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**Future Conditions: The Character and Conduct
of War, 2010 and 2020
Patrick M. Hughes**

Guest Presentations, Spring 2003
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Patrick M. Hughes

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leaf clusters, the Bronze Star with V device and two oak leaf clusters, and
the Purple Heart.*

Oettinger: Our guest today is General Patrick Hughes. I won't prolong the introduction, since
you've all had the chance to read his biography. He has indicated his willingness to be interrupted
with questions and discussion as he goes along, so I will simply say, "Welcome, Pat. It's a
pleasure to have you with us once again."[1]

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[1]See Patrick M. Hughes, "Future Threats and Challenges," in *Seminar on Intelligence, Command, and Control,
Guest Presentations, Spring 1999* (Cambridge, Mass.: Harvard University Program on Information Resources Policy,
I-00-2, June 2000), [On-line]. URL: http://www.pirp.harvard.edu/pubs_pdf/hughes\hughes-i00-2.pdf

Hughes: It's a pleasure to be able to spend some time with you today. I'll start out by telling you that I use vugraphs because I'm a creature of the military and also because I find it comfortable to make reference to ideas that you have to read. If you wouldn't mind, take a look at each of these vugraphs as they come up, and actually scan them or read them. That would help. There are lots of ideas here that I can't fully articulate in the time allowed. I want you to get an impression from the vugraph, and I'll talk a little about some thoughts on each one of them. As Tony said, if you want to interrupt me, please do so anytime about anything, and I'll do my best to give you an answer or to discuss the issue with you.

I have never finished this presentation, ever. I've given it to quite a few groups. This is my fourteenth year of giving this presentation in some form. I've given it to thousands of people over those fourteen years. Tomorrow morning, I will give it to the assembled National War College at the National Defense University in Washington. Usually I give it to people differently, depending on who they are. I try to get to know my audience, and I had an opportunity to meet some members of this audience and hear a little bit about them over lunch, which I really appreciate. I guess I know generally who you are, but, frankly, there's a big gulf between you and me, and my understanding may not be right. But I think you're master's degree students, or perhaps even early doctoral pretenders, and you come from a variety of backgrounds. Some of you are going back to the military or in at least one case to the military, but some of you are going on to do things that have no connection with the uniformed military services. Some of you, especially the two MIT [Massachusetts Institute of Technology] people, seem really strange. I don't know what you're going to do. Whatever it is, I hope there's something in this presentation for all of you. I'm going to do my best to try to appeal to this audience.

The last thing I'd like to tell you before I begin this presentation is that I'm an earthy, direct, and relatively uncompromising person. If you're sensitive about any of that, you're probably listening to the wrong guy. I'll try not to be offensive to anybody, but if you ask me a question, expect to get a clear, direct, honest, and relatively unaltered answer.

You have to take my word for some of this, but I'm not asking anyone to vouch for me. These are the views that I held some time ago, and I copied them down out of a 1996 document (**Figure 1**). So this is what I thought in 1996. It's not perfect, but it's okay.

There are two issues here. Peacekeeping is a problem for us, and it's part of the construct of war now, war in the past, and war in the future. The idea is committing to a conflict and reaching a stage in the conflict where active warfare stops and something else happens. The term we give to that is peacekeeping, ostensibly because peace has broken out in some limited environment. It is an activity that the U.S. military, and, frankly, most of the security and intelligence elements of the United States are not well trained for. They're not equipped for it, and they're not really focused well for it, although they've had to do it for many years. I think I can characterize the Department of Defense's view about peacekeeping like this: "We'll do it because we have to, but we don't want to do it. We don't like it. We are trained, equipped, and meant for the conduct of war. Peacekeeping is somebody else's problem."
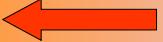
Figure 1

Oettinger: Is this a truth, or a matter of semantics? The term "peacekeeping" seems fairly recent.

Hughes: It's not recent at all. It goes back to World War II.

Oettinger: I was going to say that we did a lot of that in Germany and in Japan. We supported Germany through the whole cold war, so it's not exactly as though it were born yesterday. But now I'm puzzled as to why it seems so alien if they've been doing it for half a century.

