common map between Department of Defense, Department of State and National Security Council would enhance a whole of government approach. Yes, it's hard to decide which map is most appropriate but we're recommending that we take a look at all of the maps and find the best map that would fit. And that would help formulate this whole of government approach. With time and question and answer we also looked at some specific restructuring options. I won't get into them now but perhaps we can get into them later. These are complete restructuring of our geographic combatant commands and we looked at a wide range of approach, what we call an unconventional or out of the box approach which again requires significant changes to behavioral and institutional norms. And from that level basically wiping the slate clean, how do we do it again, to some intermediate approaches that may be more palatable.

But those are some things that I got into as well in this project. So really I think in summary to say is that the time is right to act now and to harness some of those key lessons learned from Iraq and Afghanistan so that we can adapt to the 21st century realities, both strategic and fiscal as we transition from this decade at war.

MR. WRIGHT: Thank you very much, Lieutenant Colonel Campbell. We now have our fourth speaker today, that's Colonel Joshua Burgess who's a National

Defense Fellow at the Washington Institute for Near East Policy and he will speak on countering the extremist awaking in the arc of entropy.

COLONEL BURGESS: Thank you, Tom. And as well I'd like to just take a moment to thank Brookings and, Peter, you've mentioned the importance of this venue for sort of showcasing the independent research that some of our federal executive fellows are undertaking. I think it's equally important to highlight the relationships that it actually enables between the Department of Defense, other federal agencies and the think-tank and academic communities. These are invaluable relationships that help us foster on our side a better environment, a better understanding of the policy environment and I think it also only enhances our ability to work together across interagency and in nongovernmental, extra governmental lines. So much appreciated on that front as well. And in fact David made me smile when he mentioned the "thinkfest" that maybe sometimes goes on but I think that's an important aspect of actually what we're doing here today so welcome to the "thinkfest".

My research as indicated in the title folks is on the proliferation of violent extremism principally in the 21st century but I really focused mostly on the last three to five years which conveniently coincides with also a similar outbreak in dramatic change which we've discussed to a certain extent today with revolutionary events that have happened around the world. And this is truly a global phenomenon. Whether you talk about the colored revolutions in Eastern Europe or the former Soviet states, also extremism that's out breaking in China or other parts of the world, it's definitely a global phenomenon. However because of my personal experience and also because of the fact that I'm at the Washington Institute for Near East Policy I've focused solely on North Africa and the Middle East which is sort of reflected in my title -- which I've already sort of given away the fact that I'm a victim of buzz words so I try to create maybe a couple of my own -- The Extremist Awakening, which is a carefully chosen title insofar as many of the causal factors of this rise in violent extremism are shared with that of the Arab

awakening or the Arab spring as we've seen. And I won't have to get too much into that because David Kilcullen was kind enough to cover many of those causes for me. And then the arc of entropy, the arc of instability is actually the more commonly used term. I would assert that instability would perhaps reflect a more temporary status whereas throughout North Africa and the Middle East due to a number of historical and current and future factors I believe that we're actually leading to an environment where instability will continue to grow and chaotic environment that we'll have to operate in will also be an entirely common factor.

So just beginning sort of the three principle areas that I'll talk about and that I've focused on. First of all those common and diverging factors that are causal and resultant from the Arab awakening and the extremist awakening. Second what some of the current and ongoing and past efforts have been principally by the U.S. government to counter violent extremism and its spread. And then thirdly an analysis and perhaps critique of those efforts and how we might be able to address this phenomenon better in the future. As I mentioned David was kind enough to look at sort of my three big categories for the causal factors which are shared for governance and all of the sort of negative factors that go along with it. I won't go into it since he did it already. A drastic demographic shift and coming "out of the mountains" couldn't have been a better title for that portion of my paper; I'll probably steal it. And then accessed information. There was actually an event just a couple of weeks ago looking at the future of land warfare and Army Major General Hicks mentioned another brilliant catchphrase that's out there now is the velocity of human interaction and the speed with which non state actors are able to communicate, organize. And its' really turned the table in a sense on who has got the monopoly on acting and forcing the bureaucracy and the heavy machinery of government and state actors to react. And we need to sort of try to figure out how to break that paradigm.

So where I believe those are the key factors that they share where we

sort of start to diverge then in this extremist awaking is what I believe to be one of the biggest threats immediately to U.S. interests abroad and here at home which is the proliferation of experienced and committed foreign fighters. If we look across the globe once again foreign fighters are no new phenomenon. Afghanistan, many portions of Africa, Libya and of course now most notably Syria where any number of different counts put people from over 70 countries who have gone into Syria to fight and are now at certain varying degrees heading back home to their original countries. And you're looking at numbers that could be as high 11,000 Sunni foreign fighters and perhaps 10,000 Shite foreign fighters as well. So obviously within North Africa and the Middle East this is predominantly an Islamist violent extremist phenomenon but as I mentioned before obviously it's not exclusively Islamist.

So moving on to what the U.S. has done in the past particularly in this region there is an interagency program known as the Trans Sahara Counterterrorism Partnership which was formed in 2005 originally as the Pan Sahel Initiative. So there was a recognition early on violent extremism is a growing problem and will continue to be. This is a very much interagency focus and with a varying degree of success it has been able to pull in the tools that the various U.S. government agencies have to form bilateral and multilateral relationships with in the region to focus on counter terror and counter violent extremism. However as we can see with the recent events in the Sahel there have been some limitations on the successes there.

Also the Global Counter Terrorism Forum which is much more focused on sort of the soft side of countering violent extremism has grown to be a well recognized international body that -- here we go with some more catch phrases -- is looking at multispectral and whole of society solutions to countering violent extremism. And whole of society I think is a rather apt term in additional to whole of government approach because when you really look at addressing the root causes of violent extremism you have to go beyond what the government can do. Local solutions will be important.

Working through nongovernmental organizations and civil society organization would be an important aspect to this sort of non military, non policing aspect of countering violent extremism. Unfortunately in both of those cases, TSCTP and the Global Counter Terror Forum, there's been perhaps a dearth of resources that's been allocated to those and they've also suffered from a lot of the bureaucratic problems that actually Kim referred to in our efforts to meld all of our interagency resources on a regional level. And so that needs to be addressed as well.

My recommendations, just very briefly, sort of go down to three fronts and they may be somewhat obvious based on my comments one second ago, more resources. I believe that the Global Counter Terror Forum is an absolutely invaluable asset to bring about international solutions at a local level and local solutions internationally. And we should be dedicating a great deal more resources to that. Just sort of on the top of a pencil eraser I would say $1 billion dollars over the next five years would not be incommensurate with the level of the threat. Next is more on the counter terror threat. When we look at this vast proliferation of experienced, dedicated, ideological fighters who are going to be moving back from Syria and Libya and other places back into both developing and developed areas including the United States where there may be as many as 50 documented foreign fighters -- or American fighters in Syria currently. We need to be very, very strongly focused on information sharing at the intelligence arena. And obviously this is a delicate subject right now as our friend Mr. Snowden, who spoke via internet at South by Southwest to a group in Austin, Texas just yesterday, would tell us we absolutely have some introspection and some analysis and some fixes to make to our intelligence sharing processes. But internationally and across borders with our partners we need to make sure that we're able to track and monitor what foreign fighters are doing once they return to their homeland.

And then finally as I think we mentioned that the special operations commander Admiral McCraven was in town recently and actually spoke on the hill just

this week about greater counter terror capacity. And that talks very much to our regional and bilateral partnering across North Africa and the Middle East to building partner capacity for not just military counter terror capacities but those in the policing realm. I think as we discussed earlier, we heard Dr. Kilcullen talk about the fact that the war on terror is probably a bit of an anachronism as probably are all wars on verbs or nouns as you talk about war on poverty or war on crime. The war on terror is something that we'd have to look at insofar as building partner capacity but really the policing aspect of it is going to be one of the more critical. And working with our partner alliances, whether that's NATO, the European Union, the African Union on a much more sort of cross cutting approach toward countering violent extremism. And that's it for now.

MR. WRIGHT: Great. Thank you, Colonel Burgess. I thought these were really terrific presentations and I really enjoyed reading the abstracts and listening to your remarks, all four of you. And I think what I came away with in a way that it really represented the diversity and multifaceted nature of the challenges that the United States is going to face over the next decade. I mean the topics range from, you know, China to the interagency process to violent extremism, which obviously has been one of the defining, you know, issues of the last decade. And I remember something Peter mentioned in a question to Dave Kilcullen in the last session where he noted that the war years in the 1920s and '30s were actually characterized by frequent crises and tensions and interventions. That it wasn't a time of peace as you would normally, you know, define. And if that's going to be true of the next, you know, decade or two it's really going to occur on a wide range of, you know, geographical areas and domains if your presentations are anything to go by and what we've heard, you know, elsewhere is anything to go by. So there will be frequent crises and tensions, you know, globally but with a much higher degree of interdependence and interconnectivity than it was the case in the 1920s. So we still live in a globalized world and in an era of globalization with lots of connection to some of the countries that are potential adversaries. But there are these

underlying, you know, problems. And as I try to think about it I think about it usually in groups of three, that there are three sort of sources of challenges to the U.S. and that order and the first is in East Asia which is a potential sort of para transition challenge by China in the maritime domain primarily. And the second is in the Middle East where we're seeing really a collapse of the regional, you know, order which creates, you know, chaos or, you know, unintended consequences that the U.S. and its allies have to deal with. And the third we've just seen very unexpectedly recently in Eastern Europe which is a more moderated version of a, you know, of a major sort of power challenge but more in the land domain.

When you try to think about those challenges particularly in Europe and in Asia, you know, they're not traditional military challenges. They tend to be sort of highly nuanced, you know, challenges. If you think about Crimea, the way Russia did that or the Scarborough Reef a couple of years ago, the way China sort of chucked that from the Philippines. But they don't normally cross the threshold of what we would recognize as sort of the kinetic use of force and aggression. They tend to be much more subtle and really hit the order at its weakest points.

So I've two questions you can -- either -- any of you could answer either or both of them and then we'll open it up to the audience for questions and answers. And the first is given the diversity of the challenges to the order and to the United States do you believe it is possible to prioritize, you know, and to pivot or retrench in specific areas or do you think that the United States will have to remain, you know, a global power and deal with all of these problems and not just the ones that you outlined but the ones that your colleagues outlined too. And the second which may be more directed a little bit toward Kenneth is given, you know, what you were saying about cost imposition, you know, strategies, given the sort of nuances nature of the challenges, and given that the adversaries are imposing costs on the United States, you know, as well how should we think about that sort of strategy in a peacetime environment given the type of crises that

we've seen over the last two years and we're likely to see in the future? So I don't' know who wants to jump in first, if there's any volunteers, otherwise I'll arbitrarily pick somebody.

COLONEL EKMAN: Well, how about I take your second question second and allow some of my colleagues to address the first one. Is that okay?

MR. WRIGHT: Yeah. Greg?

COMMANDER KNEPPER: Obviously that's the critical question because, you know, we are capacity limited. And so for us to address every single scenario, whether it's the valid extremism cases that Josh pointed out, whether it's, you know, the megacities and the littorals that Mr. Kilcullen pointed out, there are so many broad challenges that we don't really have a choice but to prioritize I think. Now we can certainly approach all of those locations and problems by enabling our partners and allies to address and that may be one avenue that we can expand the reach if you will. But from a U.S. national security perspective and from a constrained resource perspective given, you know, budget concerns I think we absolutely have to pick and choose where we can, you know, involve to a great extent and where we need to facilitate as best we can from a limited extent.

LIEUTENANT COLONEL CAMPBELL: I'll just I agree that there -- due to the resources we're going to have to prioritize. However I think a regional strategy is critical and to dealing with these threats and issues and concerns. And I believe that if we take a better look at how we balance our national instruments of power and we use them more effectively and efficiently then that will help with that prioritization as well.

COLONEL BURGESS: I'll go ahead and jump in and just echo kind of what Kim said. I mean when we look at prioritization it wasn't that long ago when the administration was pointing very directly at originally a pivot and then a rebalance to the Asia Pacific and in the aftermath of that we've had the vast majority of our diplomatic resources that have been firmly anchored in the Middle East. And while we may wish to

turn our eye in a different direction we're not always going to be able to predict and understand where the next flare up is going to be which really puts an emphasis on this idea of having a very strong and directed and really fairly simple strategic path that we're setting for ourselves based on what we understand the principle threats to be in the future. And, you know, as we get toward the end of the second Obama administration, you know, this is just an inherent part of a lame duck administration where you basically got an environment where strategy is starting to be focused on the people who are in the current administration, who are in the various federal agencies. And obviously looking ahead there's going to be a whole new team on board who probably will have some different ideas. So, you know, that is a gap that probably needs to be really specifically addressed in ensuring that our strategy is capable of sort of overcoming that transition as we look ahead to a very, very uncertain strategic environment.

COLONEL EKMAN: Thanks. Yeah, so just to kind of conclude addressing your first question, I think we can prioritize but I think we need to bend. And so certainly as I look at cost imposition one of the things that kind of works against it is as a global power we're kind of responsible to everyone for everything. But there are ways to subdivide it. So as an example Jim Steinberg and Michael O'Hanlon in a book that they have coming out on China, they attribute 35 percent of U.S. defense spending to the Far East and to kind of the China Security focus. And so when you start breaking the budge into pieces you can be more deliberate and more discerning in how you tailor those for specific problems. But I think the challenge of priorities and the fact that walls of bins break down really frustrate the ability to do cost imposition coherently over the long term. And that's why I kind of prescribed orient them towards your peer competitor, okay, rather than towards everyone. And then pick a couple of key most lucrative opportunities that you have the will and the capacity to see through for the long term over the 15 to 20 years that they'll take to come to fruition. And then for everything else you're kind of a generalist.

So to come to your second question, you know the idea of people imposing costs on, us I'm really glad that you brought that up because I think that's where the -- it's a useful lens to understand what's happened to us but I think that the term kind of gets -- kind of frustrates our logic and evidence in terms of where we go from here. And here's what I mean by that, when you look at military competition and what I looked -- I kind of try to divide it into a spectrum. And at one end I'd say that you've got acquiescence and a certain capability. And I'll give you an example there in a second. At the other end you have cost imposition which is really the extreme case of where we realize that capability advance and our adversary realizes a hardship or cost disadvantage. So on the acquiescence side I -- you know, so the suicide bomber weapon system is actually highly effective but the U.S. has chosen not to meet that capability symmetrically by designing our own suicide bomber weapon system. Obviously we've got some moral cultural boundaries to doing that. So we've acquiesced in that area. That's kind of an extreme case. I'm sure you can tear it down. You know, in other areas the U.S. competes at a capability advantage but it simply costs us more. And that's not necessarily a bad thing. I think we should look at why it is and that's why I kind of talk to the intellectual honesty part. I think we should look at ways to be more efficient. I think we should look at more ways to shift the cost advantage less in our adversaries favor. But simply put, you know, when we expended 39 percent of the total global defense resources in 2012 relative to a China 10 percent, you know, we have the ability to pay more and it works. So I think seeing specific capability competitions and placing more accurately on the spectrum allows us to get away from the more binary costs imposition or not sort of approach. Thanks for your question.

MR. WRIGHT: Thank you. Terrific. Thank you very much. Okay. We're going to go to the audience. I think what we'll do -- we have about 10 minutes so I think what we'll do is we'll take three questions together and we'll go back and if we have time then we'll go back for another round. So, yeah, just right beside you.

MR. SLOAN: I'd like to follow up on the Colonel's remarks just now about efficiency and cost effectiveness. One example I'm going to give which may illustrate your point and that would be what's happening in Israel when a Katyusa Rocket costing several hundred dollars is met by Iron Dome Interceptors costing $50,000 each. That's not very cost effective. But the long range solution to that is to get a more effective defense which I believe they are working on now which is laser directed energy weapons. Would that be a good example of how to meet that kind of cost disparity challenge?

MR. WRIGHT: Could you introduce yourself too? If everyone could just identify themselves.

MR. SLOAN: Stuart Sloan, American Jewish International Relations Institute.

MR. WRIGHT: Thank you. Okay. Again, right beside us.

MR. SCHEER: Thank you very much. Jim Scheer. Question regarding capacity. Is there any thought being given -- this actually applies to several presenters -- to this perennial but growing more important issue of public-private partnerships? It's been a big issue for Co COMS, it's a big issue in terms of capacity. You will find a bevy of DOD lawyers who will be always concerned about implied endorsement of private sector products as well as privileged acts as issues. But there are many examples we can cite over the last decade where private sector capacity actually was very helpful especially in economy of force theaters. Thank you.

MR. WRIGHT: Okay. And one more. Just behind you; yeah.

MR. ANDREWS: Hi, Bill Andrews from National Defense University. I have a question for Colonel Ekman. Thank you for that evocative talk and I'm sure a lot of people are looking forward to reading your paper. The long term nature of competitive strategies suggests that this may have a place in joint professional military education and sounds like you had an issue wresting the terms to the ground and understanding them

and sort of nailing them down. Do you think that that topic is covered adequately in professional military education and do you think it has a place and what would you do to change?

MR. WRIGHT: Okay. Thank you. So we'll start with you, Colonel Ekman, and then anyone else who would like to jump in on any or all of those questions. Thank you.

COLONEL EKMAN: Sure. So, Bill, thanks very much for your question. I really appreciate it. So I will answer the third question first, see if my colleagues have any and then could we just go in reverse order and conclude with Stuart's? Would that be okay? Okay, wonderful. So I -- is it adequately -- so I am a product of our joint professional military education and so I guess I offer that to say that recognizing what the narrative looks -- how the narrative sounds right now with regards to cost imposition is sort of peaked my interests and caused me to dig deep in those areas where I've been taught to date. And so certainly, you know, my exposure to theories of interaction, you know, spanning rational actor deterrents, spiral arms race, that helped me put the competition into perspective and get past the fairly narrow calculus that's being used sometimes to attribute relative advantage. I think talking about costs, I think we could do better to talk to teach money and colors and categories of money in our professional military education. And frankly I was more -- I wince anytime someone says costs because how much does something costs is one of the most difficult questions to answer in defense circles. And it was really just because my experience in OSD in cost assessment and program evaluation that made me more sensitive to how are you bounding those costs because I've been punished every day for being wrong, right. And so I think we can go further to link policy and resources. That would be my biggest suggestion, the nexus of policy and resources within our PME. So I'm grateful for my training but of course we can always do better as we train our officers. So thank for that.

MR. WRIGHT: Anyone else like to come in?

COLONEL BURGESS: Yeah, certainly. Just on the question of public-private partnerships -- and I think it actually relates a bit to the first question about efficiencies versus cost effectiveness, you known, the U.S. government is perhaps not known best for its efficiency and cost effectiveness so we probably have a great deal to learn from the public sector along those lines. And my thought particularly along the lines of this countering violent extremism portion is the fact that in large swaths of North Africa and the Sahel you've got extremely impoverished areas that have as we mentioned very poor governance and it's sort of a chicken and egg conundrum but you need to have some sort of economic development in those countries before you can start to break the cycle of poor governance and corruption and enable people to sort of step back from their existential problems and the failure of the government to provide basic services and move into a more prosperous sort of environment. And without having U.S. business interests involved in investing in that part of the world we're probably not going to step into that area. But that has to be done hopefully in a bit of a managed manner in which the government plays a role. And so, you know, that as far as the public-private relationship for me is sort of how it would work.

LIEUTENANT COLONEL CAMPBELL: Just to add a bit from that I think it's definitely worth exploring the idea of engagement with public and private partnerships. There are other countries that do it much better than we do in the U.S. I also think we need to leverage our allies and partners specifically but that we absolutely should explore the public-private partnership option. Limitations to that are obviously info sharing, specifically talking with the combatant commands. We still don't do information sharing very well with our allies and partners and unfortunately Snowden didn't do much to help that for us. I mean we made significant progress since 9/11 and we've unfortunately had to take some steps backwards. So that will be a limitation but I certainly think it's worth exploring. As we talk about, you know, what are we going to have to prioritize as -- or become the -- or maintain our global power position, we're going to be asked to do a lot

in the coming decades and so how do we go about doing that. And I think that we're going to have to leverage our allies and partners we -- worth exploring public-private partnerships. But even the QDR recently discussed that we're going to have to look at innovative ideas and creative ideas and do something different. And I think the time is now for that to think outside of the way we've always done things. And just because it's hard shouldn't mean that we don't do it. We need to look beyond the way we've done it before and try something new.

COLONEL BURGESS: Sure, I'll jump in and address the gentlemen's question concerning the directed energy example. And certainly there are technological advances that we have and that give us the asymmetric advantage in a lot of the warfare scenarios we find ourselves in. But the cost of that is extremely expensive in the development, the research and development and the creation of that technology. In the long run the use of that, you know, we can recapitalize some of those gains in cost savings but fundamentally it comes back to the issues of resolving the conflict rather than taking it to the kinetic level of the actual use of force. And so the real critical piece is developing that public-private partnership and encouraging economic development and governance and the other issues in those challenging environments, not only in Israel but elsewhere where we have those stability problems. Because without addressing the root of the problem we're merely focusing on the actual symptoms. And so, you know, the directed energy weapon while it would be a great technological advantage for us, that won't solve those concerns and it won't prevent those conflicts from erupting.

COLONEL EKMAN: So, Stuart, just to kind of finish with your question, I'm so glad you raised the Katyusha Rocket against the Iron Dome competition because that's quite similar to the Chinese Ballistic Missile and Cruise Missile capability standoff against U.S. passive and active air defenses. And so where I really -- so a couple of things on that. One, the room for disruptive technologies that change the balance, certainly we should strive for those and I hope that directed energy is a path to that end.

However, you know, in Mike Horowitz's book, The Diffusion of Military Power, taught me this is just because we can invent it doesn't mean we can field it. So I'm dying to see how that goes in fielding and operationalizing directed energy when it comes, okay. And that applies both for our adoption of a technology and also our adversaries. The other part is it caused me to kind of concede in the China example but also maybe here is that this is just a losing exchange. But the better strategy is something a disproportionately expensive strategy and that we'll really need to concede that costs are going to be imposed on us. Work for efficiencies where we can but not exhaust all of our resources trying to level the capability balance. So it's essentially taking some losses where we have to. That's where I kind of came down on that. Thanks.