Hughes: The documents that I've read, and the people I've talked to who did it in World War II, say that we didn't like doing it. We're talking about the aftermath of the active conflict: the occupation of Germany and, frankly, of Europe, in general terms; the transition from a wartime to a peacetime environment under a military government; and the assigning of retribution to those who were guilty of crimes in the conduct of war. I think most people would say that period lasted from 1945 (or perhaps 1944 in a few cases, such as Italy and perhaps some North African countries) until the Korean War broke out. They liked some of the things they had to do, such as the Nuremberg trials, but they did not want to do, and they weren't equipped to do well, the nation-building, the restoration of infrastructure, and the support of the large civilian population. They didn't like it, and they haven't liked it since then. I'm telling you what the military culture has told me.

This is a big issue, because we're about to go through it again, in spades, with Iraq. We have now committed to war in Iraq, and the purpose is to change the regime and ostensibly to demilitarize—by the conduct of a large war—the country of Iraq. We will allow them to have enough capability to maintain internal security and some modicum of self-defense, but not to be offensively capable beyond their borders. Those are the words, the rhetoric, currently going on in Washington. Nobody has yet defined well what that means, but obviously what it means is no airplanes, no missiles, and no weapons with mass effects [WME]. More specifically, what it means is that we're going to be there in some guise—and I use that word advisedly—for quite a while. It might be under the umbrella of the United Nations [U.N.], but it will be a guise. It's us,

folks, the United States of America, and nobody else is going to remain in the aftermath of conflict and shepherd Iraq into the future, whatever that means. Once again, there might be a big sign somewhere painted blue and white that says "United Nations," but, let's face it, it's mainly a façade.

So the construct of peacekeeping on this chart is very important in the conduct of warfare, because every time you get embroiled in, enmeshed in, sunk into the seeming morass of peacekeeping, you use military resources, some of them very dear. You use them up in some cases, and they are not available for a new war if a new war is required. That's the reason, ostensibly, why the uniformed military, and some parts of the civilian leadership in the Department of Defense, find this so onerous.

I'll give you an example. A few years ago, big storms in the Caribbean found their way inland to the Central American environment. You may recall the destruction of Nicaragua and Costa Rica and Honduras. We sent two—count them, two—combat engineer battalions of 500 to 600 people and all their equipment to Central America. They repaired roads. They re-erected bridges or put new bridges in place over barriers. They put the water supply back in place. They reconnected the electric conduits. They assisted in reconstructing buildings and facilities of various kinds. They did a remarkable set of good things and, by the way, no one else could have done that. There are no other agencies or authorities with that ready capability.

That ready capability is very interesting to talk about for just a minute. It's made up of youth. It's moldable, malleable, and translatable. You can take this capability—the American military, or some part of it—and send it anywhere and tell it to do damn' near anything, and it will. And, by the way, it is available. In the case of those two combat engineer battalions they were not available for a long time.

There used to be some alternatives. I would say the American Red Cross at one point was an alternative. Inside the United States, the Civilian Conservation Corps in the late 1930s and early 1940s was a remarkable capability and did a lot of great things for this country. The Peace Corps would be another example of a capability that comes out of the reservoir of talent and capability here in the United States, mostly in people, that was used around the world. But there is no alternative now to the organized U.S. military for many functions and efforts. Unfortunately, one of these is peacekeeping. Who else is going to do it?

The answer is not that we're going to get help from a variety of allies. My experience over my years in the military in this regard has been terrible. Most of the other militaries use U.N. peacekeeping as a chance to amass capabilities themselves, to be paid better than they ever would be under their own national flags, and mostly to do illegal things, sometimes mixed with occasional good.

Student: Could you give an example of one of those illegal things?

Hughes: Absolutely! My leading example is what I consider an example of a really bad country: Nigeria. Their military has been placed on the ground in other countries, virtually always under U.N. auspices, although some Nigerian military units have been used under the banner of an all-African military organization (there are two or three in the continent of Africa). Whenever the

Nigerians get on the ground the first thing they do is connect with the local criminals. They run guns, they sell drugs, they deal in contraband, they subvert the local government royally, and you cannot trust them. That's been my experience.

There are many experiences I could relate to you, but one is that they were the peace-keeping monitoring force on the dividing line (sometimes referred to as the "good fence" or the demilitarized zone) between the Hezbollah, the Syrian force presence, and the remnant of the Christian Lebanese insulating element between the bad Lebanese and the good Lebanese (if you want to put it that way) and the Israelis for about three years. Their actions over that three-year period were so egregious, so intolerable, that they had to be replaced. One of the things that they were discovered doing was passing weapons to hostile groups in the area, not only to the Syrians and the Islamic Lebanese, but also to the Druse, who were mainly using their weapons for self-defense, and of course to the Hezbollah. I could give you a few other examples. It's a mess.