MR. WRIGHT: Thank you. I'm sorry, we're out of time. Thank you to our four presenters today for really terrific presentations. Thank you to all of you. I think we will now adjourn for about eight or nine minutes, is that right, and convene back here at 25 past the hour. Thank you. (Applause)

MR. SINGER: As we were designing the conference, you can very much see the interesting way that it's come together in terms of the topics on the panels, dealing with all of these different game-changing forces out there, new responsibilities, trends, etcetera, and then the two keynote speakers, I think, very much capturing the bookend of the forces that are reshaping warfare today, in particular, the wear of warfare, hearing from Dave Kilcullen about how increasingly we're moving into more and more urban environments and then, in turn, another shift in the wear, which is to a domain that literally didn't exist a generation ago when you talk about cyberspace. As late as 1982 the word itself was something merely in science fiction.

And so, it's a great honor to introduce Lieutenant General Edward Cardon who will speak to this issue today. He's a 1982 graduate of the U.S. Military Academy as well as a graduate of the National War College and the U.S. Naval Command and Staff College. Over the course of his career, he's served in a wide variety

of roles and responsibilities, including multiple deployments to Iraq, starting out as Commander of an engineer brigade, then the 4th Brigade Combat Team, both within the 3rd Infantry Division, and culminating as Commanding General of the 2nd Infantry Division.

In addition to these roles, he's carved out a key identity within the force in terms of guiding future thinking and leader development within the Army, including as Deputy Commandant of Army Command and General Staff College and as Deputy Commanding General, Leader Development and Education at the Combined Arms Center at Ft. Leavenworth. And, it's this combination that's made him such a perfect fit in his present role as Commander of U.S. Army Cyber Command, where he is leading Army efforts in certainly one of the most dynamic but also challenging new arenas in everything from organization to operation, and in many ways, by its very nature, helps define the changing forces that are shaping 21st Century warfare. So, please join me in welcoming him onto the stage. (Applause)

GENERAL CARDON: Well, thank you all very much, and, Peter, great to see you again, and thanks for the intro. I was going to bring the book that Peter wrote, but my wife's actually reading it right now, and she's in Houston, Texas, and when I went to get it this morning I was like, oh, because she said that I need to better understand what you're talking about in cyber. And, I think that book is going to be so helpful to getting us on a common language that will be critical for this, an education of the force.

I always like to start off with -- the word cyber often conjures up a negative image. We think of attacks. And, we fail to account for the advantage in information technology that allows us to do things that we'd never even thought of or were in science fiction, and the way I describe it is the connectivity's better than ever before. Even my 97-year-old grandmother has a Facebook page. Why? Because she wants to see pictures of her grandchildren and great-grandchildren.

You have access to information that we only dreamed of. Think about

the number of Google searches every minute. And, then the speed by which you can get. How many times when we want to find something we just Google it? And, then think about what that's done to the military. Whereas, General Odierno has said a company commander today has access to more information than he had as a division commander in 2003 in Iraq.

But, with all of this comes vulnerabilities, and I describe it like this -- so, first, there's a complicated nature to it, means there's lots of things, and the challenge is things keep getting added every second. And, then they get connected, and that connectivity's on a logarithmic scale, and so it's even more connected than ever, and as you do that, you realize there's a tremendous amount of vulnerabilities. And, then there's this new part, and that is the access is dropping, and what I mean by this is before you had to be a hard software or hardware engineer to be able to manipulate the space, but now you can download a lot of this off the Internet. I mean, one of my favorite -- just because it has a really cool name, you know, -- Hyperion Gray PunkSPIDER, and you've got to ask yourself how they invented that name, right? But, what it does -- it can search any URL for known vulnerabilities.

Now, I'm sure when they designed this, that was initially to help people, but you could also see how this could be used to script an attack. At ShmooCon, Mazcon demonstrated they scanned the entire IPv4 IP space in 6 to 12 minutes. When you just think about that kind of technology, that's amazing. At the latest one, they did Port 5900 which deals with virtualization, and it returned hundreds, thousands of pictures of unsecured devices. None of that required a software engineer or hardware engineer. It just requires someone that can navigate on the Internet.

So, the threats to the space are growing, and so first they started off as hackers and opportunists, and then you have the criminal element, but the hackers and opportunists didn't go away. The criminal element gets put on top, and then you have, you know, what we call now advanced persistent threats, and it just continues to become

bigger and bigger to the point now that cyber is widely recognized as one of the top threats for the Department of Defense.

So, as the threats are dropping, what's challenging this is the commercialization of this. You can rent botnets. You can actually go on the Internet and ask for hacking capabilities, and the commercialization of this and the nexus with criminal activity makes this extremely adaptive. When you look at the target attack, -- and I think it was Wired Magazine that laid this out quite well -- so, you have a young teenager write code that was bought by a criminal element, that was adapted to run an attack that affected tens if not hundreds of millions of users, that on the front page of USA Today you see that target lost 10 percent of their customers. Now, that's a commercial application. What could happen in the military space?

And, so, the challenge is it's no longer good enough to rely on a perimeter. You have to have a defense in depth. Now, the way I like to describe this domain -- and it is a domain -- and I think of the domain in terms of land, cyber, and human -- and to do that, David Kilcullen, who I've worked with a lot on my tours in Iraq -- think of a wide area security model which is a security model that protects populations. Visualize that. And, inside a wide-area security model, what you have is you have nefarious actors of all types that impact the security of the population that challenges to find them.

So, we talk about operating on cyber terrain. Now, I want you to visualize a map, maybe just visualize a map of this city, and you see the roads and the intersections and buildings and people. Now, I want you to take that map and think of the roads as transport -- fiber, satellite links, wireless. Think of the intersections as routers and switches, and think of the buildings as endpoints or people with mobile devices. Now, ask yourself in that model, if you had to go back to your wide-area security model, and you knew the threat was here and you are here in cyberspace, how would you maneuver to take some sort of action?

So, first, I'd like to talk about the maneuver side. You have to get through the routers, switches. You may have to get over closed access space, but what I'm saying is, for land, for Army officers, they see the instant application to our land doctrine where you have war fighting functions, like intelligence, reconnaissance, surveillance, maneuver, fires, protection. It all applies. And, so that is a nexus right there between cyber and land, and then you have the human side, because cyber's not the sake of cyber. Cyber is to achieve an effect against some person, either change their behavior or you're doing something to the device, or you're doing -- and that is the human side.

And, so how do you do this? That part is really being worked, so there's a real nexus between land, cyber, and the human domains. Human domain isn't recognized as a term. I'll just tell you that I'm using that, and when I use those examples, I do not want to exclude the Air Force or the Navy. I just use that because that's the way I normally talk about it in terms of the Army. It all applies.

So, with that kind of analogy, next in terms of terminology, I normally have to describe the frame that the Department of Defense is using that they describe cyber, and they describe it in terms of Department of Defense information that works defensive cyberspace operations and offensive cyberspace operations. I'm not going to give you a lot of definitions, but think about it like this -- the Department of Defense information networks -- think of it as network focus threat agnostic. That's the traditional way we do things -- build a hard perimeter. In the words of my banking friends, a nice hard shell but a creamy inside. If you get through the shell, bad things happen.

Then, you have offensive operations which was inside NSA and then with Cybercom there's a component, but much of that's in the classified world, but what is important to remember about that is what defines offensive operations. It's defined not by capability but by the threat. That's what's important for the Department of Defense. And, I think the greatest invention is this term defensive cyberspace operations, because

it's a different way of approaching the defense, described as mission focus, threat focused. So, now, this is talking about hunting inside your own networks.

So, we're increasingly defined by the network in terms of society -- our society's getting increasingly wired -- and so is our military, especially with downward budget pressure. Do more through the use of technology. Do more through connection. So, cyber is even growing more. Now, when I talk about cyber, I frame this in terms of people in organizations, processes and operations, and technology.

So, first, I'd like to talk about people. The first rule is, today, no one knows all code or hardware. It's impossible. Therefore, it is a complete team sport. It's full of collaboration. Second is talent matters. When I was with Google, they describe them as supercoders. My XO describes it as Neil out of The Matrix. That's a supercoder.

But, what I'm really talking about here is -- because I've asked this question -- what's a supercoder. A normal software engineer might write something in 50 lines of code. They can do it in five. They can look at code and almost tell you what it does. These people are out there, and, so, these types of people are hard to find, and when you find them we have to hang onto them as much as we can. And, with that, character is essential. We often talk about competence, but think about what prevents people from doing bad things has to do with your character, and, so, we're looking for a big part of this.

Now, think about how fast technology's moving right now, and then consider someone going into information technology as a freshman. By the time they're a junior, what they learned as a freshman has been overcome. And, when I've been out with all the big tech companies over the last 6 months, we are living in an absolute revolution in information technology right now. And, I describe it in three big bins; mobile and wireless, advanced computing, and cloud and virtualization. When you put those together and a little bit of technical talk -- when I talked to one of the lead software engineers for Google and asked them to predict what the environment would look like in

3 years, they said it's almost impossible to predict, because in the seven layers of the network stack, every layer is under transformation and some are converging based on the three technologies I just laid out.

So, what are the implications to us? So, when David talked and talks about the, you know, these rural areas, they don't have all this legacy infrastructure. They buy the latest devices. Every one of us -- normally, with the military crowds I talk to, I ask them how many were down range, how many who had a commercially-procured cell phone for the country that you're in, and it's almost 70, 80, 90 percent, and when do you use it is when the other communications don't work or you need to talk to the population.

And, so, swinging back around to people, how do we educate, train, and develop them? And, we're doing a lot of work on that. The Army just stood up what's called the Army Center of Excellence, which is our institutional way that we go after training and education, and I think we're going to get some great output there in terms of leader development and talent management.

Now, I described a seven-layer network stack, but many people will tell you there's layers eight, nine, and 10, and that's policy and regulation. This is way behind IT technology, way behind. And, so, I describe it as technologies outstripping our existing laws and policy, and, so, some have just launched themselves into the space and some use existing law and policy as a means to not move forward in this space.

I think President Obama's speech that he gave, talking about the challenges with the advances in information technology and the protection of civil liberties with how we develop as an intelligence community and as a defense community, is really instructive to read, because it's institutes like Brookings and the other think tanks that are going to have to help get these laws and regulations right that will enable us to have freedom on cyberspace and protect the country.

The last thing I'd like to talk about -- and Peter and I were talking about this a little earlier -- is, when you talk about technology, you end up with a lot of questions

about acquisition, and there's study after study after study on acquisition reform, and many of you in this room know that we don't have a lot of acquisition reform. We do have a lot of acquisition vehicles that have been developed during the wars that may be applied to this, but what I would argue in this space is, even though you can -- you know, if you pull out your iPhone and you look at a lot of the technologies on it, a lot of those technologies were developed by the government, right? Position location, Siri -- a lot of these technologies are developed by the government, but now, when you're out at Silicon Valley, the competitive nature of the environment is our challenge is to stay abreast of this space. Going back to the seven stacks and the transformation on those stacks, how do we stay current? How do we stay current with companies that -- I'll use an example -- fiber optic -- so, initially those were just light packets all marching in a row. Well, they've already figured out how to do optical packet switching, and that's getting better and better and better which is handling more and more data which is needed because the Internet is expanding at a rate now, estimated by Verizon, at about six times a year which it's been doing the last two.

So, when you look at the Internet at large and you look at the Department of Defense, the Department of Defense is a small customer on this, and so, over time if you just look at it, the technology is going to be racing really fast and our challenge is to stay current with it, and to do that, we have to have the agile acquisition processes, but I go back to my first point. What's more important are the people. Because, when you live in a competitive environment and the competitive environment is under constant adaptation, then we must have the best people possible, because at the end of the day it's people that are going to make this happen.

The other thing that we have to understand with the technology -- and I think one of the problems with the authorities and the processes -- is it's very hard to describe risk in cyber, and I often use a military example. As a division commander -- well, that would be in Korea. I'll use an example in Iraq. A BCT commander in Iraq -- if I

wanted to use a JDAM target, there's very defined rules on this -- circular errors of probability, buildings -- there's an entire process. And, if there's too much risk, it goes at higher and higher levels, and eventually if it's too high even go all the way to the National Command Authority, but that's very well defined and everyone understands it.

But, when you start talking about cyber, we often can't describe the risk, and that's what prevents a lot of its use in certain ways. And what I mean by that is, you know, how far will it go. When you do this, will it be completely compromised. What I mean by this -- and I want you to think about this in a defense way -- anything that you use out there gets reverse engineered. All you have to do to see this is just look up Stuxnet and then look at the variations that it had been built off of. So, once something goes out, you can't ever get it back, and, so, how do you describe all this in terms of risk for commanders that will enable operations in cyberspace?

So, when I looked at the title of this conference -- and it talks about the interwar years -- I like the title, the Challenges. I don't really feel like I'm in a war year, based on what I get on my classified and seeing the paper every day, right? I feel like I'm in the middle of it now, but it is extremely adaptive space that we will and continue to operate in, and we're going to chart our way forward on this.

If you had to ask me -- kind of wrapping up here -- what the gaps are, I would say our current information architectures are not cyber robust. The way I describe this is we have to be able to operate while compromised. I use Target as an example. I use banks as an example that I've been to. Target as an example -- when Target got attacked, did they bring their websites down? No. They remediated what they could, they fixed what they could, and they tried to stay in business. When you read about the attacks on the banks, did the banks go down? No. They remediate what they have, they fix what they can, and they stay in business. So, increasingly, there's this idea that we're going to have to manage the risk inside the network and manage the risk.

The second big challenge, I think, that's in front of us is cyber training

and readiness, and what does that really mean, especially in an accelerating technical environment. The third one I talked about is how do you measure risk, you know. I think there's a lot of work going in the commercial sector on this, like how much do you buy, how much do you not buy. These are risk assessments, and, you know, many documents now outline how much companies are really starting to spend on this. I think more and more leaders are recognizing this is too important to be left to the information side and has to enter into the operational channels.

And, the last thing -- what are the authorities and the operating concepts, you know. When you're being attacked as a commercial entity, what are your recourses? When you're being attacked as a Department of Defense entity, what do you do? And, so, those there -- what I want to close with is, I cannot say how excited I am to be here. I cannot -- thank you, Peter, very much for the work that you're doing to educate people on this extremely important domain, because I guarantee in the next conflict -- I would argue in conflicts the last couple of years -- I forgot this book here. This book here I bought is called the *Tallinn Manual on the International Law Applicable to Cyber Warfare*. This is a book that's already trying to capture internationally what are the laws of warfare for cyber.

So, when you think about this, the reason Tallinn's interesting, after their attack by Georgia, I mean, by Russia, alleged, they have a different way of looking at it. They lived through it, and, so, when you go to them it's real. You go to others that have not ever experienced an attack, it's less real. But, all of us in this room are -- if you have a device, you're being scanned every day. The question is are you protected, and the same thing applies to the Department of Defense. So, I think I'll stop there, because I think we're going to have a pretty robust question and answer period.

MR. SINGER: First, please join me in a round of applause. (Applause) So, again, what will happen is the General will call on you. Please stand, wait for the mic, introduce yourself, and a final reminder that, here, questions end with a question mark. So, please, go ahead. Sir.

MR. HUMPHREY: I'm Peter Humphrey. I'm an intel analyst. We have an administration that seems increasingly unlikely to use kinetic operations, and, therefore, the option of a serious cyber attack against Assad's air force or Putin's Crimean operations would be a good option for somebody who's trying to avoid kinetic operations. Did that come up -- I mean, I've certainly heard nothing about it actually happening, so I assume that National Command Authority turned it down. Can you shed any light on that?

GENERAL CARDON: First, that's in the classified operational stage (inaudible) talk about, but, here's -- oh -- it's in, you know, classified operational space, and then we'll talk about that. But, here's what we've recognized in the department. So, cyber's a domain and it must be integrated with the other domains to provide options to the National Command Authority. Then, those options have to be presented. But, the challenges for cyber when you present -- you've also got to be able to present risk, and as you go forward these are debates -- we're at the front of this, and I think there has to be much more open debate on what are the rules for cyber down the road.

MR. HUMPHREY: Risk (inaudible) blowback.

GENERAL CARDON: There's all kinds of risks. Risks and blowback, risks and compromise, intel loss-gain, operational loss-gain. All of this is completely undefined, and, so, I think we learned a lot in watching other -- if you just look at the open space on Stuxnet, it's very interesting to watch, because it was an actual attack that's been pretty well-documented. You can see how it's been adapted or adjusted, and then if you use it how will that work. So, I don't want to constrain it to there. It's how do we use cyber, and often we think about, you answered, in an offensive way, but we have a lot of challenges defensively inside the country, and then, of course, we don't have authority for that. We only have authority in the .mil domain, .gov is DHS. So, we work with them because the challenge is we have this all divided up by organizational structure, but it's one Internet, you know. We have it divided up, like somehow this is all

different. So, we have a lot of work to do in this area is what I'd say.

Now, the good news is I think there's advances in this only because a lot of capability is coming on line, and increasingly we're getting intrusions, and as we get more intrusions, that's just not in the military side but in the civilian sector. I think you're starting to see unprecedented information sharing, but the challenges, as General Alexander just laid out last week with cyber security legislation and how do we protect companies that do information sharing, all of this, I think, is at a place where, you know, institutes like Brookings and others can help shape this as we go in the future. We're not going to get it right, I don't think, from the get-go. This is going to be an evolution. I think we're at the very front edge of really, truly understanding this domain. Sir -- the 2nd one -- right there. I've got you next.

MR. REUTER: Stewart Reuter, Navy League. How do you compete for young talent. I've got a grandson who's going to get $1,000 a week as an intern for a local company here. He's a college sophomore at Stanford. Are you having to buy in young civilians and think about six-figure salaries, or can you do this within the military structure?

GENERAL CARDON: Well, thus far, we're using the military structure, but, you know, we're just growing this force. The good news is once they're in they like being in where they're at, which some people would say, well, they'll get out and work for all kinds of figures, but if you talk to true software engineers, ones that love this, -- you know, I had this software engineer from a name company, but he was telling me this joke he had with Steve Jobs, and he basically said, you know, you know you have a true software engineer when you're learning it and you lean over and you say this stuff's so great, I'd do this for nothing, but don't tell anybody, alright. And, so, a lot of times the people we're looking for are not inspired by money. They're inspired by doing something that gives them a name, a reputation, the fact that they solve what people said couldn't be done.

So, we're learning how to manage these people, right? But, what we recruit for an infantryman is not going to work for one of these soldiers. Now, about a third of my force will be civilian, so, I'll lay that out -- well, correction -- 30 percent of my force will be civilian. So, right now, we've had much better luck recruiting in-service. We seem to have a better rate of passing, and I think a lot of it has to do with acclamation to the military, but, once again, this is the importance of the Cyber Center of Excellence and what we've learned over the last couple of years. Once we get in, then our challenge is how do we keep them current, and, so, we have training with industry opportunities with a lot of the high-tech companies, and that, I think, is going to help us a lot. And, I also think it helps us without connectivity. Yes, ma'am.

SPEAKER: Thank you, General. My name is Jeanie (inaudible), advisor, Vietnamese-Americans. I thank you for your service. You made a statement that impressed me. You said I'm in the middle of the cyber world, I would say, now, right? We're not in the war. So, may I ask who are our adversaries? Who do the -- and also do we have a deterrent capability? Thank you.

GENERAL CARDON: So, yeah, I said cyber war. I probably should have said a cyber conflict. I mean, we could get into a description here, like what do we mean by war. I don't want to go down that. This is not a conference on that. What I would say is every day there are people trying to do things that we would all characterize in this room as either some sort of malicious activity, criminal, or intelligence, or advanced persistent threats for some unknown reason. And, so, what I'm saying is that's ongoing right now.

When I go to the big banks in New York, this is consuming more and more of their time. Insider threats are also challenges, you know. What you have now -- see, we have something that we normally haven't had which is -- for the insider threat problem it goes like this -- you actually could have one person bring down a multibillion dollar company, throwing thousands of people out of work. That's possible. That would

have been impossible to fathom 20 years ago.

But, now, how do you work with this? And, that's what I think all of us are wrestling with, not just in the military but commercially. Like, when a bank is receiving a denial of service attack, what's their recourse, other than to sit there and take it? And, this is -- I don't have the answer. What I'm saying is this is already happening. This isn't something that we have time to think about. We're in contact now, and we have to work our way through to the future.

Peter makes a great point in his book, where he says, you know, often the threat is overstated, and I agree with that statement. But, I would say the threat is growing and that people do things just because they want to experiment, you know. The idea the other day where -- I can't remember if it was FireEye, but I can't remember who released the report of this latest botnet where a smart refrigerator was being used as part of it. I mean, can you -- who would have thought that I'm going to hook up a smart refrigerator to launch an attack. I mean, who dreamed that up, right? So, my point is this is what I mean by it's a very competitive space, and we have to figure out how we're going to operate in this space. It's not going to go away.

There's a lot of discussion on what deterrence means, and I would describe that deterrence goes back to risk. So, you know, and I think the definitions -- there was a tremendous amount of work done on nuclear deterrence, but, you know, one of the big problems you have with cyber is attribution, like who did it, and that is very hard sometimes to prove, especially as the technologies continue to improve in that area. Okay. Let me start all the way in the back and then, one, two, three, four. Okay?

MR. WALLACE: Hi. Ian Wallace. I'm a cybersecurity Fellow here at Brookings. I want to pick up your point about organizing 21st Century capabilities within 21st Century structures. David Kilcullen earlier suggested operational experimentation is the key to developing this. It's not clear where that's going to happen in a joint context, particularly in relation to how cyber fits into the joint fight. How are you working through

these issues with your other service colleagues?