By the way, here's another thing. Maybe this rings true to some of you. (I don't know whether it will or not.) Usually, in speaking with military people, we refer in disparaging terms to this penchant, this tendency, to engage in peacekeeping for a long period of time. We make reference to it as something that has happened to us that we wish hadn't, and ties us down. I think you guys are going to demand examples from me, so I'll give you a very personal example. The past president of the United States, William Clinton, stated directly to the American people in 1996 or 1997 that we would go to Bosnia for a peacekeeping mission, we would bring peace to the environment, we would hand off to the United Nations, and we would depart, and the time frame would be six months. My job was to stand up in an appropriate forum, as an American military officer who got paid to assess these kinds of things, and say, "Sorry. This cannot happen in six months. My estimate? Six to seven years." I was wrong. It's already been six to seven years, and there's no sign of our departing. The same is true of Kosovo. We departed Somalia and I, personally, bemoan it. I was there. I was directly involved, and I think it was one of our greatest errors not to engage in peacekeeping, because we never won the peace. We left in advance of that.

Anyway, to make a long story short, if you believe in the axis of evil as articulated by our current president, and in the hangers-on of that construct, of which there are several—Syria, Libya, Cuba, et cetera—then we're going to be involved in peacekeeping over the working life of all of you. We've got a problem here. I think the idea of peacekeeping was pretty good, but I don't think it embodied good events, or good things, for the U.S. military.

We're going to talk for just a few minutes about "Now" as I see it (**Figure 2**). We're going to talk about two bullets on this vugraph. The first one, very simply, is that we had a construct for many years called the bipolar security environment and global condition. The United States was on the superior part of the globe, the ice cap to the north. We were handsome, good-looking guys, and we had the sorts of values and philosophies that seemed to be right, so we said, "We are good." The guys on the bottom of the globe were those bastards, the Commies, led by the former Soviet Union, and we looked at their values and ideas and concepts and said "They are no good." So we had this balance. We had an enemy, an opposition, a forum, to juxtapose our goodness against, and, in effect, it gave us a reason to be and a reason to do many of the things we did in the cold war environment—to include structuring and building our forces. These armies and divisions and corps and brigades and air wings and battle groups, et cetera, did not arise out of nothing. They arose because we had this big enemy.
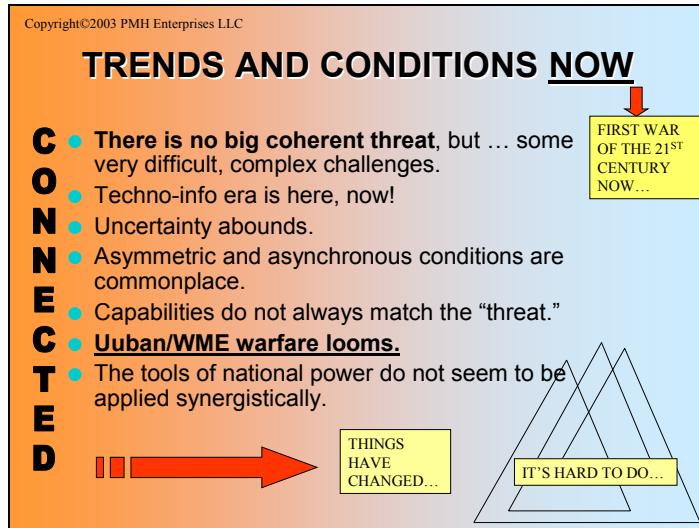
Figure 2

Then something happened. A tectonic shift occurred. It probably started to occur sometime in the 1980s, but it came to fruition in the late 1980s to early 1990s time frame, when the former Soviet Union was sort of propelled into modernity in some ways and the constructs of the global condition at that time changed. The signal event was the fall of the Berlin Wall, but it wasn't the only change. In my view, the economic failure of the Soviet communist system should be recognized as probably the biggest force for change. They just flat failed. They couldn't do what they needed to do to sustain their societal and governmental constructs. We can debate that, but whatever happened, they quit. That comfortable bipolar global effort began to change, and the world tilted.

We actually can now characterize the world in at least two ways. There may be other ways, but here are two. First is a unipolar world, in which the United States is a rising empire. It may be good or bad. I'm not claiming it to be perfect or even always good; I'm claiming it to be powerful and, in the context of balance, more powerful than any other single state and more powerful, perhaps, than any other amalgam of states.