GENERAL CARDON: So, for the Department of Defense, cyber was born joint. See, that's the difference between the way joint has been done. Otherwise, we had formed all the service capability and then we tried to (inaudible) it into a joint construct, where, here, you know, I work for General Alexander, and, you know, I'm good friends with Admiral Rogers, and Stewart from the Marines, Kevin McLaughlin from the Air Force, and we meet every month. We are having, like, unprecedented sharings. We exchanged teams. I have Air Force teams and Navy teams working for me.

This force -- Cybercom is 3 years old, and, so, to me, one of the advantages -- it's born joint, and, therefore, I think, the experimentation's joint. I'm doing a number of initiatives with the Air Force right now. I'm doing some with the Navy. And, what I've identified over the last couple of weeks is that our experimentation plan -- we need a lot of little experiments. This is what I kind of gleaned out of my most recent visit, because one of my favorite questions is about innovation.

And, the challenge for the military is that generally they describe a contract where only one in 10 succeed, but, see, it's hard for me to get money from the department of the Army when I say, look, I want to run this experiment, but nine of them are going to fail and I already know that, but I need X amount of money. That's not the way we operate. Then, we want every program to succeed.

So, I'm working on how can I carve little pockets of experimentation out of the force that I have and then work with the other services as we go forward, and what helps this space it's extremely collaborative in team, because no one can do this by themselves. I mean, if the Navy has a problem, they share it immediately with the Army, Air Force, Marines. We all get it. We all get it right away, and we all work it. So, I think, in a way, having worked in a number of different joint commands, I think, that there's some unprecedented information sharing between the services here. So. Okay. Right -- you, then with the red tie, and then you, sir. Okay.

MR. WELCH: General, Jon Welch, National Security researcher. You talked a little bit about recruiting and some of the challenges. I guess you're not having any challenge bringing people in, but could you talk a little bit more about managing the troops once you bring them in, because this is a very highly-specialized skill. You said one of the gaps is training education. So, what about the career for those individuals. How are you going to keep the 70 percent you said that are uniformed soldiers in the command?

GENERAL CARDON: So, first, all cyber for the cyber mission force -- that's laid out by General Alexander -- it's all trained to a joint standard. So, my forces are trained to the same standard as the Navy's, same as the Air Force. That's one. We're working for what is the environment that has to surround them. So, I'll use a Google example, but they're not the only ones that do this. So, Google's famous for their cafeteria, right? Everybody says, oh, you know, that's -- but, the reason is they recognize that 30 percent of their new ideas come out of that cafeteria, and what they recognize is that the more places you can create for people to gather, innovation happens.

So, as we start to build our headquarters and our structures that support this, I'm looking at maybe we don't have a traditional building like this that has the same color walls, all this. What we need to do is build collaborative space that encourages collaboration, and maybe that's the way their work center should look, too. And, it's things like this that I think are going to -- they're small things, but they could really, really help us.

I think eventually we're going to have to figure out how we retain them. I mean, normally what keeps them in is what they call working on mission. As long as they're working in that space, they're very happy. What they don't want to do is go out and do something other than that, which, you know, the Army likes us to be broad, and in this case maybe we define it as narrow. And, in my discussions with the Chief of Staff of the Army and others, this is why we're looking hard at maybe forming a branch, because

if we form a branch then we could keep them and manage them independent and not have to do this, that they would just operate inside this space. And, I think that's where the Army's going to go, but no decision made yet.

And, then, so far, we haven't had to use a tremendous amount of financial incentives, and I don't think that's what we should bank on anyways. We're never going to be able to compete that way with the private sector, ever. We've got to have other ways to do this. Next question. I'll be right here if you want to --

Okay. Go ahead.

LIEUTENANT COLONEL WRIGHT: Hi, General. Lieutenant Colonel Parker Wright. I'm the Air Force Fellow at the Center for a New American Security. Sir, I'm wondering if you could speak a bit about the command and control structure that we have for cyber forces, specifically as it relates to our theater cyber forces. Do you feel as though we have a structure with the appropriate command relationships that will give a combatant commander assured access to cyber capacity while at the same time protecting the Cybercom oversight responsibilities?

GENERAL CARDON: So, we're still working on -- there is a command and controls contract now that works. Is it the right one for the future? I think we're looking at that. Recognize of the command and control environment that was set up was set up as Cybercom was set up, and now the more that we learn, there's some big questions, especially on the defensive side, because right now, because of the way we're set up with services and COCOMs, when you get into Side A -- I'm sorry -- COCOM (Combatant Commander) -- when you get inside a combatant commander's space, you could have four services operating with different networks, and the way the current rules are written, the services have responsibility for those networks, but that may not be the right way to manage this.

And, you know, I've had some discussions a lot with the Air Force, actually about is there a better way to do this. I think the greatest problem that we have

now in the entire command and control network is what I call cyber planning, that we just don't have -- I often describe this with the senior leadership of the Army -- is we lack imagination in this space.

So, it's really how do you link your capabilities to achieve objectives in a way that we can actually refine it to a degree of specificity that can deliver. You cannot have some broad open statement when you think about the specificity that you must have for cyber and, linking back directly to what you said, it's linkage back into the intelligence community to make sure we're following the right laws and authorities. And, that understanding is nascent.

So, last year Cybercom ran a cyber summer school like thing, and we are doing a number of educational initiatives to work this kind of mid-tier with the cyber planning. I think, once you see that, you're going to see there'll be challenges with the structure and that will start the debate on what should the next evolution of the structure look like. I personally think that everything in cyber should be relooked at every 2 to 3 years. We should hold nothing sacred. Because if we do that, then we're going to have the innovation we need. If not, we'll get trapped in something and we'll only find out we're trapped when something bad happens.

MR. SMITH: General, Andrew Smith. I'm an independent researcher from Australia. You've mentioned that you think the regulatory framework that you're working in is lagging in your operational capability considerably. How well specifically do you think you understand the law of armed conflict implications of what you're doing, especially bearing in mind you said you think 30 percent of your workforce will be civilians?

GENERAL CARDON: Yeah, so, I have a robust legal cell, right, and I'm constantly learning this space needs a lot of work. There's no consensus in this, I would say. That's probably not the right way to say it, but, just look at how hard it's been in the United States to pass cybersecurity legislation that's supposed to help us with this. And,

I don't always view a delay like that as bad, because the debates are really important, because once that's sorted out, then we're going to have clarity and we're going to move out, and we don't want that to be wrong. So, you know, I don't always do it, but what I do worry about is, as more capability comes online, do people understand how to use it. I spend an enormous amount of time -- I mean, General Alexander is very clear to me, right, and you better understand that compliance and the laws, and, so, everything we do we have the right oversight to, and we have an oversight section as well, and this will -- this leads me back to the people. It's character, right, because if you're going to lead this force through compliance, you're going to fail. They have to lead -- what I mean by lead by compliance -- like fear -- you can't lead by fear, because you don't know what they're really doing, right? There's no way we can watch. We can log but then you'd just log their keystrokes, but then you just get an aftereffect. What we need are people of character that do the right thing, and when they recognize that they asked the right question and get the right clearances, that they fully understand, and this is a big part of the joint training is that it's very clear what they can and cannot do. Okay.

MR. SINGER: So, I'm going to, again, abuse by asking the last question. Built on some of the points you've made before about flexibility and the fast pace of change, and there's an interesting echo to the interwar years where you have sort of a similar opportunity. You're in the early stage where, you know, you can build something new. So, if we're thinking of, you know, the track that followed with the Army and its entry into a new domain, the Air originally puts it in the Signal Corps, then it creates a special Army Air Corps, and then it becomes a service branch, etcetera.

But, there's also a risk here which is a lock-in of organizational design. So, for example, if you took someone from the 1st Fighter Squadron, literally the 1st Fighter Squadron created back in 1918, and sent him down to the one today, everything would look familiar to them, the unit, the organizational structure, etcetera. The exact same would be if you look at the debates in the 1920s and '30s -- about, you know, how

many is the proper number of battalions, you know, that we just went through that again.

So, how do you avoid this organizational design lock-in problem, that what you decide right now could very well be where we're at, you know, 80 years from now? How do we balance that?

GENERAL CARDON: Yeah, so, that's a great question and I worry about this. So. I laugh, because the argument we use is we're still arguing about the size of an infantry squad after 230 years, right? How big should it be? So, what I'm trying to do, Peter, is keep maximum flexibility for the department right now. So, there are some in the department that say, you know, the current force design should have us move to a modified table of organization and equipment, which is how the Army organizes itself now, but, see, right now the entire organization is on a what's called a table distribution allowances, which I can just change. I can just change it.

So, part of the Army says you've got to get here so you can structure this, and it's like, no, I don't want it that way. I want it to be remain fluid because I've continued to ask -- I think that we need a system that relooks the whole thing every couple of years, and we should bring in people that have different viewpoints. And, we should especially pay attention to what's going on in the commercial sector.

I mean, already there's the Cyber Grand Challenge, it's something to really keep an eye on, because that is machine on machine. That's what we're talking about here for cyber. And, when you look at that, if somebody cracks that, then what does that do to the structure that I have today. I mean, maybe we don't need all this defense and maybe we need more over here, and I want to have that kind of flexibility to change the organization as we see fit.

I think, also with that is we need, you know, -- the Air Force wouldn't have existed without Billy Mitchell, right? So, how do you get -- whether you agree or disagree with them, right, -- he clearly advocated and created a strong following for this. So, how do you create the experimentation and the people that write on this that forced

the change, right, and this is the whole discussion on military transformation by professors.

But, I think the challenge comes in when the Army gets locked in -- or not the Army, the services even get locked in. It's hard for them to move away from this. Right now, our Army's under some challenge, right, because we're going to get smaller, and, so, we're going to -- as we move down to 450,000, then we're going to have to figure out, right, how are we going to be more in a connected -- and now we're starting to think, well, maybe we have to completely relook at our operational construct. That's being driven by a budget approach. What I'm wondering is is there a way to do it without waiting for someone to force us to look at it like that, right, that we constantly are trying to adapt our organization as we go forward.

I think this year in 2014, given what's going to happen inside U.S. Cyber Command, the capabilities coming online, the new technologies coming online, it could be a transformational year, this year or next year. Those two years are going to be transformational in nature for defining the way that the department's going to do cyber. So, I'm really excited to be part of it. It's daunting, but I'm excited to be part of it. So, thank you.

MR. SINGER: Well, we can see why we were so excited that you were a part of this conference, so we very much appreciate you joining us. Please join me in another round of applause. (Applause)

GENERAL CARDON: Thank you very much.

MR. SINGER: Quick logistics note. So, outside we'll have food, not as good as at the Google cafeteria, unfortunately, but go ahead and grab your meals and then come back in and then we'll start the next panel.

(Recess)

MS. EAGLEN: Good afternoon, everyone. Welcome to the second half of our Brookings Military and Federal Fellow Research Symposium.

My name is Mackenzie Eaglen. I'm a Defense Analyst, over at the American Enterprise, just across town -- soon to be good friend and neighbor of Brookings next summer, right around the corner here.

It's a pleasure and an honor to be up here with this great crowd, and to support Brookings and all of the hard work of all these Fellows -- and Michael and Peter, as well.

So, thanks for having me. My job is to not talk today. I'm just going to briefly introduce the three gentlemen to my left, and let them kick it off. Our panel is "Enduring Regional Challenges," as you know. And I know you have their bios, and they're incredibly accomplished, and well-educated, and experienced operators. And so I will not walk through in detail, but I do briefly want to highlight some of their outstanding accomplishments.

Going first this afternoon -- and to my immediate left -- is Navy Commander T. Pham. He's a Federal Executive Fellow at Johns Hopkins University Applied Physics Laboratory. So, he's definitely smarter than all the rest of us here today.

He began his career as a Naval Flight Officer, accumulating almost 3,000 flying hours in the EP-3E aircraft as an electronic warfare mission commander. He later switched to surface and intelligence. He's had a variety of operational assignments, as well as staff and educational tours.

He has a background, educationally, from Harvard, MIT, Naval War College, and three MA degrees -- two more than most of the rest of us -- and is a graduate of the U.S. Naval Academy, with a degree in oceanography.

To his left is Marine Lieutenant Colonel Charles Moses. He enlisted in the Marine Corps in 1991 and was commissioned in 1994 -- also Naval aviation training, to great extent, with both a variety of operational assignments in command and staff, in his extensive background.

He is currently attending the School of Advanced International Studies,

just across the street -- SAIS -- at Johns Hopkins University, as well.

He has served all over the world, in a variety of operations -- everything from Iraqi Operation, to Operations Northern and Southern Watch, to Hurricane Katrina, to JTF Liberia.

He's a graduate of the Amphibious Warfare School, among other places, and has almost 4,000 flying hours in a KC-130. I've heard that his call sign is "Hippie," so that maybe that will give us a little more color when it's his turn to speak. He didn't know I knew that, but I do. He can thank another Marine on today's agenda for that information.

And then, last but not least, of course, is U.S. Coast Guard Commander Tony Russell. He's a 17-year Coast Guard veteran. He served nine years at sea, on six different cutters, conducting migrant and drug interdiction in fisheries enforcement operations, primarily.

He, too, has served in a wide variety of operational and shore assignments, including extensive background in public affairs work here in the Washington area -- everything from the Commandant to the White House support.

He is a graduate of the U.S. Coast Guard Academy and has twice completed Coast Guard advanced education programs. He has a Masters in Military Studies, also, from the Marine Corps University's Command and Staff College.

I failed to mention he is the Coast Guard Executive Fellow to the Rand Corporation.

Well, I was going to offer a scene-setter, and tell you all of my smart thoughts after reading your abstracts, but we're going to all learn together as we go from each of their presentations this morning. Then we'll kick it over to you all for questions and answers, and without any further ado.

COMMANDER PHAM: Thanks, Mackenzie. Appreciate the kind words.

Before I start, I'd like to thank my friend, Greg Knepper, who's a Fellow

here, for giving me the opportunity to speak today. So, thanks, shipmate; I owe you one.

But before I start -- first of all, can everyone here see me? Because I am standing up, so --

But, like I said, I think, to give more time for the other speakers, who, I think, have great papers -- and, also, for questions -- I'll try to keep my remarks short and sweet, like myself. So, the less I talk, the better.

But, essentially, my paper calls for developing and deploying intellectual talent to a specific region, to support, as you all know, the whole government U.S. REIT balance, as well as complement the military component to that rebalance.

As you know, our Chief of Naval Operations often likes to say, you know, "All the technology or hardware is great, but without the right people, you know, forget it." The people are our asymmetric advantage in the world.

So, this military component -- I call it the brawn -- you know, continues to receive the most attentions. And as you all know here, it mostly consists of, you know, increasing rotational force deployments, basing more ships and aircraft forward, as well as fielding new capabilities, like technologies.

Lesser known are the Navy -- I call it the brain efforts -- to enhance our regional alliances and partnerships through the unprecedented integration of headquarters staff, as well as increase in multilateral exercises.

We also are developing concepts, strategy, and tactics -- and capabilities -- for A2/AD and the air/sea battle.

And we are leveraging our academic institutions to develop and deploy this intellectual capital to the region. I think this effort is perhaps the most important and most challenging, because it underpins the other two efforts, as well as it focuses on the people, which I've said are the asymmetric advantages that we hold in the world.

So, why are these brain efforts so important? I think they're important because Pacific commanders, at all levels, required sound advice to make operational

and tactical decisions that are synchronous with national and theater policy and strategy -- especially during phase zero that previous panels talked about.

Why? Because at phase zero, these timely synchronized and targeted actions can deter hostilities, lower tensions, manage escalation, and, perhaps, ultimately, what we all desire is to avoid, you know, crisis on conflict.

So, what these commanders really need are regional and naval operation of staff officers who can assess the fluid situation, predict probable outcomes of planned actions or operations, and basically help them circumvent or mitigate unintended consequences of their actions.

And while regional expertise may be helpful, I think maybe more important is the requisite understanding of players, dynamics, and the operating environment that will enable them to ask the right question -- and, more importantly, help their commanders ask the right question and understand the context underlying them -- because, in many cases, from my experience, it's the journey of discovery that's going to be more important than the actual destination itself.

So, a key component of this Navy brain initiative is the nascent Asia Pacific Hands Program that seeks to not only support the U.S. rebalance, but also enhance (inaudible). The program seeks to build regional understanding and confidence in officers en route to operational-level billets through a continuum of regionally-focused training and education.

These officers start with a three-month regionally-focused foundational education at the Naval Postgraduate School, and then go onto their assignments.

Afterwards, throughout their career, they have additional opportunities for follow-on training and education opportunities, to enhance their knowledge and understanding of the region.

Key constraints of this program are: The officers that are in the program must remain competitive in terms of promotion. We can't afford to educate these guys, to

then let them go on the wayside. It's a waste of resources.

Also, (inaudible) requirements needs to take precedence. This program cannot hinder the detailing process. Detailers need to look at this program as a tool to get the right people to the right place at the right time.

And, lastly, the program needs to leverage and align existing programs already out there to minimize costs.

As far as the future build of this program -- because it is at the beginning stages -- it should be incremental, informed by lessons learned as the program matures, and be driven by operational requirement.

In my paper, I outline some proposals in terms of initiative that should be considered, as the operation dictates and as more resources become available.

And before I talk about my last point -- challenges -- I'd like to say that this program is not open to just the Navy, but also to their services.

And, finally, the challenges I see are, obviously, the physical constraints that are facing the DoD in the coming years, which put pressure upon the detailers to fill key billets, to better meet mission needs, whilst, at the same time, keeping these also viable -- and, finally, the culture change.

And in conclusion, I'd like to say that, you know, as stated in the QDR, you know, we simply do not have the resources as we had in the past. So, we all must now, I think, work smarter.

With that, thank you very much.

MS. EAGLEN: Very, very well done. Thank you very much.

With no further ado, Colonel.

COLONEL MOSES: All right. Thank you, Mackenzie. Thanks for the kind intro.

And, again, I would like to extend my thanks for the detailed intelligence that's been run, courtesy of, I'm sure, another Marine that's going to be presenting later

this afternoon.

MS. EAGLEN: I think he's figured it out.

COLONEL MOSES: Yep. So, thank you, Aaron.

Thank you for allowing me to be here today. I actually gave this consideration to do North Korea as a research topic for the school.

And, as you see in my bio, I really have no North Korean expertise. Like a Marine, you run to the sound of battle. The Korean War is one that is without peace. It's an armistice. So, certainly, it's something that is intriguing to me, as a Marine.

It's also very important that subjects that I like to dabble with are challenging. So, why North Korea? That was the reason for me. And North Korea is one of those things that is definitely challenging. We all know it's an opaque society.

And then, to be able to understand how the military aspect of Korea operates, it takes a military mind. So, I provide a lens of the study that I did on North Korea, from a military balance perspective.

And what I did and what I've read really provided some concern in my research. But the important part was not as an alarmist, but our information that is available sometimes is -- discontinuities exist within the year-to-year research. There's trends that don't make sense, based on prior year applications. So, trying to piecemeal these things together provided me some trends and some implications that I'd like to leave with you.

What I would really like you to do is look at the balance of these trends and implications from a North Korean mind. And I know that's very hard, but I think, as T said, we have to be able to think with a different perspective. We have to be able to anticipate. And I think the ways we ask the questions for North Korea have a U.S. lenses and U.S. assumptions that prevent us from being very successful.

So, three or four trends: By 2018, we're going to see the Republic of Korea's defense spending equal the North Koreans' GDP. That's a significant

asymmetry just in defense alone. That's going to enhance North Korea's perspective on how they perceive the threat.

Another trend I've found is that, as you look across the military -- the individual leaders, the commanders -- none of them have operated outside of North Korea. The ones that are currently in North Korea, none of them have been outside of North Korea. None of them have operated outside. So, there's a groupthink. There's a perspective that is not influenced by exposure.

If we look at how they're educated, they're taught the 625 event was an attack by the U.S. So, it fully rounds out the fact that they're in a defensive nature.

We look at their nuclear capability. If we look at history to provide a nuclear-capable nation and the next effects of what that nuclear capability provides us, we see asymmetry or asymmetric forces being utilized. We see an increase right now in their special operational forces, and we also see an increase in their cyber forces.

What we can certainly attribute is that their actions -- the actions of nuclear-capable states -- will be actions that are non-attributable, to ensure that escalation doesn't allow them to have to use a nuclear weapon. Their strategy is a qualitative method in that nuclear perspective. So, they do not want to have to be forced, or escalate, or feel like they have to escalate.

And then, I think, the starkest trend is, there's social disparity. There's a disparity that is growing between the rural North Korean as compared to China or as compared to South Korea that's very stark. It's not just cultural, societal, economic, trade; that is only increasing. Ever since the loss of the Soviet Union backer in 1991, there have been significant challenges. That includes the challenges of South Korea being joined by the Soviet Union, and then Russia, as well as other nations that are observing South Korea as a valid nation.

So, some of the implications -- what does it all mean? Some of the lens that we provide is that the regime is going to collapse. Obviously, it's not. It's been

tested throughout the time. We haven't seen a regime collapse through several unique and very challenging periods. 1991, as I just mentioned, is a very significant time period. The amount of funds that were provided for North Korea during that time was pretty intense.

Then, on another fact, is the loss of Kim Jong-il - very, very quick. You know, I found it entertaining that President Carter had just said three weeks prior to his death that he's got 10 more years, at least. So, you don't want to be visited by President Carter, and have anything about health be provided for you, for sure. So, I thought it was very interesting.

So, what would happen in a regime collapse, and who would best be provided to do that? And I would say that China would be probably well-suited for that. And the reason is, U.S. and the Republic of Korea are going to be seen as an invading force. And that will be destabilizing even more so than the security to try to ensue for the weapons of mass destruction that we would want to make sure are secure.

So, I think we're going to need to do a lot of intelligence-sharing with China. And it may be a little bit painful, but it's going to be important.

Another implication is, if sanctions continue, I think we're going to see China soften their stance with North Korea. And the reason is, is the sanctions are unprecedented against the world. It has more effect on the rural population. I think China's going to see that. They're going to reduce their sanctions, provide a buffer to worldwide sanctions inside of North Korea.

And then I'll have other, second and third order of, facts.

But, mainly, what I'd like to talk about is, in the next 20 years, when I looked at the military balances, there's going to be an increase in chance of miscalculation with North Korean forces. As we see them, those that were challenged in the '90s, through a very stark famine period, the sanctions are going to be to blame. The U.S. is going to be the blamee of who actually provided the sanctions or was, you know,

firmly behind the support of that. So, we're going to have an increase in disparity between the U.S. and North Korea.

And then our sanctions and that relationship will increase proliferation. As we look across 20 years, it is really the only thing that is going to be prevalent that they create, to make sure that they meet the gap that is currently in the military balance on conventional side to a nuclear side. It is the gap. It is the balancer.

So, they'll be able to proliferate that information to non-state actors and future state actors. And I think sanctions and our firm stance will actually help provide that.

We have failed, in my opinion, to provide a good perspective on how to stop the proliferation or their nuclear weapon capability. We need to look more at compellance now. Deterrence has failed. And I think it's going to be hard, and I think it's going to take innovative people to do that.

So, look forward to your questions.

MS. EAGLEN: Excellent. Thank you. I'm already thinking differently to the theme between the both of our speakers so far. I'm excited for questions and answers.

Commander Russell.

COMMANDER RUSSELL: All right. Thank you very much, Mackenzie.

It's a pleasure to be here today. I definitely want to thank Brookings and Commander Tom King, the Coast Guard Fellow here, for the opportunity to come and present. Sunny and 75 degrees gets very tedious, so it's nice to come in from Santa Monica and enjoy a little weather diversity.

I enjoyed all the talks this morning, but I would ask to draw you back specifically to the comments by Lieutenant Colonel Campbell and Colonel Burgess. Those have a lot of relevance to my topic, as well.

Piracy has been called the original universal crime. It's a great sound

bite, but it's quite over-simplistic and doesn't really recognize the complexity of modern piracy.

Today, I'm going to talk about what piracy off the Gulf of Guinea looks like. I'm going to discuss its origins and implications in the region and beyond, and go over some recommendations for future efforts that I have.

Piracy in the Gulf of Guinea's been taking place for decades. But in just the last couple years, it's really flared up into a new, more dangerous, and more threatening form. But we need to put these events into proper context.

The act of piracy takes place on the water, but its origins, both physical and motivational, are terrestrial. Piracy in the Gulf of Guinea is a symptom of marginally functional governance, with limited maritime security capability and capacity in the region. It's one of several elements of transnational organized crime that's exploiting the sovereign and regional vulnerabilities in a manner that undermines regional stability and security.

Like any good doctor, while you ultimately want to cure the disease, you also have to treat the symptoms. And you can't just ignore them. Nations have a common interest in achieving two complementary objectives.

One, to facilitate maritime commerce that underpins economic security and prosperity, and to protect against ocean-related terrorist, hostile, criminal, and dangerous acts, including piracy.

All prior radical activities add up to an environment of insecurity that has a destabilizing effect and debilitating economic impact. Whether the attack happens 5 miles, 50 miles, or 500 miles offshore, the ripples are felt throughout the global system.

What the location does impact is the relative weight of effort expected of various sovereign nations in the international community as a whole.

The characteristics of piracy in the Gulf of Guinea are much different than Somalia and the Horn of Africa that a lot of people are familiar with, just due to

current events. In fact, countering pirate activities in the Gulf of Guinea region is actually much more complicated than around the Horn of Africa, due to the existence of functioning and sovereign states.

Piracy attacks in the Gulf of Guinea tend to be much more violent relative to other regions, with by far the greatest instances of gunfire. And last year, in 2013, all incidents of kidnapping that were reported worldwide happened in the Gulf of Guinea region.

Perhaps the most alarming development in recent years is in hijacking and bunkering -- because not only are economic impacts staggering, but they demonstrate a level of sophistication and organization that are frightening.

The 2010 attack on the motor tanker, Velle di Cordoba, by Nigerian pirates, off the coast of Benin, is generally held to be the first successful hijacking of a product tanker in the Gulf of Guinea. And 5,000 tons of refined product were stolen in less than 72 hours.

Since then, 117,000 tons of refined product, valued at $100 million, have been stolen from tankers in this region.

To put that in perspective, the largest ransom ever paid for a Somali hijacking vessel was $13.5 million. So, you see the profit margin in this region is significantly greater than the Horn of Africa.

So, given all of that, besides piracy simply being bad, and we should all want to stop it, what's the real international interest? Just look at the current Ukrainian and Russian crisis. Russia has used its control over the natural gas pipelines to exert pressure before and is likely to possibly do so again. Nigeria is the fourth largest exporter of L&G in the world. And 43 percent of those exports go to Europe. And it provides 1/5 of the non-European L&G to Europe.

So, the E.U. and NATO should clearly care a great deal about the offshore security situation in the Gulf of Guinea.

If you looked at a heat map of the global Failed States Index, you would see a large red belt going from west to east, from Guinea-Bissau, across the continent to Horn of Africa.

The thirteen countries in the Gulf of Guinea region, four of them are in the top twenty of the Failed State Index, and nine of them are in the top fifty.

Amongst all those, where Nigeria goes, arguably, so goes the rest of the region. Nigeria represents 14 percent of African GDP. It's number two, behind South Africa and just ahead of Egypt. If Nigeria fails, there's potential for a destabilizing ripple effect throughout.

This hypothesis is sometimes considered a bit extreme, but it's not a red herring. You only have to look a couple nations to the west to see Guinea-Bissau, which is simply a functioning drug state. And then you also have to look at the prevalence of the violent extremist organizations and terrorist networks that are actively operating in just the neighboring countries all throughout the region.

Nigeria's energy-based economy creates a single point of failure that could have regional and global repercussions. It is not unrealistic to consider a situation where Nigeria's energy economy could collapse.

So, what is there to be done? First, recognize that piracy is symptomatic of the lack of effective governance in the region, and that the void is being exploited by organized criminal networks, including pirates, for political and economic gain. We've got to treat this disease with the right antibodies. We've got to employ effective coin strategies to regain the advantage of political capital among the population, and eradicate the environment (inaudible).

This requires strong and sustained political will to improve governance, with increased transparency and reduced corruption. This must be an African-developed and African-led solution, but there are very real global implications that call for support, mostly from Europe, but, also, the United States and others -- specifically, Brazil, and

India, and other partners.

The international community can exist by using diplomatic and economic leverage to create and sustain the political will of Nigeria and other Gulf of Guinea states to address the lack of governance and environment of insecurity.

Require actions to be transparent and accountable, to gain popular trust, and erode the culture of corruption. Provide significant and targeted economic infrastructure development that benefits the population, while addressing some of the piracy drivers.

Two examples would include increased refinery capacity. The tankers being hijacked are not the ones carrying oil away; they're the ones carrying refined products in, because Nigeria's refinery capacity is minuscule compared to its production capacity. So, they actually import most of their refined product.

Develop the fisheries. Commercialize the inland water waves.

And by that, I say, think about the inland river system of the United States, and just how valuable that is to us. Nigeria geography is kind of favorable to that same kind of development, and it creates economic options other than piracy.

Address the environmental issues in the Niger Delta. I read one place that Nigeria has essentially experienced an Exxon Valdez-level spill every year for 50 years.

Provide technical expertise to modernize regional nations' domestic laws and judicial system to address piracy and robbery at sea. And, importantly, to target the white-collar government and business officials who are supporting and enabling these transnational organized criminal networks to operate.

There's a good U.S. model you can look at for that -- Operation Panama Express, which is the prosecutorial element of JIATF-South, which runs the counter-drug operations. They've been doing similar-type work for a long time -- and working through Interpol, I suspect you could gradually establish the same sort of effect in this domain.

But while you treat the disease, you can't ignore the symptoms in the short-term. To help address piracy, the international community must aid the Gulf of Guinea nations in reclaiming the maritime domain -- through improved awareness, presence, and interdiction capabilities, supported with improved intelligence.

Some more immediate measures to consider: First of all, provide robust support to the successful operationalization and implementation of the Gulf of Guinea code of conduct that was signed last year by the ECOWAS and ECCAS regional communities.

Reexamine the role of privately contracted arm security in the region -- whether or not those are used varies by nation. But I argue that they could be a short-term, temporary measure to harden targets -- and, also, to provide a valuable type of intelligence surveillance and reconnaissance capability.

The E.U. and NATO, specifically, should consider a more robust forward deployment program to reinforce the security presence in the maritime domain, while the regional nations build their own capacity.

Geography favors the Gulf of Guinea, compared to the Horn of Africa. So, the force you're talking about is not nearly the size of what we might be familiar with in the Horn of Africa, with CTF-151, Op Atalanta, and so forth.

Similar to the above, a dedicated maritime patrol aircraft capability would be hugely beneficial, so that you can't have tankers floating around, un-located, stolen, and making multiple transfers at sea for five days, okay? They shouldn't have that much freedom to operate.

Better synchronize the international support to African initiatives. One thing I've discovered in my study is, there's a lot of alphabet soup going on there -- a whole lot of people participating. And you've got to do a better job of coordinating those efforts, and making sure that you're mutually beneficial, and not duplicative, and making actual progress.

Develop a regional plan for improvement of offshore security capability and capacity -- and seek opportunities for cooperation and collaboration, for the most efficient use of scarce resources.

We used to have a thing called the Caribbean support tender, which was a retired Coast Guard buoy tender that they painted a different color, and they actually put a multinational crew on it -- U.S. flag vessel, but crewed by Central and South American nations. Its job was fulltime engagement, going around -- considered a huge success, but it's one of those things that falls under the "everybody loves it, but nobody wants to pay for it," and it doesn't fit cleanly into anybody's structural paradigms.

Well, this is a perfect example where you can take that model, and, really, I think, achieve an immediate effect going that route.

So, to summarize, these steps are easy to say, but hard to do. But isn't that the fun of being a Fellow? Great ideas with no responsibility for execution.

Success in the Gulf of Guinea will take substantial financial and physical support from the international community, and progress will be measured in years, if not in generations -- and will directly be linked to the political will of the sovereign states involved and their commitment to improve governance and service to their people.

So, there you have it. In five minutes, we've solved one of the world's issues, and I think we're ready for questions.

MS. EAGLEN: Excellent. Thank you. Thank you all -- very well done. I will borrow from T's presentation: There's no doubt that we have a lot of brains behind the brawn up here. So, I am excited to talk. I've learned a lot from all of you.

I'm only going to ask one question, and then I would like them to hear directly from all of you. And I'm simply going to try and parlay the three presentations, and have you all think about each other's for a moment.

So, T, let's take your idea of this intellectual talent, this regional expertise -- you know, multiple tours, U.S. military -- let's pretend it's accepted and broadened

throughout the military to other COCOMs, okay? So, Africa, for example -- AFRICOM and other places -- how do you see your proposal helping some of the challenges?

So, for example, Colonel Moses talked about -- the chance for miscalculation will probably rise in the coming years on the Korean peninsula -- which I think is a very, very true statement. How could your proposal possibly -- how would the military intellectual capital increased in that region help prevent something like he's outlined?

And then, to the two of you, what would this kind of recommendation -- would it have any impact or bearing on the types of challenges you've outlined in some of the policy solutions you've come up with -- thinking about sort of the people angle and the intellectual capital angle -- is there any value there in solving your problems? Not necessarily in his solution, per se, but something along those lines.

COMMANDER PHAM: Thanks for the question, Mackenzie.

I guess, in short, where I see my proposal -- it's just not my proposal; it's actually an amalgamation of a lot of great thoughts by other folks within the Navy -- I just so happened to be able to gloss them together -- so no original thought from me -- trust me.

But I see -- this is really about phasing. And, as Jeff talks about, you know, we need to understand, you know, our potential adversary, if we truly, you know, want to encourage/influence them. It's much cheaper to deter than it is to defeat.

And so, essentially, I think that's the value-added, in terms of my proposal.

COLONEL MOSES: Yeah. From a North Korean perspective, you know, I think it's a very great idea. And I think the gap in the military, very specifically -- and to be very succinct -- is, we're very tactical and operationally-minded. I mean, that's why we're there. That's what we want to focus on. Otherwise, we would've gone down to Foggy Bottom and joined the Department of State.

MS. EAGLEN: Or, apparently, the think tank, according to Commander Russell.

COLONEL MOSES: So, I think there's challenges, culturally, that are going to be difficult to overcome. But it's important to have people that would be regionally focused, so that when we get to the point of them going through the ranks, there would be a strategic depth. And I think that's what's missing.

General Mattis talked about trying to provide strategic minds, and how do we do that, how do we build that capacity? It's really hard.

And then if you choose who goes on what realm, how do they go through their career? Is it a positive, or is it a negative? Are there too many Chinese, or there's not enough African?

So, it'll be very difficult to also be shelved into a category of something you chose as a Lieutenant -- so to be challenging. Not saying that it's not important; it'll be just very challenging for the individual. Personally, I don't consider myself a North Korean expert, so that's a good thing.

But, regionally, it is important to have that capability -- to bring the strategy amongst your fellow officers. And you can share that on a staff. You can share that at a COCOM, and you can share that at a service level.

COMMANDER RUSSELL: So, I'm a public affairs officer. I'm not an expert in anything.

But I will say, in that specialty, one of the skill sets that I have identified as being key is being a bit eclectic -- being interested in a whole lot of things -- is the whole being a mile wide and an inch deep -- which has its pros and cons.

I would say to your specific question, though, people aren't the issue. We have incredibly talented, smart, and creative people who have really good ideas about new ways to approach problems -- structures or the issue. How do you take those ideas, and get them into an actionable format, and get them into the right office that can

identify the authorities in the funding that can make that happen -- who can build those private/public partnerships that are going to make sure that the right development's happening?

And so, you know, one of the talks earlier was about, you know, changing the way we do our interagency. And I think that's a conversation that's been had, but hasn't made a lot of progress. And we need to get to that progress phase, and really kind of redefine how we do that -- because until we do that, we're going to be very bound by some of the structural limitations of what we can do.

Most of these engagements that we're in, there's a long game. But we're designed and built to fight the short game, and that puts us at a disadvantage, where what effects we do have are very inefficient; not necessarily sustainable.

MS. EAGLEN: Very well said, all of you -- great answers.

We're going to open it up for Q&A, and I will go ahead and just point to you. There's a microphone. If you could please just let us know your name and your affiliation, that would be really helpful. We'll start here.

MS. NGUYEN: Thank you very much. My name is Genie Nguyen, Voice of Vietnamese Americans. Thank you for very thoughtful and timely presentations.

The regional challenges, I guess, right now, for us, is Asia Pacific and the Southeast Asia Sea -- and, also, the South China Sea. I'd like to pose one question for each panelist.

For Commander Tuan Pham, thank you for your presentation. I think it's very thoughtful. Would you elaborate -- the opportunities and challenges we faced with Vietnam -- in particular, the conflicts in the Southeast Asia Sea or South China Sea -- especially in your position as a person of Vietnamese-American -- I believe you have a lot of opportunity to work with the people.

And so what are the challenges, and where are we with promoting your proposal or your strategy?

Lieutenant Colonel Moses, thank you for your vision from the angle of North Korea. I need some clarification. You said that if North Korea collapsed, China could be the most natural state to step in. So, is that only from the North Korea views? Where is the South Korea view? And, actually, if China steps in, how would that impact the security of the whole region and, also, the global security?

Commander Russell, thank you for the Coast Guard. I know that you talk about New Guinea and Nigeria. Do you have any project proposal regarding the Southeast Asia Sea, where the concern officially is food and other non-kinetic conflicts rising?

Especially with the recent regulations officially put out by China, would the Coast Guard have any plan to help with the patrolling of fishing vessels there, to avoid miscalculation? In that area, I believe there's almost near-collisions of our military vessels there quite a few times.

So, where do you see the Coast Guard's function in that area?

Thank you.

MS. EAGLEN: Thank you. Those questions are as substantive as our presenters.

So, we're going to s tart, this time, with Commander Russell and work this way, okay?

COMMANDER RUSSELL: They're great questions. Thank you very much.

I'll make a couple quick points there. First, our Commandant just visited Vietnam less than a year ago, and we actually have signed a memorandum of understanding with them. They're actually building a very cooperative relationship with the Vietnamese.

Also, in the Philippines, their current flagship is a retired U.S. Coast Guard cutter, the same class of which I just came off of.

And so those relationships are strong, as well.

You brought up the issue of fisheries. We would lump that into what we call maritime governance. And that's, you know, when you look at the DIME model -- diplomacy, information, military, economy -- maritime governance is a very powerful tool to be used for that kind of stuff.

All over the world, fish docks are a critical issue. I've been studying Africa, and I think 60 percent of the protein that the population gets is from fisheries. They're threatened. They're threatened because of overfishing, the environmental degradation, stuff like that.

So, we absolutely need to build and maintain the international consensus to protect those.

Not the specific question you asked, but it's a good opportunity to make the plug for it. Ratification of UMCLAS would be hugely beneficial, so that you have an established set of rules and expectations that everybody is agreed to and playing by -- so that, as you have those conflicts, you have some sort of adjudication process and body to go to.

So, you know, I need to make the pitch for that, as well.

COLONEL MOSES: That's a great question. UMCLAS is important, and I think Vietnam has signed. China has also signed UMCLAS; U.S. has not, just by noting.

So, the China perspective -- and, you know, really, I'll break it into three distinct answers. The China perspective on why best-suited is because they have a relationship. I definitely believe that North Korea would still see them as an invading army.

However, I think it probably provides a better solution for the status quo. You know, obviously one China policy, in their foreign policy perspective, is important. It went to a two Koreas perspective. And I think they would maintain that -- two Koreas. I

think they would just provide for the concern of the WMD perspective. And they would not over-push and provide that as a Chinese nation.

And we see that play out when they respond -- even just recently -- to Ukraine. So, I think that is probably better-suited, if we look at the operational losses for Korean People's Army, or the Republic of Korea, or the U.S. forces there.

So, transitioning to the Republic of Korea perspective -- I think that they would agree with that. The one thing that China will be very concerned about is that disparity I spoke about. So, the economic burden that will be from supporting that nation -- they're well below any status quo of either nation. And both will be compelled -- if not U.N. compellance -- to provide for the humanitarian relief more so.

Republic of Korea -- you know, South Korea -- would want to be able to provide part of that. But it would be through an NGO perspective, I think. And I think that would be the approach vector that would probably be best to save lives.

And then the impacts of regional security -- I don't think it's an imbalancer. I think, if we look at the island disputes, I don't think it would be an imbalancer for China's -- and I guess the best way to put it is support for restabilizing North Korea -- to maintain their two Koreas perspective, and not getting into the internal affairs.

So, that's what I would believe.

COMMANDER PHAM: Thank you very much, Ms. Nguyen, for your questions.

From my experience -- ad, to be perfectly clear, I've been very fortunate that I've had three tours in the Western Pacific -- the last one being on the George Washington. So, I'm very familiar with the challenges and opportunities you were talking about.

So, to answer your question about the opportunities for Vietnam and us -- I see the PRC maritime assertiveness -- I think -- give us the opportunity to work with

Vietnam, but, also, with the other Asian nations to influence PRC toward a more constructive approach.

Also, I see the opportunities of more (inaudible) engagements between, you know, not only our navies but our military -- but it also builds more personal-to-personal level, so that we can enhance, you know, regional partnerships and alliances.

And I see Vietnam as a potential, you know, available partnership for the U.S. that has mutual benefits for both countries.

As far as the challenges, there are three that I can think of off the top of my head. The first is -- I think, in the region, there is still misunderstanding of what the rebalance is and what it's not. I don't think we have done a good enough job (inaudible) within domestic, but also to our, you know, other partners in the region.

Secondly, there is still, I think, questions or concerns about U.S. commitments for the rebalancing, in light of, you know, the current fiscal constraints. Can we actually implement the strategy? And are we going to be there for them, who, for years, have relied on the U.S., you know, for not only American security, but, also, as stability?

And, I think, lastly, in terms of Vietnam, as you know, I think because of our history, there is still some mistrust between the two countries. I think that's more at the senior level, the older generations. I think as the new generation takes over the country, they'll have a different perspective that could be more conducive toward greater cooperation and collaboration between the two countries.

I hope I answered your questions.

MS. EAGLEN: Thank you. We only have a few more minutes, so we will try and get, perhaps, one or two. Why don't we take two up here, and then we'll conclude in the back.

MR. SMITH: Thanks-- Boomer Smith, from Australia. My question is for Jeff.

Let's pose a scenario in which (inaudible) for some reason or other, a reunification scenario comes up -- whether as a result of a collapse or something like that.

How do you see that panning out, in terms of South Korea's ability to finance the economic remediation of the North, and what the international roles might be during that -- and then China's reaction to it?

COLONEL MOSES: Okay, that's a great question. And it's certainly a problem set. And I honestly don't think that the Republic of Korea is spending enough of their GDP on reunification efforts -- in a peaceful manner perspective.

I think that if we're going to see a successful reunification -- no shots fired -- it's going to have to come from within. I am certain that there will be no forced reunification. I think North Korea's had a perspective that the military balance is so asymmetric that they will not move south. It's not advantageous to be able to do that.

So, China's perspective on it has been very silent. It's almost as if it's been encrypted in the same North Korean hold that you try to get information from.

It is going to be a problem set that China will have to deal with, because they definitely do not -- and have a history of not wanting U.S. influence, even, as far as North Korea.

So, I think the China perspective is, they like the two Koreas. They like North Korea as a buffer state. They want to sustain that. They acknowledge South Korea as a state. They acknowledge North Korea as a state, but I think that they will try and reestablish another North Korean state, then try and provide a South Korean state as unified with North Korea perspective.

Did I answer your question?

MS. EAGLEN: We'll take one right here.

MR. URBAN: Hi -- Tim Urban, from Rand. T, this question is directly towards your paper.

You mentioned Asia Pacific Hands. I think you're going to have a really hard time selling Asia Pacific Hands if they do it in the same way that they sold AFPAK Hands. You start talking about Navy detailing, career intermissions, or sidelines, or even a different career path for something like Asia Pacific Hands, it seems like that falls directly into the role of the FAO.