The other is the multipolar world, in which the United States is a powerful pole, a powerful presence, but it isn't the only powerful presence. There are others, some of them growing, some of them diminishing. My own view is that both of those constructs can be used to understand what has happened. I prefer the latter. I like the multipolar construct, because it gives an opening to this thought: that nation-states with geographic boundaries have to associate with each other now, because standing alone they are no longer competitive or, in some cases, even viable. They must form alliances and coalitions and thus, in my multipolar construct, I am developing support for the idea that we cannot view the future world merely as it is now. We must at least consider the idea that some alliances and coalitions are going to grow up, as they have in the past, and some of those are going to oppose ours.

We currently have one, by the way, although it's a narrowly drawn coalition of sorts. We actually have two. We have the alliance and coalition of the traditional friends of the white Anglo-

Saxon Protestant beginnings of this country: Great Britain, Canada, Australia, and New Zealand. Whether anyone likes it or not, they enjoy a special, different, varied, but nevertheless clearly important relationship with the United States. The other, interestingly enough, is a fairly new construct: the North American Free Trade Agreement, which economically associates Mexico, the United States, and Canada in something of an advantageous alliance for economic purposes. It does not necessarily have much of a security overtone to it, although I think everyone should recognize that economic vitality is the underpinning, the foundation, of security.

So I'm telling you that we've got a lot of challenges out there in the world, but we don't have the cold war, bipolar, balanced threat condition that we had in the past. I think that this change has thrown some of our political, military, and perhaps cultural and business leadership into something called disarray. There's a cognitive dissonance out there. Who are our friends? Who are our enemies? Who are our mere opponents, and under what conditions?

I don't want to make this too political, but I think that in the past two days you've seen the current administration paint a happy face on what was a very unhappy condition (and I'm not arguing against this, I just want to recognize it for what it is). Four days ago we didn't have any allies. Now we have thirty to forty. We're making lists, checking them twice, and indeed there is an economic component to this association. Some of these guys have been paid to be our allies. Promises have been made. Deals have been cut. Is that bad or good? I don't know. I'm just telling you that seems to be what has happened.

However it happened, four or five days ago one or two countries were kind of our pals in this undertaking in Iraq, and now all of a sudden there are many more. How did that happen? It probably happened because of what I would call a realistic determination. At some point they realized that we were going to do what we were going to do whether or not they were with us, and so the decision became not whether to oppose it or avoid it, but whether to join it or not, and to take the consequences. Some nations joined.

Student: Does it enhance the credibility of the United States or the military when we call countries such as Ethiopia and Eritrea our allies in this?

Hughes: No. I happen to have a daughter-in-law who is from one of the Baltic states. I don't know if you're familiar with the mighty Baltics. My daughter-in-law is from Estonia. She could be from Lithuania or Latvia. All three put together are similar to the county where I grew up in Montana. It's not a big land area, and it's not a very powerful place. Should we thank the Baltic states for joining in our coalition? Sure we should. Should we use it as an exemplar of broad global support? No. We should be realistic. We should tell the truth.

I don't necessarily think the president has to go out and apologize for Ethiopia's joining the coalition. That's not the point. The fact is that Ethiopia is a sovereign state. It had a choice. By the way, it is largely Islamic, even though there's a big Christian population there. But the government itself has a lot of Islamic ties, and they came into this with the United States, against Iraq. Call it opportunistic, call it fantasy, call it whatever you will. It is not a great representative of the major countries of the world. Everybody knows that. It's Ethiopia. But they did it, and they count.

I think the Central African Republic, among others, is now on the U.N. Security Council. Their vote is equal to that of France and the United States, although they don't have veto power. I don't know if you've ever been to the Central African Republic. I have, and I do not desire to go back. It's not high on my list of places to be.

Anyway, to make a long story short, that first bullet up there is pretty important. Things have radically changed, and they're going to continue to evolve.

Maybe I'd better follow this thought for a minute. (Please don't get me involved in a conversation about whether or not you like this, because I don't care. I didn't particularly like it myself, but it's done.) It's not possible for the president of the United States to speak to the people of the United States anymore; it's only possible for the president of the United States to speak to the world. So he got on international television and said, "There's an axis of evil abroad in the globe. It consists of Iraq, Iran, and North Korea, and perhaps others. And we are going to change that condition." That's not necessarily a linear statement, but it is pretty close. If I were a thinking man's Army guy, I would start lining up my ducks. "Let's see, Iraq today, Iran tomorrow, North Korea next week, and then some of those other guys. Who knows?" That's the implication.