Have you been talking with the N52 folks -- and all across the board, as far as detailing, into that program, and what it would mean for career pipelines with guys that are coming out of maybe an operational --

COMMANDER PHAM: Hey, thanks, Tim. I appreciate the question.

You're absolutely right, first of all -- is that, you know, this APAC Hands cannot follow the AFPAK Hands model. And it doesn't. I think there were a lot of lessons learned that were taken and integrated into this new model.

But the heart of the matter really is, like you said, the detailing aspect of it, and making sure that, you know, we don't hurt a generation of officers that may go into this more specialized pipeline.

Let me be clear. What it is is not necessarily, you know, going to become a FAO. It's really getting some additional education or training opportunities that can help them do their job. And it's also a tool for detailers -- you know, at least in my community -- to try to, you know, get the right people in, you know, the right places whenever possible, okay?

And I think the last question you had -- I'm sorry; I've lost --

MR. URBAN: It was mostly about how (inaudible).

COMMANDER PHAM: Yes, thank you.

I guess my prism on that one, Tim, is that at least at the taskforce level and below, the people that the commander always has in the room when he's ever dealing with operations or plans is always the Chief of Staff, the ops, and the intelligence officers. You really don't have necessarily, like, an N5 or FAO at this level. It's kind of

wrapped in with the N3.

And so if you really want to influence the commander, you know, you really need to empower those staff officers.

So, I hope I answered your question.

MS. EAGLEN: Great. Well, we have time for one more, if there are any.

Yes, I thought there was one last question.

SPEAKER: Hi (inaudible). I got a question for Commander Russell.

You were just talking about piracy in Gulf of Guinea, and you said it was specifically a different problem than Somalia.

So, my question is, what kind of deployment would be appropriate for a European ally -- because you said it's especially a European problem, as well, for the Gulf of Guinea?

COMMANDER RUSSELL: Certainly. Thank you.

You know, obviously, Europe has a long colonial history with Africa. There's pros and cons to that. But because of that, they do have, you know, longstanding relationships, and they are active already in terms of the mil-to-mil engagement. The French have a frigate regularly deployed down there.

Actually, a long-running U.S. program -- the acronym, I'm drawing a blank on it right now -- but the Africa partner station, we've had a hard time actually keeping our commitment on providing U.S. surface assets to that, and our European allies have been filling that gap for us quite ably.

To be honest, the presence doesn't have to be that great. The most critical piracy attacks that we're talking about right now -- the big impact ones, the ones that are being done by the most threatening organizations -- are the large bunkering operations. Tankers aren't that hard to find, if you've got the right assets and capabilities. The local countries currently do not.

And so, you know, simply, you know, providing a P-3 or some equivalent

of a NPA with dedicated hours -- so that when you have those incidents -- I imagine just the fact of a P-3 buzzing a hijacked tanker is going to put a significant crimp in their plan -- and going to make it much harder for them to do what they're trying to do, and at least serve as a deterrence effect.

And I know I'm making it sound all very easy, but, you know, you are talking about incremental changes, when you start doing that, and you start changing the game.

I will say, though, that while you do that, if you aren't doing more on the land side, in the two fronts of development and, also, in establishing kind of the intelligence and prosecutorial network so that you can begin to unravel these organizations through the law enforcement processes and establish that governance that's the real disease that you're trying to address, then it's going to be futile, and then you are pouring money down a hole, and you're never going to see it again.

But if you do those things in concert, slowly but surely, you begin to, I think, have a positive effect.

Does that answer your question?

MS. EAGLEN: Great. Well, I hope you are as pleased with this panel as I am. They are now veteran Fellows, having gone through their rite of initiation, so to speak, up here on stage, with all of us today, teaching us so much.

As Peter described this morning, summarize it as both substantive and interesting, and I feel like that reflects this panel so much, with the focus on intellectual capital, on people, on strategic depth, and, also, on the long game -- so not just employing people and deepening their knowledge and expertise, but fixing the bureaucracy to make them most effective.

And the three just turned out to be remarkably complementary. It's as if we paid them -- but we don't.

So, anyway, if you'll join me in thanking our panel, I appreciate it.

MR. SINGER: So, this panel, while one could argue that it was inspired by Biggie Smalls, with the "More Services, More Domains" riff, it's really about unmanned systems. And what is truly a killer application, in both meanings of the terms: a disruptive technology, but also one that's proven to be incredibly useful on and off the battlefield.

The U.S. military, for example, went into Iraq with a handful of robotic systems, unmanned aerial vehicles, remotely piloted aircraft, drones -- whatever you want to call them, we went in with a handful. Today, there's more than 8,000 in the U.S. military in the air, and on the ground there's another 12,000. And this technology has certainly cone global, with at least 87 other countries' militaries now utilizing unmanned aerial systems, as well as a looming civilian boom in everything from domestic drones to robotic cars.

It's an exciting time, but as this technology advances, though, we face a series of tough questions.

And today we have three officers who have tackled an array of these issues in what one writer called a "robotics revolution" out there.

So, first, we'll hear from Commander Tom King, who joined the FEF program after 21 years of service with the Coast Guard, having recently come off assignment as budget and program reviewer at the Office of Budget Programs at Coast Guard headquarters.

Then we'll hear from our international security fellow, Colonel Ryoji Shirai, who's with the Japanese Air Self Defense Force. He is a senior pilot, most recently with F-15s, and served as supervisor of Defense Policies and Programs Division at the Air Staff Office of the Japanese Ministry of Defense.

And then we'll hear from Commander Rob DeBuse, with the U.S. Navy. He's an explosive ordinance warfare officer, and joined Brookings after serving as the head of the Navy's Expeditionary Requirements Branch on the CNO Staff.

Tom?

COMMANDER KING: Thank you, Peter, and thank you everyone for staying this afternoon for this presentation.

As Peter mentioned, my last tour was as a program reviewer in our budget formulation, which sparked an interest, as I came here, to look at different acquisition processes within the Department of Homeland Security. As we all know, the budget seasons are tight here.

So I decided to conduct the research into the Department of Homeland Security's acquisition efforts in unmanned aerial systems, specifically within two of their components: The Customs and Border Protection Agency, and the Coast Guard.

And for the sake of this presentation, when I speak of "UAS," I'm referring to a system consisting of a remotely-piloted aircraft, ground-control station, ground data terminal, and the data and voice communications -- so, the whole system itself.

So, since 2004, UAS has been used to support the homeland security missions, while the acquisition and utilization of UAS and homeland security efforts has received favorable Congressional support, DHS's oversight and acquisition efforts have been the subject of numerous studies and reports into the efficiency and effectiveness of their processes and their projects. One GAO report had indicated that DHS made investment decisions on a program-by-program and component-by-component basis, and did not have a process to systematically prioritize its major investments.

So, starting out with the Customs and Border Protection Agency, their UAS acquisition consisted of the land-based Predator B UAS, which supported their law enforcement and homeland security missions along the nation's borders. The Predator B was selected for its unique combination of operational capabilities, payload capacity, mission flexibility, potential to accommodate new sensor packages, and its safety and performance record. At the time of its acquisition, it was one of the few UASs able to

qualify for the FAA certificate waiver and authorization to operate within the national airspace. DHS approved the UAS program as a component of Custom and Border Protection's strategic air and marine plan, and authorized the agency to acquire up to 24 complete systems.

For the Coast Guard's acquisition of UAS, they focused mostly on technologically mature systems, commonality with DHS and DoD, and leveraging other agencies' UAS experience. They've been active in investigating options for both land-based and ship-based UAS. Now, for their land-based UAS, they sought to utilize Custom and Border Protection's Predator B, and, in fact, some of them have been modified for a maritime variant called "the Guardian," and utilized that land-based UAS through a joint program office that coordinates those efforts. And, since 2007, the Coast Guard has partnered with the Navy to develop and field the Fire Scout UAS aboard the Coast Guard's national security cutters.

This effort still continues, however it's been slowed down a bit due to technological difficulties and the Navy's operational needs. So, as an alternative to a ship-based UAS system, the Coast Guard looked at a smaller version of a UAS to provide that surveillance capability for their offshore cutter fleet. And they're working with the Department of the Navy's Technology Transfer Program to assist in those capabilities, and are fielding a test model now, undergoing those test options now.

So, going through all the literature review, and conducting some interviews, looked at, coming up with some preliminary conclusions, findings, and recommendations, and basically the first one is: DHS is going just through the standard -- I don't want to say "standard," but going through the acquisition learning curve here. They hadn't adequately -- specifically Customs and Border Protection -- hadn't adequately planned resources needed to support its unmanned aircraft inventory. They experienced some of the same logistical issues that DoD did with training, mission support, and communication-infrastructure issues. CBP, their office of Air and Marine,

has minimal research and development staff, so they relied on leveraging some of the DoD technology, staff, and some of their efforts in looking at implementing their UAS.

Second, the acquisition choices done by DHS -- to include the Coast Guard and Customs and Border Protection Agency -- those are being evaluated and adapted. And the land-based, as mentioned, the Predator B was the UAS of choice, and they moved out on the acquisition of that asset, and they weren't prepared for the full implementation of that asset. But they've acknowledged that -- DHS and Customs have acknowledged that, and they're working with the current inventory, and have suspended purchasing and acquiring more assets.

Ship-based, the Coast Guard continues to work with other agencies to develop the UAS that meets their operational requirements, prior to moving out on acquiring a system. The acquisition of that small UAS as an interim acquisition strategy was approved by DHS, and was thought in a logical progression as a way for the final capability for acquiring it.

Third, the management and oversight, progress is being made by DHS. DHS as issued an acquisition management directive that contains oversight review stepping points that need to go through, and also requires the components to have test results and acquisition baselines. A lot of the acquisitions authority are left to the components to do their own internal review, but this management directive has put down some departmental control points on those acquisitions.

DHS also established an integrated investment life-cycle model which is intended to improve the portfolio management by ensuring mission needs drive the investment decisions. They've also developed a Capabilities and Requirements Council, which will assist in identifying cross-cutting opportunities and common requirements among the DHS components, and assist in those resource decisions.

And, as I said earlier they have developed that joint program office for their land-based UAS that will assist in the coordination of land-based UAS operations and policy development.

And, finally, the DHS acquisitions, they may influence the state and local enforcement efforts. The Customs and Border Protection's Office of Air and Marine, they deploy the largest law enforcement air force in the world, which would logically influence, in my opinion, other federal, state, and local law enforcement's acquisition strategies. Because I would assume that maybe those states would have less research and development than even the Customs and Border Protection Agency would, and they would look at proven systems.

Domestically, the state and local law enforcement agencies represent the greatest potential use of the small UAS in the near term, and small UAS can offer simple, cost-effective solution to some of their surveillance needs.

And, finally, the state and local agencies have already, some of them have already purchased UAS systems, and some of those have been done through grant programs from DHS. And there might be some room here for DHS to come up with a pre-selection list, brand or approval list, for small versions of UAS, and also look at the acquisition efforts, so have sort of a collective unit, if all the states and local agencies are purchasing the same models.

So, I appreciate your attention, and look forward to your questions.

COLONEL SHIRAI: Thank you so much for giving me this opportunity. And I'm very honored to be here at Brookings.

The security environment of East Asia is uncertain and unstable. North Korea's nuclear program and missile development pose a serious and imminent threat to Japan's security. China is also rapidly expanding and intensifying in its activities on sea and in air. On December 13, 2012, Chinese aircraft violated Japan's air domain around the Senkaku Islands undetected by radar. As a result the Ministry of Defense had to

recognize there were some flaws which needed to be corrected in order to protect air sovereignty. So the Japanese Air Self-Defense Force -- we call it "JASDF" -- temporarily allocated E2C Airborne Early Warning aircraft to Naha air base in Okinawa. However, we were having difficulty covering the weak area because utilizing these aircraft 24/7 has led to increased equipment maintenance and fatigue. Under these circumstances, the new national defense program guidelines and the mid-term defense program were release at the end of the last year. The Ministry of Defense announced its decision to acquire three unmanned aerial vehicles in order to reinforce its ISR capability.

However, many questions have arisen surrounding the incorporation of these new systems into the force structure, such as why do we need unmanned systems? Who should operate them? How do the new systems fit into existing command-and-control architectures?

Unmanned aircraft systems must be useful in executing 3-D, "danger, (inaudible), down" missions. Regarding the Japan Self-Defense Force, the Japanese military, I think it is important to acquire UAVs for the prevention of the arms race, and to replace the weaker aspects of human performance. Indeed, China has been rapidly advancing its military capabilities in a wide range of areas, without sufficient transparency, through its continued increase in military spending.

But Japan should not try to catch up in this arms race. We are now confronted with PLA's strategy of exhaustion. Scrambling jet fighters against Chinese UAVs is exactly what they want us to do. For instance, the number of scrambles to the East China Sea used to be less than 40 times a year, until 2009, and it jumped to about 300 times in 2013.

The operational cost to fly an F-15 is about $20,000 per hour. So, the JASDF spent $24 million to scramble G-15s in 2013. The JASDF will probably face pressure to rescue costs, because we have to forge modernization programs, including acquisition of F-35s. On the other hand, the JASDF is striving to maintain readiness for

these alert missions by focusing human resources on the East China Sea. Even if the JASDF could increase its budget for personnel, it wouldn't solve the problem of human error and the fatigue of aircraft, which might cause an unpredictable incident in the East China Sea.

The Ministry of Defense has prepared a budget of $2 million for research of UAVs in (inaudible) 2014. Unfortunately, I've already heard there are many challenges among related sections and services, such as who in charge of UAVs, and who pays for the operational cost.

According to this situation, I'd like to suggest three concepts relating to doctrine, leadership, and culture. First is doctrine, or operation concept. As far as I know, the JASDF has not recognized that original doctrine is needed for homeland security, because we are a reaction force. And nevertheless, the security environment has changed, and we need to modernize our air power for the information age. It is important to enunciate in doctrine the need to adapt to increased missions results in extra costs and overloads. In formulating UAV doctrine, we must include an operation concept for future missions, and alternative plans for a delayed modernization program. Autonomously controlled UAVs could compensate their lack of conventional air power. History proves that thinking about how a weapon will be used before deciding what to buy is important. Success of incorporating UAVs into the Japanese military depends on how well the JASDF (inaudible).

Next is leadership. In order to implement UAVs effectively, strong leadership, with able knowledge of UAV capabilities and proper future vision of war is needed. We can expect some kind of conflict between the new UAV community, and the old conventional-weapons community would appear, concerning personnel management issues, such as career path, promotion rate, and awards. Moreover, UAVs enable JASDF leaders to realize command-and-control has changed, by not only realtime, accurate information, but also by high mission accomplishment rate. In addition, senior

leaders need to learn how to maintain C-2 over UAVs without demoting (inaudible) to tactical ones. We might need a new definition of (inaudible).

Lastly is culture. The JASDF needs to cultivate a new culture of UAVs. All JASDF members should learn about UAVs, and get rid of their prejudices against them. I expect implementing UAVs into the JASDF will lead to enhanced synergy in each service, and help create an effective joint operations mind set. I recommend the Japanese military should make a joint operations research team for UAVs in the joint chiefs of staff, cooperate with the Joint Unmanned Aircraft Systems Center of Excellence to learn from U.S. military expertise, and enhance (inaudible).

The JASDF should also expand a UAV culture outside their organization in order to execute the ISR mission efficiently with allied forces. NATO already has this kind of organization, known as "Joint Capability Group on ISR" on the UAV.

Furthermore, Japan has been forced to deal with unilateral creation of the Chinese Defense Identification Zone, as well. The JASDF must take into consideration the need to avoid an unexpected accident, such as a mid-air collision. We need to establish a risk-adverting mechanism, as well.

I believe that efforts to set up the multilateral organization could be a method of solving sensitive incidents, and improving both allied (inaudible).

Finally, UAVs are spreading in the world, the usefulness will be exponential in Asia, because there are big gaps in air power between advanced countries and the developing nations. The JASDF needs to be aware that we are embarking on a journey into the information age. Incorporating UAVs into the JASDF will be the first challenge, as we adapt to this future.

Thanks so much.

COMMANDER DeBUSE: Good afternoon. My topic is how the United States Navy can use unmanned underwater vehicles to expand and maintain America's dominance of the underwater-undersea domain.

In 1994, I was a lieutenant junior grade on board the *USS Champion*, operating off the coast of Corpus Christi. 200 yards away from us a fishing vessel started taking on water and capsized -- not capsized, actually went end-for-end, and went straight down. Six souls on board, four people made it out. Everybody was wearing their life preserver.

The point is, I was on a minesweeper, the *USS Champion*, MCM-4. It was fantastically equipped to go down and find that sunken boat. The boat sunk in about two minutes. The two people that were trapped on board, two souls that were trapped on board, we had to go find where they were at.

So we used out mine-hunting sonar, variable depth, and put a small radar reflector, or sonar reflector, in the water, and walked it in, and put it inside the boat. It's fantastic.

The lesson-learned there is this underwater exploration stuff, and locating objects is simple -- piece of cake, no problem.

What you need to take into account here is that this is right before GPS came about. The internet had been introduced about three years ago to the public, three years earlier to the public, and we had 26 minesweepers, or mine-hunters, in the United States Navy inventory.

The capacity, the negative take-aways, are we don't have that -- there's only 26 total sonars that are out there. Finding that vessel that sunk right in front of us was just happenstance. We do not have the, the United States Navy, no navy, has the presence to be everywhere at all times.

That's why I think -- and I think the Chief of Naval Operations and the Commander of the Submarine Force, are all putting their, banking on trying to figure out a new way of dominating the undersea realm. And that includes putting unmanned undersea vehicles into greater use.

Why is it important? Why do you care?

The undersea realm is huge. It's, for the most part, it's unexplored, it's unseen, and it's unexploited -- and it's extremely important. You heard Dr. Kilcullen talk today about how everything is becoming more littoralized. Everybody is moving towards the coast: 80 percent of the world's population lives within 50 kilometers of the coast.

Additionally, 80 percent of the countries in the international community are maritime countries. They're all dependent upon -- all those countries are dependent upon maritime trade. 70 percent, or greater than 70 percent of the Earth's surface is covered by water. The average depth of the oceans is 14,000 feet. The United States Navy's nominal operating depth for submarines is 800 feet. The United States Navy's nominal operating depth for U.S. Navy divers, of which I'm a proud member, is 300 feet.

That means that 96 percent of the undersea domain is unexplored and untapped. And it's becoming a little bit more crowded in the battle-space now, because you've got commercial interests that are out there trying to figure out where we can find more oil and gas and mineral deposits, and you've got peer competitors, like China, trying to figure out how they can adapt to put submarines out to sea, and use their vital resources in areas that are contested.

So, the best case is that 6 percent of the underwater volume is actually exploitable right now -- unless we start using unmanned underwater systems. And this goes, again, back to what General Cardon was talking about when he talked about the interconnectedness of systems that are out there. Underwater cables, right now, provide 95 percent of all the international communications. So, we're dependent on these things. Additionally, there's a significant amount of underwater, undersea oil and gas pipelines that are providing the energy for all of our cars and our gas and our oil explorations. It's not all coming from the sea, but a good significant quantity is coming from it. That's why it's important.

We need to figure out a way of maintaining the free-market system, and one way to do that is to make sure we've got the sea lane of communication wide open, and it is open for use by all.

There are problems, though, with going down and trying to exploit this domain. Air, ground, even cyber is a little bit less daunting, because you can operate in that -- we operate, we live there. For the most part, we don't live undersea. So we've got significant problems with how we communicate, how we maintain long-distance travel, transit, underwater. And I'm going to get into these in a minute.

The unmanned undersea vehicle adoption by the United States Navy, we'll still have the same types of barriers that we've been talking about with the unmanned air and ground systems. There's always going to be a culture bias. It's not the same manned system, it's not a manned submarine that goes down there and does this exploration. It's going to be a guy sitting at a terminal who programs, usually, an unmanned underwater vehicle to go out and do an exploration with a sensor. It's not as glamorous, it's not as cool as being a submariner back in the 1940s and '50s.

Additionally, those same systems will be competing for dollars against these high-tech, exquisite systems that are manned. So an unmanned system, an unproven unmanned system will have to compete against a proven system that was brought to bear back in the 1950s.

So, those two problems, I readily acknowledge. But I think the biggest problem is, how do you get an unproven system to be proven? It's a Catch-22: You won't get the funding, you won't get the culture-bias, unless you can have the technology. You won't have the technology unless you have the culture and the funding behind it.

So I think the best way to go at this is to attack the technological barriers, and get a proven system.

So let me define what the current largest technical barriers are for doing, for implementing on unmanned, undersea system program in the Navy.

The first one is the requirement for an exquisite design. The Joint Capabilities Integration Development System, JCIDS, is the way that we go about acquiring systems in the Department of Defense. I think we've talked about it here for the Coast Guard. It's a very long and arduous process. It takes forever to get through. It may take years. In fact, the littoral combat system, littoral combat ship, which has been under development for many years, is just now getting to sea.

The point there is, we try to put too many requirements on these systems to be able to meet a full range of mission opportunities -- which reduces your ability to accept different techniques, or different commercial applications, and apply them -- or develop them. So it slows down the process, and it actually frustrates the system. That's one barrier right now.

Another barrier is data transmission under water is very difficult. It's very short range. It has been for a long period of time. It has to be within -- either connected, using some sort of a tether from the surface, or a very short-range, very slow data transfer.

Additionally, a third problem is propulsion. Propulsion problems come from lithium batteries' being the almost exclusive type of propulsion, with the exception of fuel cells, to try to get these unmanned underwater vehicles propelled throughout. And the problem there is they drain pretty quickly, especially when you start putting multiple sensors on there, in your exquisite design, that your JCIDS process has forced you to develop.

Finally, there's a lack of a long-term vision. There is currently an Unmanned Systems Road Map for the Department of Defense. It mentions unmanned underwater vehicles twice in this 179-page document.

So -- how do we get past that? My recommendations are, to get past the exquisite design requirement is to stop doing that. We've used this in the last 12 years. We've taken lessons-learned from programs like the Joint IED Defeat

Organization, from options like the Joint Urgent Operational Needs Statements, and OSD, the Office of the Secretary of Defense Fast Lane projects to speed along and accelerate technology for specific purposes. It's very simple to do that, all you've got to do is -- in fact, we used this on one of the unmanned underwater vehicles that I was in charge of when I was back on the Navy staff. We were able to take an existing technology, accelerate it as fast as we could to put it against a very specific mission. We didn't have to go out and meet all the JCIDS requirements that were out there, we just had to get it down the road so we could start developing it.

Additionally, we put it in the hands of users and operators so they could figure out exactly how to use this, and come up with their own doctrine and their own organization for the program that will work much better with user input. Instead, you're going to apply the technical JCIDS documentation and the requirements, you build the program, you throw it at the fleet, and the fleet would figure out how to put it together. Now, what you're doing with these faster programs, like JIEDDO and JUONS, and the USD Fast Lane initiatives, are to push them forward, let the users develop it the way that they are implemented, and then you've got a better system.

Finally, on the data transmission and the propulsion systems, the way to make that happen is to go out to academia, to the commercial industries, find out how they're doing it with their UUVs and their AUVs, and use that technology in that accelerated system to push out unmanned systems quicker and faster.

I will tell you, this is a very wide project. It has great strategic-level application, but really, at the operational, tactical level we've got to fix some of these problems before we can get to that strategic-level vision for the unmanned systems.

MR. SINGER: Great. Three really interesting presentations that touched on, I think, both the globalization of the technology, but also how it's moving into lots of different domains and roles.

Let me ask two questions. And the first is actually both for Tom and Rob.

And what we have is an interesting shift going on, arguably, where, you know, if you look at the history of DHS buying them -- as you mentioned, the really only option they had back in 2004 was they bought exactly what the DoD was using, they buy the Predator B.

Now, however, we have a booming domestic drone industry. And so, you know, you mentioned, for example, the Coast Guard looking at how do we put a small UAS onto a cutter, when tuna boats have been using the ScanEagle for almost a decade? Versus, you know, oh, why should we buy Fire Scout if we've got this other -- it's the same, arguably, we could look in, when we look at UUVs. The oil and natural gas industry has been using them, and has a much greater diversity of technologies than the Navy has in this space.

So how do we essentially deal with the fact that we are -- the challenge in robotics may be to spin in new technology, rather than develop our own? And how do we do that better in this space?

And then, Aba, the question for you is, you've been doing your research, you've had the very interesting opportunity to look at it both from a Japanese perspective, but also to spend a year here in the U.S. and meeting with a good number of U.S. military officers working in this space.

So when you're looking at how Japan might approach this is the future, what parts of how the U.S. is using unmanned aerial systems and its doctrine, its organization, its personnel, do you think apply over to the Japanese experience? And where are there differences, where are ways that Japan is unique and how we're doing it doesn't fit across?

So why don't we go with you two first?

COMMANDER DeBUSE: Great question. Thank you, Peter. And, again, like I said earlier, thanks for having me here. I'm a completed fellow, by the way. The Navy's so fast that we can do things twice as well as everybody else.

The point you bring up is great. We have to figure out a way of getting the technology that's existing already in commercial industry infused quicker into the process. And I think that's one of the largest hurdles to get around, is you cannot get the technology funded if it doesn't work. You can't fund it if it's not proven.

So, go out and take what's already on the shelf, put it into a faster system. And I actually had worked with JIEDDO folks a lot, and we did do the OSD Fast Lane process. We just went out grabbed an off-the-shelf capability, and put it through its paces as fast as possible.

Now, there's problems with that, because once you've got a system that's proven, then you've got to go back and find out where the offset is, which is which one of your existing programs is going to give up money for the full development and fielding of that system.

I like it. I think it's great, the stuff that we did. But it was such a small scale, to get it on a larger scale, to understand the unmanned systems dilemma, I think we've got to -- it almost requires a -- I know we've done a little bit of revision of the Defense Acquisition Program, but it almost requires a reliance on that because we are so far behind in some of the technologies that the military is able to put into their systems, as compared to the commercial guys.

COMMANDER KING: Thank you, Peter, for the question. I'll attack it one way, on two different lenses.

One, with the Predator B, a couple -- I guess some back-story on that: Personalities matter within the Customs and Border Protection. They did bring in some personnel from the Air Force that had familiarity with the Predator B. And it's not uncommon for DHS to get assets, whether they're a physical asset or a technology from

DoD. There's a good history of that through both cutters within the Coast Guard getting old Navy assets and utilizing them, or aircraft, whether it's the C-130s, the H-60s, or even the C-27s that are in the budget now to get. Given the size of the budgets, we always have our hand out eagerly when someone is able to give us something.

One of the other back-stories, I think, with the Predator B selection was the congressional support. It was highly encouraging -- well, not highly encouraging, the support was kind of targeted in getting that way towards that avenue of forcing DHS to investigate and assess the UAS capability.

As far as taking something off the shelf type thing, I think the small UAS is going down that way. It might have been a little bit late, as you say, with the tuna fleet, with the ScanEagle. The ScanEagle is what they're testing out there. And some of that, some of the back-story with that acquisition of the UAS within the Coast Guard was the UAS was part of the Coast Guard's Integrated Deepwater Acquisition Program that was started in the late '90s. However, that had some issues with it, and that was terminated, and then the Coast Guard took over the acquisition efforts. Previously, the concept was to go with a lead-systems integrator that would acquire a system of systems. However there were some issues with that acquisition philosophy, and that's been terminated. And, as I said, the Coast Guard is looking at that, and they're working with the Navy to look at that small UAS capability.

COLONEL SHIRAI: Yes, thank you very much for a difficult question for me -- for Japan, that's very difficult to explain.

So, we are not good at created our own doctrine. So, before World War II, so the Japanese Imperial Navy invaded, the Royal Navy and army invaded Germany. And invading other foreign countries is our good talent of the Japanese people, I think.

Then after Korean War, we were invaded the United States military, so, by contracting Self Defense Force. And maybe just our force structure must be just more

of the U.S. Air Force. So it's very easy to incorporate UAV (inaudible) by emulating United States Air Force.

And so before creating a doctrine, so even our attitude so far, so before creating a doctrine, we acquired some weapons. After that, so we're going to make how to use that weapon.

So, I can say in that attitude, to enhance our force structure, so there are a lot of ways to create new weapons, a new weapons system or architectures.

Then maybe senior Japanese and U.S. defense officials agreed to cooperation to cope with cyber attack at their first working group meeting on the cyber (inaudible). Then Japan Self-Defense Force will send personnel to cooperate with the U.S. military to study and train against the cyber attack. So, maybe we will do the same thing in terms of, in regard to the unmanned systems. So that's our, I can say, perspective to create a new unmanned system.

So, but so I think -- I daresay we need the doctrine first. So we have to change that kind of attitude.

MR. SINGER: Do you think that is the best decision, to emulate the U.S. in this space, given, on one hand you have the historic close relationship between JASDF and U.S. Air Force. On the other hand, one could argue that the strategic situation that the Air Self-Defense Force is facing, in terms of patrolling islands, surveilling at sea, dealing with scrambling threats is very different than how the U.S. Air Force developed UAS, which was looking primarily at how do I support troops on the ground in Afghanistan?

Do you think that's the best path to follow? And are there modulations that might be made to reflect that?

COLONEL SHIRAI: Yes, that's a good point, as well.

So, we don't have that kind of doctrine. So, we use the UAV just for the enhancement of the ISR mission, that is all. We have no knowledge to operate UAV.

So, first of all, we have to learn about what is a UAV, or something like that. But, so, our force structure is very similar to the U.S. Air Force. So, I can say that it's easy to cooperate, and easy to make (inaudible) of the UAV. So we have no time to incorporate UAV into the JASDF, because East Asian security environment is very unstable.

So, you argue -- I understand what you want to ask me, it's very difficult to explain that.

MR. SINGER: Let's open it up to the audience. And, again, when the mic comes to you, please stand and introduce yourself.

Right here in the front.

COLONEL EKMAN: Hey, gang, how's it going. Ken Ekman, I'm a fellow fellow.

So, each of you is talking about adopting a new capability that gives your respective agencies greater capacity, greater capability to perform a set mission. Now, it's kind of legendary that there are cultural resistances to unmanned vehicles. But I think a corollary there is that unmanned-for-unmanned's sake doesn't necessarily add value.

So I was wondering, as you looked at material solutions for the mission spaces that you were trying to fill, how much inertia was there, forcing you to go to an unmanned route, where perhaps a manned system could have provided equal or greater value?

COMMANDER KING: Thanks, Ken.

For the Coast Guard, specific to the Coast Guard, the unmanned aerial system is really to augment our aircraft fleet and our air capability. We're not looking to replace it. We have it just for one specific set of surveillance. We still need all the other aircraft to conduct things that you actually need to deploy a rescue swimmer, or to do those other Coast Guard missions.

So there's not as much reluctance to incorporate UAS into that, into our culture and into our operations, as I've seen in some of the other agencies.

COMMANDER DeBUSE: Thanks, Ken, I appreciate it.

The Navy is already moving in this direction, in particular, on the mine warfare aspect. We have manned systems right now, the hunting and minesweeping. The mine-hunter class ships have already been decommissioned. We turned them over to -- we sold them on the market. So we're down from 26 ships, now we're down to 14. Actually, we're down to 13 since one ran aground last year.

So, we really are looking at how we can increase the capacity of our current manned systems. I don't think it's every going to be a -- well, it may be, in the long term, a complete replacement for the manned systems, at least on the mine warfare side of the house. But right now, it's just going to be an augmentation of that -- the way to get out there and find the contacts, and then go and prosecute them, that's probably as far as the mine warfare side of the house is concerned.

On the submarine side of the house, it will never replace the manned systems. That's a bold statement. I think they are, the Navy is already looking at ways n which we can reduce the strain and the operational tempo of the submarine force by having common, routine, mundane tasks that don't necessarily require a manned system to go do it -- can we put an unmanned system out there, if we augment a manned system and allow them to deploy a UUV to go accomplish that task.

So, I think it's actually, the culture is willing to accept these unmanned systems right now (inaudible).

MR. SINGER: Can you -- you left yourself open on that last one. Can you explain why "never" in anti-submarine warfare, when one could imagine certain roles where you might want, for example, a series of relatively cheap and dumb UUVs to do area denial in a littoral space that I don't want to send a manned, $2 billion attack-sub into?

Is the "never" because of capability, or is it because of, at the end of the day, you're talking about a submariner community?

COMMANDER DeBUSE: It's not because of capability. The UUVs allow you to get into spaces that you can't get into with a submarine -- for sure. You can get into the littorals much more effectively with an unmanned vessel, or vehicle, and you can get into deeper water with an unmanned vehicle.

The community aspect of it, submariner against submariner-thinking, the two thinking systems trying to adapt, at this point in time, I think that that's a bridge too far. Maybe in the long term, when we've gotten to the point where we can totally deny the enemy or the peer competitor the battle-space -- but right now, we can't do that because, again, it's a capacity issue, and maybe there's a technology issue.

MR. SINGER: Aba, is there an argument within JASDF about why don't we just buy more Hawkeye, more naval surveillance, you know, more P-3, instead of buying this new thing? Why don't we just get -- if the problem is we're wearing down our current systems, why don't we just get more of them?

Do you see that kind of argument happening?

COLONEL SHIRAI: Well, so I think three points we need the unmanned system.

So, first of all, it is inevitable to accept the new technology, and keep up with the times, (inaudible) the information age. And we are so behind in regard to the unmanned system for military activity, and just need to learn how does this new system fit into the force structure first?

And second consideration is human resource, because the Japanese population is decreasing. According to some studies, the Japanese population will decrease 6 million in 2025. And the ratio of elderly people, over 65, will be 25 percent, increasing 7 percent.

So JASDF has 47,000 personnel. If JASDF keeps this number of personnel in 2025, so we would be confronted with the difficulty of recruiting as much as increasing 7,800 persons in 2025. So we cannot tolerate that kind of number.

So, if we create a new AWACS troops, AWACS squadrons or something like that, so we can't afford to maintain that kind of troops, squadrons.

The third is cost. The cost of new commissioned weapons is soaring. So the gaps of the air power between advanced countries and the developing nations will be expanding -- and, especially, we are now forging to acquire the F-35. So maybe we can't get the number of the F-35 we want, so at a time. So we have to fill the gap of the air power in the future.

MR. SINGER: Right here in the front.

COLONEL JOHNSON: Johnnie Johnson, a fellow here. I've got a question for each of you.

So, for you, Tom, in regards to U.S. capabilities on the borders, are the Coast Guard forces, or Border Security, working closely with the National Guard units that are postured, potentially, along the borders, and using those capabilities? I know some of those units may have unmanned systems that can augment the security mission that you guys have along the borders, or even along some of the coastlines, as well?

And for you Aba, in terms of joint or combined training with U.S. forces on U.S. capabilities, you talked about, you know, not having a doctrine, or not having experience. Have there been opportunities lately, or recently, where you've been able to train with forces -- whether it's in Japan or whether Japanese security forces go somewhere else to receive that kind of training? Is that something that's already ongoing, or that can be planned in the future to build your capability for UAS?

And then, for Rob, is there any work being done on teaming of underwater and air unmanned systems, in terms of ISR, and teaming those capabilities to create a new type of picture, where you can vector in on a target using both systems?

COMMANDER KING: Thanks, Johnnie.

For the UAS systems along the borders, CBP has utilized -- I don't want to say "farmed out" the Predator hours, but other agencies have used some of the Predator hours, whether it's forest fires, looking at the surveilling of that, or some other state and local agencies. So there has been other agencies' use of those, outside of CBP and the Coast Guard. So they've worked with that. Whether it's specifically National Guard, I don't have all the details --

MR. SINGER: He's asking the inverse, is whether CBP has used National Guard resources, the way it has in other areas?

COMMANDER KING: I don't have any data on that.

And as far as the Coast Guard's use of it, they have used some maritime controlled aircraft hours to surveil, specifically down in the Caribbean they've used those kind of hours. Some of that has come from the National Air Guard and such.

COLONEL SHIRAI: Thank you for your question.

So, I did say we don't know what is UAV, so at first I thought we learn about the UAV from the United States military.

And I'm very interested in a joint capability group as far as UAVs Center of Excellence. So, but I've never been there. So we have to send, so JASDF should send a person to that kind of facility, base, center of excellence. And we have, we get a lot of the knowledge to operate UAV.

And after that, so maybe we procure the UAV, after we procure the UAV, so we make, we're going to get training with the United States. Thanks.

COMMANDER DeBUSE: So, I don't know if there's been teaming between the -- my research hasn't uncovered any direct link between the air systems and the unmanned underwater systems. But that is very important. As Dr. Kilcullen brought up, you've got this incredibly complex battle-space in the littorals -- you're talking cyber, air, ground, and the underwater portion.

It has to happen. It's probably down the road that it will occur. I know we do coordinate between the unmanned underwater systems right now, and the unmanned surface systems. It's very simple to just push it right up and see if we can vector in, and then target on that stuff. So I don't think it's a bridge too far. I think UUVs have to develop a little bit more, and be more incorporated into the fleet.

SPEAKER: (Inaudible), this is another fellow fellow.

My question really is to any of you, but very specifically on the comment that you made, Rob, on the taking it to the fleet, let the fleet figure it out how best to utilize it.

And my concern is, you know, if we look at it in a technology-in-warfare type of lens, do we short-sheet ourselves of fully utilizing the capacity of any technology that we take forward, whether it be UAS, very specifically UAS, by allowing the fleet to develop the evolutionary capacity -- and if you've looked at that as a risk to innovation, revolutionary. Obviously, not a whole lot of stuff, revolutionary technology, comes from the fleet. But, certainly, if you look at it as the fleet doesn't really know how to fully utilize it, maybe organizationally they won't make the best placement of that asset..

So, just wondering if you'd seen that as a risk?

COMMANDER DeBUSE: So, I actually had that issue, that problem. We had -- trying to figure out a way that we can put, instead of having divers go down and look at contacts that were identified by a mine-hunter, is that a mine or is that not a mine, why am I not doing that now with an unmanned underwater vehicle when, in Iraq or in Afghanistan, I'm using an unmanned ground vehicle to go up and do my initial surveillance and reconnaissance?

And, yeah, they didn't do it right. They totally messed it up. But when the acquisition guys came down and said, "Look, we've already got this on-the-shelf technology. We threw it at the fleet. They put it in the wrong place." We helped them

guide where it went, from the acquisition perspective, and said, "We think this is where it ought to be."

I think that's a role that the big Navy, or the big organization has to have.

But when the fleet took it, and they finally adopted it, hey, this is how we're going to use this thing, it took off. And they started using it very similar to the way we use the PackBots and the Challenge robots over in Afghanistan, instead of putting people at risk down on an unknown contact, now we're able to go down and look at with a camera, with a sonar, get right in close and take a look at it. And they're coming up with the doctrine, and they're putting it in the right place.

But I think, initially, they will make that mistake. We've just got to work with them and not take your eye off the ball.

MR. SINGER: Extend that question and link it back to the past two questions: Each of you framed it as role where the technology could augment what we're doing right now. So, I'm thinking of the parallel of, you know, interwar years, it's a lot like having a group of Navy officers up here and saying, "Oh, no, no, you'll get planes," and they go, "Yeah, the planes are going to be great. We've got them on the battleship, it scouts ahead. It allows us to do our job much better. We are embracing planes."And, of course, that's not the real game-change of planes.

So, when you're looking at these roles, how do you change it from just being taking something new and putting it in old boxes, and truly reshaping how you do business -- whether it's in undersea environment, or whether it's how Japan protects a challenge to the south, in terms of disputed islands, or Coast Guard looking at how it does maritime search and rescue.

How do you allow the technology to be truly disruptive, rather than just augment what we're doing right now?

COMMANDER DeBUSE: I'll jump on that one.

I agreed with you when you brought it up earlier, that we don't need to necessarily have these systems that go out and augment, but you could actually have area denial. Or, put it in the other perspective, you could go out and put a UUV that autonomously dumps off cheap sensors, or put it on a very -- you know, they've got these gliders that can last for up to a year, or the floats that can last up to five years on the battery life, and it can just sit there and sense. And then you've got these taking the entire requirement to have a manned system in that area out. You don't need to have them in there at all.

And then you come with a higher level technology that's got the ability to do, you know, to prosecute that contact -- whether it's a submarine, whether it's a contact that we don't know on the bottom, just put a camera on it, or blow it up as if it's a mine, or actually put a submarine out there. That would be a game-changer.

I just, in the near term, I don't see that it's going to be there in the next 5 years or 10 years -- although, I will admit that when Hyman Rickover was given the task of putting nuclear power to sea, he did it in nine years, which is four years less than we've been at war with Afghanistan, or in Afghanistan.

So, I think that there is an impetus. It's not there right now. There's no requirement, there's nobody pushing us forward to get us to that level. Maybe if the fiscal environment changes, maybe if there's a peer competitor that comes on line, then we'll have that impetus to push us and get us out of the manned systems, and we can try to figure it out. That's what happened in Iraq and Afghanistan. We kept getting beaten up by IEDs, and we had to figure out a different way of going in and attacking them.

So I think that's kind of what's needed now.

COLONEL SHIRAI: And maybe the Ministry of Defense seems to be interested in a HALE system, (inaudible) representing. Because of air (inaudible) issues, and the air space issue. And if we pursue to get strategic information, we need the HALE system, regardless of cost.

But we have another choice, if we focus on cost-effective and mission requirements, HALE system, such as MQ-9, (inaudible) will be suitable to get tactical information around the remote islands, I mean, the disputed islands.

So I think it is very important to build up the distributed common ground system among the allied forces before we get the kind (inaudible). So it depends on that doctrine, we have to study about this one first.

COMMANDER KING: I guess in my initial question I was kind of looking at it as a totality of the Coast Guard aircraft, but as far as a UAS augmenting versus replacing, you could definitely use the UAS to replace manned aircraft in the ISR-type missions, but you would still need the rotary wing for a lot of the prosecution, whether it's prosecution of a SAR case, or prosecution of an LE case. And a lot of times, right now, it's a vision that the small UAS on board the cutter would replace the mission of that helicopter employed in the surveillance and reconnaissance mission aspect, and reserve the helicopter for exact prosecution.

So, it would replace and augment, I guess, at the same time.

MR. SINGER: Any other questions?

Well, I want to thank the three of you for not only doing some great research, but presenting it to this group, showing a lot of the key changes and questions that we'll be wrestling with in the next decades.

And we're going to take a break now. There should be cookies out in the hallway. The General spoke about Google strategy for keeping people going. One of the things, if you do go to the Google cafeteria, is they only serve caffeinated desserts and caffeinated drinks. So it's one of the many ways that they're using food to motivate people. And so we're copying it the same.

Go enjoy, and then we'll be back in here in a couple minutes for the last panel. (Applause.)

(Recess)

DR. WATSON: I think if everybody takes their seats, we'll go ahead and get started. I'm Cynthia Watson from the National War College, and I'm delighted to welcome you this afternoon, and I want to note that everybody who stuck around till the end, stayed for the best. And I realize that in Washington, where there are always competitive things going on, it says a lot that you did take the time to come this afternoon.

I think this is a really important panel. Every panel chair says that, but as you all know, General Dempsey has been talking a lot about the changes to the force. He's been charging us at NDU to take a look at desired leader attributes, at how we do education. And all three of the topics that are on this panel are things that we're looking at, at NDU, whether it's a matter of looking at ways to deal with ethical questions, which our third paper will talk about, or whether it's looking at what sorts of curricular and other developments we need, which the first two papers will look at.

We're trying to look at how we restructure the force just within our particular window, and we have three people who have spent most of the year taking a look at this. We'll start with Colonel Johnson and move from there.

COLONEL JOHNSON: Thank you, Cynthia. And I want to thank the crowd for hanging around. I know it's the end of the day, and usually the last group is speaking to a bunch of crickets. But thanks for hanging around.

So, my topic is on "Army Readiness - A Model for a New Era." So, much has been written on readiness over the past 20 years. There's plenty of literature out there. If you really want to do some research, it's volumes and volumes of information on readiness. And there's plenty of examples of both success and failure throughout our history when it comes to the military.