Now, I don't profess to know what the national strategy is, or what the president has in mind, but I know what he said, and I know what it communicated to the world. It communicated that the rising empire, the United States of America, and our friends and allies are going to change the threatening condition portrayed to the world by those three, and perhaps other, nation-states. That's what it meant. That should concern all of you, because you're going to inherit the mantle of leadership in this emerging environment.

As the last point on this slide I've highlighted something called urban warfare. Here are some facts, although I'm willing to be challenged on any of these. (I used to have vugraphs about these facts but I took them out, because they were getting to hard to deal with.) Right now, the demographers tell us that the global population is growing, and that growth will continue for probably another eighty years or so. There is a parallel condition. During the past twenty or so years, when the population has grown very rapidly, and up to the next eighty years or so, this growth pattern has a parallel event going on with it. More and more of this large population, especially the younger people, are departing the interior. They are departing the rural environment and they're going to cities. They are making new things called "conurbations."

This city we are in is the northern terminus for the largest conurbation in the United States. I am a visitor from the southern terminus. The Washington-to-Boston corridor is a conurbation. It is not necessarily fully contiguous, but it is geographically well enough associated that it deserves that term. In its conurbation form, instead of dealing with independent cities, it encompasses Boston, a few smaller northeastern cities, New York, Philadelphia, Baltimore, and Washington, D.C. It now approximates somewhere between 35 million and 40 million people. It's a damn big place, and it is interconnected.

This is impressive. New York, of course, has a special quality all its own, as do Washington and Boston. But there are greater conurbations rising in other parts of the world. In our hemisphere, the largest city is São Paulo, Brazil. The conurbation that is formed around it is really an urban zone made up of suburbs, smaller cities, and the core of São Paulo, and right now is about 30 million standing alone, and growing. Overseas, there are many 10- to 20-million

structures springing up, some of them very new cities, some of them arising out of the remnants of old cities. The best example is Shanghai, China, which is probably the most remarkable city on the face of the earth right now in terms of being layered and connected together in a modern form, but resting on an older-than-old base.

So, these changes are occurring. Now, today, tonight, tomorrow, or whenever (it may be happening now, because it's nighttime in Iraq), using the trendy upscale term, "shock and awe" are going to occur. I feel corny saying that, but what "shock and awe" means is that lights are going to flash, things are going to break, and people are going to die. So, in this shock and awe, whatever that does end up meaning, an urban structure of about 4.3 million people (census taking is not an exact science, even here) is going to suffer. They're going to be caught up in an urban zone called Baghdad. They're going to have their water and their electricity turned off, their dependable support mechanisms are going to be in disarray, and they are not going to know what's happening to them for some period of time. All of those things are temporary conditions. But some of them are going to die, and the finality of the event of death and the interaction that causes with those who are still living are bad.

But I am telling you that 4.3 million people in Baghdad is a small problem. On 9/11 we caught a glimpse—just a mere glimpse—of a big problem waiting in the wings, when a large city of around 8 million people was mightily affected, an economic mechanism was very much affected, and the capital city received a pinprick. It was important, but nevertheless a pinprick. There's a saying among guys like me, "Nothing will galvanize your interest like a small nuclear weapon going off in a city of unwarned, unprotected people." Nothing—except maybe a letter filled with anthrax.

The fact is, ladies and gentlemen, that we are living in this environment and we're going to conduct war according to the Willie Sutton school of thought. (This is a bad example, because Willie Sutton apparently never actually said what was attributed to him.) Most of you probably know this quotation, but I'll repeat it anyway for those of you who are too young to identify Willie Sutton. Willie Sutton, a famous bank robber, was asked by kind of a stupid newspaper guy, "Why do you rob banks, Willie?" and he replied, "Because that's where the money is."

Why do I tell you there's going to be warfare in very complex urban environments? Because that's where the store of value, or the culture, is. That's where you have to go to change things. So why are we fighting a war that involves the destruction of the urban infrastructure in Iraq, somewhat counter to our basic values and ideals? The reason is that if we don't, we won't influence anyone in Iraq to change, and we won't cause the kind of change that has to come. Is that a good thought? No, I think it's bad. I'm not even sure if it's right. But I can tell you, it is the logic that is being applied.