So, I would postulate that readiness generally ebbs and flows along with attitudes and wills of citizens and those elected to represent them. So, military readiness, in the simplest terms, is really about choices. So, there's really three

questions that kind of get after readiness itself -- three basic questions.

So, the first is, what is it that we want our military to be able to accomplish, or ready for what? The second is, how much of it do we want, or ready of what? And then, the third question that is generally asked is, when do we need it, and ready for when?

As part of my research, I dug into a couple of -- well, more than a couple, but one of the main sources was Richard Betts' book on military readiness, concepts, choices and consequences. It's a very thorough book on readiness. So, he provided an enduring definition, in my view; the ability of forces, units, weapons systems or equipment to deliver the outputs for which they are designed and to deploy and employ without unacceptable delays.

Now, so, in my research, I contend that the Army readiness system is really too (Inaudible) driven, and it fails to capture in clear terms the range of capability that a unit actually can perform. And moreover, as mentioned this afternoon or this morning by General Cardon, our acquisitions system is very burdensome, and it really hinders the Army's ability to rapidly field new technologies that offer increased readiness benefits, and ultimately enhances employment options in support of the lieutenant commander.

And on a positive note, in terms of readiness, it's tied into the joint process now. So, under the Defense Reporting Readiness system, which is a program -- a joint program that captures the statuses of joint forces and provides visibility or readiness to combat commanders, the chairmen of joint chiefs of staff, secretary of defense, and obviously, units that are reporting in. So, as the Army looks at regionally aligned forces, it kind of ties perfectly into where the defense department is going with readiness and in joint force.

So, as I dug into my research, you know, over the past year, it's been a lot of really -- we call it hand wringing or leaders trying to explain, really the service

chiefs on the Hill, where each of the services are in terms of readiness and what that -- what shortfalls that we're facing in the years to come.

And so, after hearing all of the testimony and having come out of (Inaudible) command myself about a year ago, I said you know, this is something I really want to jump into. So, I looked back into history a little bit, and I'm not going to through a bunch of it, but there's just some key themes that you can pick up through history that kind of, you know, shows a path of how we got to where we are right now with respect to how it's viewed and how we report it.

So, going back to both of the World Wars and up to the Korean War, you know, so the military general was unready for any of those fights. In other words, we had a very small force that we maintained preceding each of those major conflicts. And it wasn't until we were pulled into it, or we declared war that we actually started to build readiness. So, for the first three major conflicts in the 20th century, we went from pretty much a cold start to full mobilization of national resources. And so that's kind of how we started.

It was really the national mindset that we are going to fight as a nation, and so we're going to build readiness in masses. And so, you know, of course, we had conscription in a draft, and so we had the manpower, all the defense industry (Inaudible), so we were cranking out tanks and ships and aircraft. So, World I and II and even the Korean War, that's kind of how we started in each of those wars.

And then, after the Korean War, we shifted a little bit, because you know, our objectives were no longer total victory as it was in the first -- World War I and World War II. And really, it was also the outset of the Cold War with the Soviet Union. So, we decided at that point, at least President Truman did, that you know, we're going to maintain a sizeable force. We're going to mobilize a force that's bigger, and we're going to keep it ready to go. But we also have our strategic deterrence as well, with our atomic weapons.

And so, we kind of balanced readiness with a larger force that, of course, we still had forces in both Germany and Japan, so we had those forces that were, you know, in the rebuilding -- occupying forces, so to speak. So, we still maintained a sizeable force to deal with anything else that popped up.

And so, that's kind of how we started moving along the lines of limited wars. And limited wars meant that resources were not as large and exhaustive as they were in larger conflicts. So, we stayed on that footing, obviously, through the Korean War and through the Cold War, and then leading up to Vietnam.

Now Vietnam, as we all know, it really was a mission creep kind of war. We went there to train the South Vietnamese, and then ultimately, we started getting more and more involved in it and we started building forces up. And before you know it, we are in there side by side with them fighting the North Vietnamese. And so, that mission creep -- oh, by the way, that was the last war that we were conscripted. That was the last war that we actually had a conscripted force.

So, over that 8 to 10 year period, at the outset of it, the public had a chance to really understand, you know, what we were fighting for, and we kind of lost support -- the military forces lost support from the public; and as it started to wane, as did the attitudes of those who served. And so, at the height of the war, the Vietnam War, we had about 1.5 million troops on the ground in South Vietnam; a very sizeable force. So, we were all in at that point. But once the support left or declined, within three years of that height -- no, actually, six years, we drew that down in half before we pulled all the troops out of Vietnam. So, it was a very fast off ramp of troops.

And then, of course, we're all aware of post- Vietnam and how the troops were received here back home. And so, a hollow force -- your term hollow force kind of set in, where you know, we had -- the ranks were thinning, and those who were remaining were not in the highest of spirits.

And so, at the end of that period, of course, the all volunteer force, really

towards the late ‘70s, early ‘80s, all volunteer force was formed. And so now, it was really a new -- what I viewed as a new life pumped into the military. And so, in the ‘80s, as we know, we had another build up, which I thought was really Cold War part 2 or part 1.5.

We had a sizeable build up of military power and large expenditures. We brought new weapons systems on board; the M1 Abrams tank, the Apache helicopters, the Bradley fighting vehicles and other systems were brought into the force. So, we spent quite a bit of money bringing the Army back into relevance, and it also precipitated the fall of the Berlin Wall.

And so, the other thing that occurred in 1986 was the Gold Nichols law, which really made us, as a service, come -- as services come into a joint environment. So, I'm going to fast forward a little bit, because I will kind of get back to that in a minute here. So, that brings us into the last 12 years of war, really. I'm going to kind of fast forward.

What has happened to the Army in the last 12 years? I commanded a battalion in Iraq, and so we trained for a different kind of fight than what we actually deployed for. So, in my unit, we had -- you know, we had tanks and Bradleys. And so, we trained on those types of systems. But when we deployed, we actually fought a counter insurgency. So the reported systems that we used, we reported our capabilities, as we should have, but our assigned mission was different. And so, that caused a little bit of a mismatch in terms of how we reported the readiness.

That happened to a lot of units, and it’s happening every today as units prepare for deployment. You have units that are designed a certain way, whether they're an armored brigade combat team or even infantry, but when they deploy to Afghanistan now, it’s a different set of missions and tasks. So, how do we kind of capture that? How do we change our system to accommodate for that?

So, what we’ve done in the past 12 years is that we’ve accelerated

capabilities development, and we've rapidly fielded equipment, and there's all kinds of new systems that we brought on board pretty quickly and integrated those systems in those vehicles into the force. MRAPs were part of those types of systems; also, IED detection and defeating systems, as well. So, all of those were fielded to units once they got into the theatre.

But none of those were captured in our reporting systems. None were captured. So, once again, there's a mismatch. So, the Rand Corporation did a study on readiness for the past 12 years, so they kind of -- they really did a comprehensive study on that. And so, they came out with a couple of recommendations from that, that I felt were pretty relevant to my research.

So, the first finding was that the Army needs to take stock of where it is today, so that it can assess where it needs to be and what it must do to get there. That was one of the core recommendations. So, the Army just -- you know, we've got to figure out where we are and where we want to go.

The second thing they recommended was, you know, we have a new decisive action concept that units that are deploying, they deploy to the NTC, National Training Center in Fort Irwin, California, and they train in the decisive action training environment, which is the violence maneuver, wide air security -- some of those are (Inaudible) tasks, and even some of the stability tasks, as well. So, all of those are trained at a CTC to prepare a unit for all of those types of contingencies when they're deployed. So, that should be captured in how we report our readiness, as well.

We should also adapt -- they also recommended that we adapt a readiness reporting system to rapidly and (Inaudible) incorporate new and emerging technologies, i.e., cyber, robotics and (Inaudible) systems, and in a way that accurately assesses enhancements and jointness.

So in conclusion, our system needs to be updated to meet today's global demands and global security environment, and the range of missions that we're facing

today. And so, we have to adapt our system in the Army for this increasing pace of change as technologies spin into the force, and we need to capture those changes and document those in our readiness system.

And then ultimately, the model that I would propose -- it kind of builds into a joint context, it's a joint construct. And so, it's not just the Army, it's what the Army provides to the joint force. And so, the DRRS system, the Defense Readiness Supporting System kind of captures that, as well. That's what system is designed to do. So, I look forward to your questions. Thank you.

LIEUTENANT COLONEL MARX: Good afternoon. When the line up came out for this symposium, I was a little bummed that I was part of the last group. But as I heard some of the other speakers talk today, it really -- some of the things they said lean nicely into what I'm going to talk about.

Dave Kilcullen discussed earlier today -- he discussed the importance of retaining our war fighters. Lieutenant Colonel Campbell talked about not doing the things the same way we've been doing them forever; basically, change. And Commander Pham talked a little bit earlier today about how people are the asymmetric advantage. And that ties nicely into what I'm talking about, because I spent my time here at Brookings thinking about comparing and contrasting to the other services, how the Marine Corps promotes officers; specifically thinking about promotion based upon merit versus seniority.

Promotion is based upon merit, once you're senior enough (Laughter). The Marine Corps falls under the same rules and regulations as the other military services for promoting their officers, and that regulation that governs this process is called the Defense Officer Personnel Management Act, or DOPMA.

As the nation pulls out of Afghanistan, as required to drawn down, end strength numbers are coming down in the Marine Corps. As the Marine Corps' end strength numbers get smaller, in an effort to not break faith with career officers, the

Marine Corps has managed this drawdown primarily through attrition and early out incentives. And due to the economy, senior officers aren't getting out fast enough, and it's causing a log jam, a backup in the system that is negative affecting retention.

The Marine Corps promotes to vacancies. And what that means is, a captain can't get promoted to major until a colonel at the top retires, thereby creating a vacancy for a lieutenant colonel, a vacancy for a major, and then, a vacancy for a captain.

Slowness to encourage people to leave or force people out at the top, and I'm specifically talking about lieutenant colonels and colonels, has slowed down promotions for junior officers and broken faith with the younger generation. Through my research, I found a captain who had waited two extra years to be zoned for promotion to major. I met a major who waited 27 months to pin on his newly selected lieutenant colonel rank. I met a major who had been frocked to the rank of lieutenant colonel for the majority of their command tour.

There are many more examples like this, and when officers are at different career crossroads and decision points on whether to continue service or not, these obstacles to promotion, having to wait years to pin on the rank you have earned, I believe, has influenced many quality individuals to leave. The good news is that steps have been taken. The Marine Corps has incorporated what's called the Selective Early Retirement Boards or SERB; maybe you've heard about it, and has identified some individuals and selected them for mandatory retirement.

The problem is, they ran these boards two years too later and two years after the other services had been running them. But mandatory selection for retirement has definitely been successful and caused behavior modification in the Marine Corps that we could talk about in Q&A if you desired.

So, in two minutes or less, I painted a very small picture of a problem that I have perceived; quality officers leaving the service because of promotion

timelines; junior officers and senior officers, alike. And I wondered if there were ways that the Marine Corps -- if there were things the Marine Corps could do to ensure the most competitive didn't leave.

And it's not to say that the people that are staying, that are waiting it out aren't good, because they are. But we need to ensure that the pools of people to select from, from the flow of promotion aren't negative affected by something as fixable as slow promotions. Last year, I attend the War College and studied alongside of officers from every service, and learned what the other services are doing to encourage retention. They are promoting some, the head of their peers, to ensure they stay.

If you don't know, there are three promotion zones: The above zone, the in zone and the below zone. And criteria is based primarily on time. The above zone are people that have been passed over for promotion. The in zone are those who are in zone for promotion. It's their turn to be looked at. And the below zone are people who should be looked at for promotion the following year. The below zone is an indication of who should be in zone the next year.

Regulations allow for 10 percent of the selectees to be promoted -- excuse me. Regulations allow for 10 percent of selectees promoted to be selected from the below zone. All services can reach down into the below zone and promote 10 percent of the people ahead of their peers from the below zone.

And while researching this topic and running down different research threads, I discovered that the Army, the Navy, the Air Force and the Marines all have different approaches for selecting people from the below zone for promotion. The Army takes full advantage of the 10 percent authorization. The Air Forces uses approximately 4 percent of that space. And based upon reviewing 10 years of data, though the trends go back much further, on average, to colonel from the below zone, the Army promotes 38 a year; the Air Force, 72, the Navy, just under 4, and the Marines, 0.

To lieutenant colonel from the below zone: Army, 104, the Air Force,

109, the Navy, just below 5, the Marines, 0. One person has been selected in the last 12 years that I could find. Those are significant differences to me; 72 to 0 109 to zero. The Army and the Air Force seem to be managing this program successfully, and I haven't found a specific answer on why the Marine Corps doesn't take advantage of this opportunity to select from the below zone.

But slow promotions are definitely a challenge to retention, and combined with other challenges, warrant further discussion. Additional future challenges include changes to benefits, retirement, medical, cost of living adjustments, et cetera. If the benefits package dwindles, retention will be a challenge. Two-to-one dwell time. The Marine Corps of the future is built upon being deployed one day for every two days that you're home. And right now, it's about a three to one ratio.

Being deployed is great, but being gone 33 percent of your time is challenging and will affect those who decide to make a career out of the Marine Corps. Millennials are another challenge; defined as those who were born between 1980 and 1999, those who are between the ages of 13 and 33 right now. A 33 year old officer in the Marine Corps is a midgrade captain. Okay? Millennials and this captain that I'm talking about is the future of the Marine Corps. And research shows that this generation expects to be promoted when they're ready, not when they're tenured.

In conclusion, the sky is not falling, but when you combine slow promotions with other multiple issues, retention will be affected. The Marine Corps is not using a tool in their tool box that could be a very effective retention tool. Identifying those officers who are clearly superior and promoting them head of their peers is a retention tool.

And my recommendation in my research is to use the below zone at some level; maybe not the full 10 pct that's allowable, but there should be some opportunity for top quality officers to advance more readily, more rapidly than the average, if the best possible officers are to be retained. Thanks.

MAJOR BURRIS: Sir, I can say as the junior panelist today that I am all for early promotions. (Laughter) So, thank you, Brookings, thank you Dr. Singer, Colonel Ekman, for this opportunity.

The title of my research is "Thinking Slow About Sexual Assault in the Military." It will be published in a forthcoming edition of the *Buffalo Journal of Gender, Law and Social Policy*. And I hope you'll excuse me. I have scripted today's remarks so I can stay on time and we can get to Q&A.

So, when the reports indicate that an estimated 26,000 people in the military experienced some form of unwanted sexual contact during fiscal year 2012, what is the impact on those who consume this information? The number standing alone is unquestionably alarming, as are its implications. And while Americans general hold U.S. service members in high esteem, the narrative that sexual assault is rampant within the ranks feeds into impressions and intuitions that feel archetypically right.

Indeed, traits that appear well suited to expeditioner in combat, physicality, the capacity for violence, intense loyalty appear equally ill-suited to the domestic strictures of an increasingly pluralistic society. A sudden proliferation of headline grabbing cases lends credence to this feeling.

One might reasonably intuit that the military does, in fact, suffer from an entrenched culture of sexual violence, and that members of the military, increasingly strangers to the nation's citizenry, might well be capable of perpetrating sexual violence on an alarming scale.

Similarly, it feels archetypically right to remove the longstanding statutory authority of senior military commanders to decide whether or not to criminally prosecute those in their charge suspected of committing sexual assault. The approach feels outmoded, borne of past necessities that shouldn't constrain a technologically advanced and globally mobile armed force. It also appears to insulate the military from modernity and accountability, representing perhaps, the last vestige of a tight-knit, predominately

male fraternity that privileges organizational and individual fealty above all else.

Yet, stories that feel archetypically right, even though supported by gripping anecdotes might also grossly misrepresent reality. Such is the case with the military's so-called sexual assault crisis. The intuitively compelling narrative advanced by the media, some members of Congress, victim advocacy groups and others is not empirically supportable.

The data suggests that the prevalence of sexual assault in the military is comparable to similar civilian populations, as are reporting patterns. Senior military commanders are more aggressive in exercising their prosecutorial discretion in sexual assault cases than licensed attorneys. And removing senior commanders' authority to make prosecutorial decisions will not improve extant conditions.

If this is what the data suggest, then the crisis narrative was arguably borne of something other than data. To be sure, it appears to have been borne largely of a disparate group of concerned and well intentioned individuals thinking fast about a problem that cries out for thinking slow. Now, the phrase thinking fast and slow was, of course, coined by Nobel laureate Daniel Kahneman and reflects groundbreaking work conducted in the field of behavioral economics.

Thinking slow about sexual assault in the military means marshalling the discoveries of Kahneman and what is known about the workings of the mind in order to avoid systemic errors of judgment and reason. It means privileging a slower, more deliberative and effortful form of thinking fueled by empirical evidence and critical self examination over a faster, intuitive, and effortless form of thinking fueled by non-statistical anecdotes and over confidence.

Avoiding these systemic errors is critical to framing the problem, which is critical to identifying meaningful solutions. And this is a really important point. To abjure a crisis is not to abjure the existence of a problem. Sexual assault is a problem in the military as it is a problem in our society, as it is a problem in all societies.

The core argument here is that the recent uptick in media and congressional scrutiny of the military sexual assault prevention and response efforts does not, ipso facto, transform a broader societal problem into an institutionally specific crisis. To be clear, this is not an argument for the status quo or for the indefeasibility of the military justice system. Rather, abjuring a crisis and the prevailing crisis narrative to seeks to, one; reduce the impetus for potentially counterproductive reform. Two: Avoid the serious moral hazard associated with over prosecution which could result from the military's efforts at self-correction; and three, avoid the insidious harm the crisis narrative causes sexual assault victims.

To the extent this narrative persists, victims may be left with the decidedly false impression that the system is so irretrievably broken that there is nothing to be gained, as well as much to be lost by participating in it. Artificially depressed reporting, already a serious problem in the realm of sexual assault may result. If victims do not report, they are unlikely to receive the care and support they need, and the alleged perpetrators will not be held to account, if in fact, they committed a (Inaudible) offense.

Thinking slow endeavors to avoid this self-defeating cycle. It also counsels an appreciation for a difficult reality. There is not, nor will there ever be an acceptable level of sexual assault in the military. At the same time, the notion that any institution, however powerful and centralized, is capable of eradicating a class of crimes that have plagued humanity throughout history appears as implausible as it is a historical.

Even so, senior military officials routinely employ terms like eradication, elimination, zero incidence and zero tolerance in relation to sexual assault. If one accepts a realist view on the nature of crime and our lack of an adequate deterrent, these goals are not achievable. Setting unachievable goals assures suboptimal results, and may, in fact, exacerbate the problem.

The metric by which success is judged ought to be the military's ability to reduce the incidence of sexual assault vis-à-vis comparable civilian populations. This will require the DOD to synchronize methodologies with other relevant government departments and agencies, to begin gathering and reporting data on sexual assault in a manner that facilitates the apples-to-apples comparisons of data across similar demographic groups.

This whole government approach could aid in isolating the problem and in turn, assist in the allocation amassing the finite resources in areas where those resources are needed most. To the extent the military is able to realize and maintain lower instance rates than comparable civilian populations, it will have achieved something important.

Lofty aspirations do not change the objective reality that members of the military are products of society. While donning a uniform can be transformative to some, this is not always the case. All societal problems, whether relating to finances, addiction, relationships or crime are evident in the military.

Disclaiming comparisons to the rest of society may be rhetorically appealing, but they're not realistic. This call for realism is by no means, a call of surrender. If the military is given the political and temporal space to work this problem as it is currently attempting on a scale unmatched by any other institution in the United States, it might just get a set of evidence-based solutions that produce truly meaningful reductions in the incidence of sexual assault.

To the extent the fallaciousness of the crisis narrative is not effectively exposed and rebutted, the potentially counterproductive changes called for by some advocates of military justice reform appear well positioned for passage in some future bill. Even in the absence of congressional reform, the president's announced deadline of December 1st, 2014 for the DOD to show substantial improvements in this realm indicates the need to reaffirm the narrative; to move away from the feeling of a crisis

towards the facts of the problem. Thank you for listening, and I look forward to your questions.

DR. WATSON: Well, I think we've had three very interesting and very provocative presentations. I'd like to start with a question for each of the people on the panel, and then throw it open to questions.

Colonel Johnson, you mentioned several times the fact that there are cultural reasons why the Army is so keen on the reporting system that it has embraced. How long do you think it'll take, and what steps do you think further can be taken to change the culture; not just the reporting and the various criteria that you talked about, but how would you go about changing the culture?

I'll pose all three questions, and then this will give you some time to think. For Lieutenant Colonel Marx, I understand exactly what you have said, and I think you made a very compelling case, but let me throw open something else the Corps is known for, and that is, the Corps is known to be a family, it's known to be an institution that protects all Marines.

What about those Marines who have served faithfully, and who are now subject to the SERB boards? What kind of message does that send to those who are currently junior, but ultimately, will not make flag and will ultimately be in the same position five or six years from now? Is there a deleterious effect to that message? Just a question to think about.

And then, for Major Burris, you've made a very compelling argument for why the military should be considered vis-à-vis the rest of society. However, if one were coming from some of those groups you talked about, concerned about the greater incidence of sexual assault that's being reported, can you give some concrete steps that you think the military could be taking to assuage the concerns that perhaps, the military isn't adequately addressing these issues?

Let me stop and ask you all to respond.

COLONEL JOHNSON: Thank you, Cynthia for the question.

But I think the Army, at this point in history is kind of tied to the current system because of the equipment that we're fielded with. So, I'll use an example of the unit that I've commanded -- units I've commanded. They're heavy units. Doing maintenance and keeping track of personnel and supplies is very systematic. It does require metrics to keep track of the maintenance and everything. So, it's kind of hard to pull away from that.

But I see in the future, and really -- so my resource is 2025 and beyond for the future -- I've seen in the future, the need for us to pull away from this arduous system of numbers. And there still will be a certain level of that, but right now, it's driving how we report it. And I think we should -- we will eventually have to evolve into a capabilities based focus for how we report our readiness.