Student: In World War II, the airpower theorists said that if you take down infrastructure the people will rebel against their government, but that's not what happened. They took down infrastructure, and people just got more hardened against the forces doing it to them.

Hughes: The more recent example of that is Vietnam, where we literally bombed the place into a mess. We decimated North Vietnam—Hanoi specifically, but several other cities, the Red River

delta, and the seaports around the opening to the China Sea and the Gulf of Tonkin. The Vietnamese got more resolved, dug deeper holes, and became more fierce.

You don't understand. You have not gotten my message. Bombing is not urban warfare. Bombing is a precursor to urban warfare. Once again, I don't want to turn you off or alienate you, and I think I might be doing that. I want to convince you that I'm really a nice person, but I want to tell you the truth. I don't want to sugar-coat it. When I use the term "urban warfare," I'm talking about going to their place and taking their lives if we have to, not bombing them into submission or irritating them into some stronger kind of resolve. I'm talking about taking their lives, or controlling them, and I'm talking about changing their government, their leadership, and their societal construct. I'm saying that when you turn the water back on, some Corps of Engineers guy is going to have his hand on the faucet, and the construct will be "The Americans turned our water back on." Good or bad, the Americans are going to be in charge for some period of time without water.

That has not necessarily had a good effect whenever we've done it in the past. It's different now, and I'll tell you two reasons why it's different. We are the aggressors in the construct of warfare, and the urban zone is different. I don't know the truth, so you will have to see what comes in the next couple of days, but I'll plant this idea in your mind. In World War II, and in Vietnam, you could go into a hole and hide—hunker down and survive. Last night maybe some of the head guys went into a hole and they could not survive. Things have changed radically. By the way, in the end we're going to go to that hole, and we're going to count the bones. This is vastly different.

Student: Thinking about urban warfare and where you started with peacekeeping, I was reminded of Somalia.

Hughes: I'm very glad that you're able to see that pattern, because it's one of the points of my presentation.

Student: The current war is certainly about a regime change, because the regime is claimed to be the threat, but in a lot of these big metropolitan areas you're talking about the threat is not necessarily the regime, it's a generalized structure of poverty and potentially of terrorism. What happens if those centers grow? There was an article written by Robert Kaplan about poverty moving to these centers, and technology proliferation enabling these people to have technology but not necessarily the education or the level of understanding to use it in the appropriate way.[2] The threats would be asymmetric. What are some of your thoughts on that? Certainly we can't just bomb those cities.

Hughes: Read my lips! We are bombing those cities right now. I want to convince you that things have changed very radically. It's not about what you think or believe; it's about what's happening.

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[2]Robert D. Kaplan, "The Coming Anarchy," *The Atlantic Monthly*, **273**, 2, February 1994, 44–76, [On-line]. URL: http://www.theatlantic.com/politics/foreign/anarchy.htm

Student: But does that mean that peacekeeping ultimately changes and now is about bombing first?

Hughes: Yes, it does, in some cases. It's terrible, isn't it? Personally, I believe that peacekeeping has always been about bombing first. If there was war and then there was peace to keep, you had to win something to achieve some kind of a contrast with war. In order to do that, you probably engaged in war. Do I think that was a solution? No. Do I think that solved the conditions of poverty? Do I think that changed the minds of the terrorists? No, I don't. In fact, I think it may have exacerbated terrorism in many cases. But that's hardly the point, although we should discuss that. We should work to try to find real solutions.

By the way, I am a huge proponent of the view that the use of military force is a solution for nothing, but it is a way to moderate the conditions so that other potential solutions can be applied. It may have some other redeeming qualities, but on balance I would call it a very unfortunate event. I don't think it should be done, except in the most extreme cases.

Student: Is that because the loss of American lives in the battle over Somalia was so problematic that bombing is sort of a rationale for preventing that, or is it simply that bombing is seen as the best way to get to any sort of result?

Hughes: This is a very good point. First, I have changed, and the American public, according to polling and opinion sampling, has changed too. We are no longer unwilling to give up American lives. I think the most recent poll says that 73 percent of the American public support the president in his action in Iraq. You could argue about polls all day long. I'm not big on statistics, and polling, as far as I'm concerned, is something close to voodoo. The point is that it does send a certain message: that the opposition to risking American lives is overshadowed by the willingness to engage in this risk. Do you hear, are you reading about, are you seeing in the media, a great rising objection to the cost in American lives? To me, that's the best test, and it isn't there. In fact, I would say that it isn't an issue. The issue is that we have to change something. These guys represent a threat that we can no longer afford merely to watch. We have to stop it lest it come to us, because we can't afford to absorb it. So we're going to interdict them. We're going to behave proactively. We're going to change the condition.