And I believe, even with the other services, you know, my Air Force brothers here and Navy brothers in terms of capabilities, they tend to express readiness a little bit better than we do when it comes to major systems and how those are reported and employed. I think we should move towards adopting those types of broader definitions of readiness, and not get so tied into the metrics.

And one more point I'll make about you know, our current system. A lot of times, the reporting data sent up is really not accurate, because commanders can be objective in certain areas. And so, it's their gut instincts. And as a former commander, that's good to have that kind of flexibility, but it doesn't necessarily paint the right picture or a clear picture to the higher headquarters or to the Army on where you actually stand, because ultimately, you'll know where you stand when you deploy somewhere, you know, and things don't go the way they're supposed to go, because you kind of -- you know, you looked your readiness in a different way.

And so, I just think we have to kind of evolve past the metrics and grow towards a more capabilities focused -- And the DERS program, the DERS reporting

system does that, but it's at the chairman levels, at the co-com commander level, and I just think we need to kind of push that down a little further so we can start reporting in those terms.

Thank you.

LIEUTENANT COLONEL MARX: Cynthia, I expected that question. And I've got a long answer, and I'm really sorry.

During my research, you know, I mentioned the Air Force. You know, they promote a lot of people from the below zone, and I went to school with some Air Force lieutenant colonels last year who gave me the other side of the coin. And that other side of the coin is, what if you're not selected. You are told a different message by the Air Force. You're basically told you're not going to be a flag officer.

And my friends told me that that's a problem for them, too. But this is an independent thinking panel, and I didn't think my job was to come here and validate what we're doing. You know? I don't think it's right. I don't think that just because you have served or you made a particular rank, you get the green light and the golden ticket to stay forever.

The Marine Corps is 75 percent, 23 years or younger. It's really close to that. We are a very, very young service. And I think the message you send to the younger people -- you can send two different messages by, you know, not letting the senior people stay long past than they should -- you send two messages. Wow, they really protect you when you get there, or, man, that guy's never going to get out of my way and I can't get there. And that's kind of my stance.

And I'll tell you another story from going to Eisenhower School last year, is we checked into school in June of 2012, and the senior Marine that was part of the Marine Corps detachment there had been a colonel select for six months. We go the entire school year. He was a colonel select.

We graduated, and six months later, he got promoted. Meanwhile,

you're in a conference group with members from every of the other -- every other service. They run their promotion boards. They select their people for promotion, and they pin it on all the same year. And that was the impetus, the hair on the back of my neck that stood up and said, something's wrong here. What are we doing?

And so, when I had the opportunity to pull this thread, that's what I did. If you really want to know more information, read the book, "Bleeding Talent," by Tim Kane. The Army, he thinks is bleeding talent. And I say that if we continue the direction we're going on making people wait as long as they need to, to get promoted, the Marine Corps could possibly be bleeding talent, too.

DR. WATSON: I would just say, my question was more -- I'm not advocating a position.

LIEUTENANT COLONEL MARX: Mm-hmm.

DR. WATSON: I'm asking whether you've thought through some of the law of unintended consequences. That's all.

LIEUTENANT COLONEL MARX: Yeah.

DR. WATSON: There are unintended consequences that result from all sorts of good ideas. And that's simply one of the things that I can see potentially -- under no circumstances am I saying people should stay forever. Statutorily, they can't, for one thing.

LIEUTENANT COLONEL MARX: Mm-hmm.

DR. WATSON: But there are all sorts of unintended consequences. But thank you. Yeah.

LIEUTENANT COLONEL MARX: Ma'am, on concrete steps. So, over the past year, 35 major reforms to both the military justice process and the Department of Defense Sexual Assault Prevention Response program have been implemented. Some of these were DOD policies that were later codified by Congress. Some of these are independent congressional initiatives.

The result -- or Claire McCaskill summed it up on the floor last Thursday when she called the military, at this point, with these 35 reforms, the most victim friendly organization in the world. So, maybe not everybody agrees with that. Maybe it will take some time to implement these 35 reforms and to work those into our culture.

But as far as concrete steps, I would take the opportunity to -- I would take that opportunity to tone down and push back against the rhetoric a little bit. I know senior leaders are probably reluctant to do that, and there are probably significant political consequences to doing that. And that's another benefit of being the junior guy, is I have the luxury of being politically naïve. So I'm going to hide behind that (Laughter).

But at the same time, I think one, it's a good means of strategic communication to those who feel that their sons and daughters aren't going to be safe wearing the uniform of the United States. The other thing is, is toning down the rhetoric a bit and not using, again, terms like elimination, eradication, zero incidence, zero tolerance is going to create an environment where subordinates feel that they have the space to make the right decisions, and that they're not being politically pressured to make the wrong decisions, because that's when everything goes south.

Unlawful command influence is poison to the military justice system. And I think a useful analogy might be the recent nuclear testing scandal where the launch officers were decertified -- I believe it was 92 of them. And the secretary of the Air Force went out and visited, and she gave a news conference. And she indicated that the need for perfection had created a climate of undue stress and fear, and that that's not a healthy environment.

Well, what type of message does elimination, eradication, zero incidence and zero tolerance send to subordinates? That is a standard of perfection. And if you ask for a standard of perfection, your subordinates are going to get you there, whether they run over victims, whether they run over accused, by hook or crook, especially if

their promotion is on the line. There is the potential for some injustices to be done. So, I'll leave it there. Does that answer the question?

DR. WATSON: That's what we're looking for. Okay. Three good answers. Let's hear your questions. Sir, at the back.

SPEAKER: Thank you very much, gentlemen.

My question is -- I've got two questions for Colonel Marx. So, on selecting the right people, you've got to have the right criteria to select the right people for promotion. So, I wondered if you could elaborate a little bit on what you think or what your findings were on the criteria that we're using for officer promotion and selection with the Marine Corps. And then also, if possible, if you could talk about NCOs a little bit and the promotion scheme as it stands right now, and if you think that's appropriate. Thank you.

LIEUTENANT COLONEL MARX: I didn't research the NCO aspect. I didn't want to write a book, and that is a book in and of itself.

So, when I -- I went and invited Mackenzie Eaglen to come and become a panelist here, and she was picking my brain, basically, about the same subject you're asking. So you know, what is the criteria for below zone? And some words that mattered to her that kind of brought it in to her is she -- I said, you know, the worst -- or the most average lieutenant colonel is getting paid the same amount as the best lieutenant colonel in the Marine Corps.

And that kind of struck home with her, and I think I used different words than best and worst, because they're all good at that point. But there needs to be a difference between your commanders, the people with the most weight on their shoulders, I'd say is one of the criteria. And in the Marine Corps, it starts really at lieutenant colonel, unless you're talking about major selection boards for recruiting station duty.

And I don't know if you're a Marine or not. I see a pin back there. Maybe

you know what that is. But that's really the first board we run for command. And so, some of the criteria, I would say, is how they did in command. Platoon command, company command. You have authority -- you have responsibility that others don't. And if you do good, you get rewarded. And if you don't, you get fired and you go away. And that's what we owe -- that's what I believe we owe to our young Marines. Did that answer your question?

SPEAKER: Yes.

(Discussion off the record)

SPEAKER: Thank you, sir. Lieutenant Colonel Marx, this is also for you. As one of those captain millennials, this is an interesting topic for me.

My question is very similar, but it's more about the process of how you go about identifying those individuals that are most ready for promotion and have that talent. And if you've found any additional methods through your comparisons with the other services, that -- whether it's through mentorship channels or through best practices and the fitness reporting process that you find best retains that talent.

LIEUTENANT COLONEL MARX: Thank you.

I would say that right now, there is a who's who, who do you know, good ole' boys network a little bit; at least a little bit. The fitness report system, and I asked (Laughter) Colonel Ekman walking into the room today, exactly how the Air Force do it, because he and I have been having a hard time connecting.

But it would require the fitness -- the fitness report system right now can't do it, especially in the Marine Corps. There is no button anybody at M&RA could push that says okay, who's getting out? Some of the best people? Some of the worst people? They can't give you that information. And so, the only thing they see in a promotion board or a selection board is an officer's -- the word is escaping me, but it's basically your relative value of how other people have evaluated you against the other people that they've evaluated.

But if all they've evaluated is below average people or people that are in the top 1 percent, there's a problem. The best practices that I think would need to be incorporated are almost like a third officer citing or a reviewing officer. And when they make their marks, that they can't call everybody the best.

Okay? That can still happen today, and it does happen. I've sat on promotion boards. I've read files on people, and it's really hard. You can tell in an instant whether a reviewing officer knew what they were doing when they were grading their subordinates. So really, what it would take is a system that says you can only pick the top 5 percent in this box, and you've used your quota. You can only pick 5 percent or 10 percent here at the bottom, and you've used your quota.

So, it would be more forcing people's actions with the power of the pen. It's the only way. And our system right now really doesn't support it. But I will tell you one other thing, is that the Marine Corps actually has a system to identify the people. And it's the addendum page. If you're familiar with the fitness report system.

And the head of M&RA -- his name is escaping me right now -- gave me two hours of his time, and he's sat on a million of these boards. And he said, hardly ever does anybody take the time to identify that top 1 percent and spend the time understanding where they're marking their relative value and spending the time on an extra sheet of paper to clearly define that that person is superior and needs to be pulled up ahead of that out of their group. Does that answer your question?

SPEAKER: Yes.

MR. BRODSKY: I'm Mark Brodsky, retired CEO, but more relevant, at one point, I was chief of staff of IBM Research, where we had this evaluation problem in spades, because everyone's a star.

There are things that you could do besides promoting people. It's a sick system that the only measure of success is promotion. A real measure of success is doing your job and getting satisfaction out of it. So, somehow, you have to create a

system where people feel there's more to life than going up to the next level; that's doing their job well.

Now, you touch on some of the things there. Within a rank, differential pay is an important thing. Within a rank, other kinds of rewards are different things. And mobility and ability to try different things. I mean, one is, your assignment is probably more important than the next promotion, I would guess, in a lot of things.

And also, some flexibility. You have to think out of the box, think radically. You know, management in industry right now is much, much flatter, I suspect, than management in military. And there's sort of much, much less opportunity for promotion, just by rank. So, how do you create something like that in the military and create different opportunities other than promotion?

One way of thinking out of the box is ability to transfer assignments other than just in the Marine Corps. Could you go elsewhere? I mean, you guys are terrific examples of other assignments. But you could think of, why are you restricted to the Marine Corps? There are other services.

And I would think a flawed system is that you're stuck in one hierarchy; you're either Army, Marine, Navy for most of -- through your career. But that's not what's true in industry. I mean, people have lots of flexibility and are not stuck. But anyway, I thought I'd offer that up from my experience.

LIEUTENANT COLONEL MARX: Well, I think you'd enjoy having a conversation with Michael Hanlon, because he is a big proponent of coming in and out.

And I would say that -- to comment on what you said, there are things other than promotion. And again, this is a very small study, and it's my opinion, and I'm on my own little island sometimes talking about it. And I realize that. And there are people who don't want to get promoted that can have very fun -- very fulfilling careers, but where I'm focusing on promotion. That's what I looked at.

There are other services around the world that you can be a corporal

your entire life. And if all you want to be is an operator, you can do it. You just can't do it in the Marine Corps. Anything to say to that or --

SPEAKER: No.

COLONEL JOHNSON: I'll just add on -- I mean, for those -- any Army folks out there? Handful? A couple?

All right, so we are definitely adapting our system. I think there are some perceptions out there, attitudes towards promotions that has caused the Army to review how we promoted. And so, we've changed our evaluation system in terms of the grade of officers -- I'll just talk about officers in this case.

So now, you have your junior officers. They'll get a rating. Then, you'll have your majors and lieutenant colonels; they'll get a rating. They have a different, distinct forum. And then at the colonel level, you have -- for all of the colonels, you have a distinct forum, and then general officers have a distinct forum.

And so, that's effective next month -- it goes into effect. Up until this point, it's been everyone on the same forum. So, we've identified a need, you know, to re-look at how we evaluate our officer corps. And oh, by the way, the young captains now -- they have a profile. A profile is you get so many -- you talked about the top 5 percent. You know?

Well, you know, as a colonel, I can rate a certain percentage above center mass or given that top block. Well, now the captains in the Army have the ability to block check their lieutenants. First time in history; that's never happened before. So now, we're starting to take input from the junior officers in terms of how they evaluate and rate the lieutenants. So it's starting earlier now.

The other thing we're doing is we have a -- what we call a 360 assessment. Now, this doesn't go towards their promotion, but you're getting feedback from subordinates, peers and superiors on you as an officer, you as a leader. And so you get that feedback -- it's through the AKO system. So you go online, and you can

ask a certain group of people to assess you and get that feedback.

And the Army also randomly picks people to do that, as well, for you. So you get feedback from those that you serve with. And so, that's another mechanism to get feedback and develop officers to be better leaders throughout their careers. So, we're doing things to kind of help us identify talent, but also develop talent as you go along, because you're not the best officer when you're a lieutenant. You become the best officer as you go through the ranks.

You know, lieutenants are still like we were -- all green, trying to figure things out. But as you move up, you need that kind of feedback from your chain of command, but also from those you work with. So, that's how the Army has found to address some of those problems that you just talked about.

(Discussion off the record)

MR. DEBUSE: Hi, this is Rob Debuse, fellow fellow. This is for Matt. A question for you on increased reporting.

We've had this significant attention put on the sexual assault perceived problem -- I'm using your words -- in the military. How much of the increased reporting do you think is actually attributed to -- what is it attributed to? Is it attributed to a better awareness of the situation or a better reporting system, or just an elevation of the problem?

MAJOR BURRIS: Sir, and let me clarify, just in case I didn't -- it is definitely a problem. So, there's no denying a problem. And if you deny there's a problem, then you know, you shouldn't even be in the room. Right? I mean, everybody's got the message now. It's whether or not you kind of go into the red and you say a crisis, because then people start behaving irrationally.

So, as far as -- you know, I could only speculate. And that's part of the issue. On all sides of this debate, the aphorism lies -- damn lies and statistics holds true. Everybody can cherry pick the data that supports their argument, and because

there's data, literally, that will support almost any argument. So, some will say that increased reporting means that the problem is getting larger.

Some will say increased reporting means that more victims trust that the system is going to support them and not retaliate against them, and hopefully, pursue a just outcome in their case. One of the key recommendations in my article is for the DOD to do a better job. I mean, it's doing a good job. This is not easy, and I'm not -- you know, I'm not trash talking the folks that are doing the data gathering reporting in the DOD.

But they could do a better job in making this data comparable, again, across similar demographic groups. Because then, you can start really comparing the numbers as opposed to just speculating as to why the DOD's numbers are over here, and the Department of Education is reporting something over here, and Justice and FBI are over here.

There is just no way to do an apples-to-apples comparison with the data. So, that leaves us speculating, which exacerbates the problem, to my mind. Because it would be very nice if we could say reports are increasing because people have more confidence. Now, there are interviews for unrestricted reports, so you get to ask the person that's reporting a series of questions, and the DOD annual reports do indicate -- I'm not sure if one of the specific questions is their level of confidence or not. But if it's not, it should be.

MR. SULLIVAN: Hi, I'm John Sullivan from Boeing, but earlier from the Air Force -- 26 years.

I just don't know if you're aware that the Air Force has a whole chapter on evaluation systems for officers, which in effect, after a lot of trouble, created a system which was really quite good in terms of identifying the people who should get promoted below the zone.

It also told half of the people at every level that they probably had no

future in the higher ranks of the Air Force. And because of that, they began to make plans to be elsewhere. The threat to the institution was so great as a result of that, that the guy who instituted this at the four star level finally suggested that it be cancelled.

So, I'm not saying that a forced system isn't necessary, but the Air Force discovered that that system didn't just help superiors determine who should move on, but it also helped subordinates to stay motivated, as their ratings were firewalled. When they got a realistic view of how they were looked at, they began to act rationally with regard to their futures. And that was not something that the Air Force could tolerate, so it canned that system.

LIEUTENANT COLONEL MARX: Thank you for that.

MR. MOSES: Hi, Jeff Moses. This is the center of questions over here.

This is for Matt. I think your report -- I'll look very much forward to reading it and applaud you for attacking something that is obviously, a very delicate -- and I personally, you know, have seen many cases -- more so in the aviation, because we're integrated -- you know, infantry not so much.

But my question to you is, where do you -- in your research, where do you think we've gotten the narrative wrong? And if you are going to include that. But I think that's really important. There's some things that we can say, and then we can, because of you know, the undue command influence and the culture. And we can stand behind that. That's a firm wall to stand on. But have we lost the narrative to a point where, you know, it's unrecoverable? And then, if you're going to mention that in your paper. Thanks.

MAJOR BURRIS: Thanks for the question.

So, not that I have very many good ideas, but every good idea I've ever had has come from non systemic reading. And so, I was reading "Thinking Fast and Slow" last summer, and it just struck me how these cognitive traps that Dr. Kahneman describes fit perfectly within the framework of the misperceptions people have about the

sexual assault crisis in the military.

So, when media reports, again, indicate that 26,000 people in the military suffered unwanted sexual conduct -- contact during fiscal year 2012, how many of those people asked the question, well, what's the denominator underneath that numerator, 26,000? And this is something Dr. Kahneman describes as ignoring the denominator. He likes to give very plain, plain descriptions to these cognitive phenomena.

So, fighting against the narrative is very difficult, because when people receive this information from the media, they make a lot of assumptions about it. They see the big number. They assume the problem is big, because the number is big. The big number is typically tied to some anecdotal case, which is normally the worst case scenario case.

So, in the instance of the Air Force, last year, two days before the 26,000 number came out, Lieutenant Colonel Krusinsky was arrested, who worked in the Air Force SAPRO office, and for groping a woman outside a bar in Alexandria. Now, he was ultimately acquitted by a civilian jury on a reduced charge, but those two things together were absolutely toxic.

And I think that led -- I mean, my opinion, and speculating, I mean, I think that led to the political situation where our senior leadership, when they went up before those congressional committees, there's not another thing they could have said other than stipulating to the crisis and taking the kind of verbal beating that they took from some Congress people.

You know, they really couldn't have said anything else. Had they said anything else, I would think that Senator Gillibrand's bill would have passed in June of last year. We wouldn't have the military justice system that we have today. Does that get your question?

SPEAKER: What are your denominators?

MAJOR BURRIS: Oh, I'm sorry. Oh, the denominators.

So, I'm sorry. Under the 26,000 is 1,350,000 active duty troops. So, that means -- so kind of glass half full, although obviously still a problem, that means that 98 percent of service members suffered no form of unwanted sexual contact during fiscal year 2012, or 1.324 million.

So yes, 26 million, or 20 -- yeah, 26,000 indicated they experienced it. And the other thing, unwanted sexual contact -- and the media often conflate that with sexual assault. And when people think sexual assault, they think penetration offenses. Unwanted sexual contact could mean anything from a failed attempt to pat a coworker on the buttocks to a completed rape. Now, the DOD statistics separate out those categories, so you can go to reports and see how many in each category were reported. But it doesn't mean 26,000 sexual assaults.

Now, there are folks on -- depending on where they're at in the issue, they'll say that that number represents under reporting. There are folks on the other side who will say that those numbers are massively inflated. So again, this goes to my recommendation to really synthesize the way that we collect and report data on this issue, because until we do that, it's just going to be arguing back and forth with competing anecdotes and competing statistics.

COLONEL JOHNSON: If I could add real quick -- and Matt, your studies are really, really good. I'm looking forward to reading your file, as well. But to get out -- you talked about the narrative, were we missing it.

And so, we're obviously as a service -- services held to a higher standard than most in our society. And so, I think the narrative should be, you know, the (Inaudible) out there entrusting us as leaders in the military culture with the care of their sons and daughters. And so, that trust has to be there.

And so, I think the narrative needs to be a positive narrative in terms of, we need to earn and maintain the trust of those who we serve. And I think that kind of helps us at least stay on the positive side of this problem.

And the other thing I want to add to that is training and education. You know, you have all these young adults, you know, young kids, you know, 18, 19, 20 in our formations and our organizations, and it's their first time out of the house in a lot of cases; first time away from home. And when you see some of these youngsters -- I mean, they're very, very smart and bright, but they're also -- they've got that look on their face; they're a little scared, too.

And so, being able to gain that trust and confidence of those youngsters like that in a positive way; and so, educating them -- and so, we started a program in my last unit. It was called Sisters in Arms, where the leaders; the female leaders in organizations -- in the brigade, once a month, all of the females in the brigade would go to one of the auditoriums, and they would talk about those kinds of problems that they would face.

And just, so they formed like a mentorship with the young female soldiers in the organization. That kind of helped kind of you know, bring the youngsters along as well, and so they understand some of the pitfalls of being -- you know, of wearing a uniform. But also, it created that culture of trust within -- because we cared enough in the organization to host that. And so, that meant a lot to those soldiers, as well.

So, it's about education, too. It's not just about responding to the bad things when they do happen. It's about trying to prevent them by getting ahead of it with stuff like that. Thank you.

DR. WATSON: On behalf of Dr. Singer, as he comes forward, can I ask that we give this panel a round of applause for a very stimulating discussion?

(Applause)

DR. SINGER: I very quickly wanted to do three thanks and a thought. The thanks first go to Emerson and Brendan in the back, who helped put together and run this great conference. The second thanks is to all of you, for coming out and attending it.

And third, to all of the panelists who -- you know, this, in many ways was the result of a long journey. But in particular, it took -- you know, it takes intellectual bravery to stand up and defend -- present and defend your ideas. And that leads to the thought, and it's a little bit of a bastardization of something that was said in this prior panel.

It was said in many ways -- you know, so don't think of this in a panel. This is an independent thinking conference. And it's not our job to validate what's already out there, what we're already doing. And that very much applies to the research and the ideal behind these fellowship programs.

But to go back to the theme of the conference, it's exactly that kind of independent thinking that, that kind of unwillingness to simply validate what we're already doing that really will help us succeed over the next decades, as we wrestle with all of the change that's going on out there. So, thanks again to everybody.

(Applause)

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