Student: I wanted to get back to your analysis of Vietnam, where you said we bombed the cities and buildings but they could hide in holes and go out into the countryside in a lot of cases. I'm still not understanding how you see that as being different now that we're bombing Baghdad, and you're saying they're going into holes but won't survive. What changed?

Hughes: The precision, the effect, changed mightily. Let's use ten years. In Desert Shield/Desert Storm, the circular error probable of an air-delivered weapon was probably 100–200 meters. That's the circle you can draw around the aimpoint. A few leading-edge precision munitions were available then, but very few. Today, in round numbers, it's five to ten feet—probably closer to five.

I told this story before. Once again I think I'll prove to be a harsh guy, but if you were in Baghdad last night, you knew war was coming. This is not about strategic surprise, but here's what happens. In the Mediterranean Sea, another world away, beneath the water, a submarine

launches a cruise missile. It rises out of the water, arcs over the sea, enters the airspace over the land of Lebanon, and flies through Syria and into Iraq. It finds the city of Baghdad. It finds the main thoroughfare going into the neighborhood where the Ministry of Intelligence and Security building is located. It finds the right street, turns right, turns left, makes two rights, rises slightly to the second floor, and flies in the correct window. This is completely different.

In the past we have done that at 11:30 at night and killed the cleaning crew. We have destroyed the facility, but we have minimized the loss of life. Not last night! We purposely sent those cruise missiles and precision-guided munitions delivered by stealth aircraft to a place where we believed a large number of people, not only the principals but also the families of the principals, had gathered to spend the night. Our intent was to kill them dead. It was not the cleaning crew. Things have changed and, frankly, the change is not something that just happened.

Student: What you're saying is that it's not a change in tactics, but a change in technology.

Hughes: Yes, but it's also a tactical change when you take that technology and apply it in such a way. It's very much a combination.

Student: We talked a lot about the current conflict. What strikes me is that a lot of the current conflict is also about world opinion, and that if we had better or different world opinion the Iraqi regime might not have been motivated to behave as it did. I'm troubled by the inability of the U.S. government to maintain a straight line on many different items. I see the political efforts really sabotaging the military efforts.

There's a big piece in the English press that the U.S. military is shipping chemical warfare agents—CN gas, CS gas—for use in cities.[3] That's very troubling, because we're going after Iraq for using chemical weapons, and here we're bringing in chemical weapons of our own.

Hughes: I'll have to interrupt you for just a moment, because I disagree with the premise. You quoted two personnel control agents. They're nonlethal.

Student: They are nonlethal, but the rest of the world sees them as chemical weapons.

Hughes: No, I'm sorry. The International Chemical Convention allows both of those agents to be held and used by all the nations signatory to the convention.

Student: The article that appeared in *The Guardian*, though, referred to them as chemical agents. The problem is what I said: it's a battle that is largely being fought in the court of public opinion. There's a real lack of willingness to work public opinion. We're taking steps that aren't clearly needed from the military point of view, but they really do deep damage. There have been many cases of failed diplomacy in the past few months.

Hughes: I share your concern. I speak about it all the time. I think we need to worry a lot about perception and fact. Sometimes the facts are relatively incontrovertible and we can deal with

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[3]CN gas (alpha-chloroacetaphenone) and CS gas (0-chlorobenzalmalonitrile) are types of tear gas.

those, but I happen to subscribe to the belief that we, the United States, are in charge of about 49 percent of the perception problem. The perceiver is in charge of 51 percent.

Student: We're doing a really bad job of the 49 percent.

Hughes: We may be. I'm willing to agree. I'm sympathetic to your viewpoint, but I'm telling you that even if we did the best possible job the perceivers would make up their own minds. Quite often in the past, when we have done a good job of honoring human rights and supporting countries and doing wonderful things for people around the world—which we have done—the perceiver characterizes that as almost evil. I don't think we can control that perception, and that's 51 percent of the issue. We can do the best possible job of the 49 percent. If you're making the case that we're not doing a good job of that, I agree. We should do much better.

However, my sense is that the current administration is not as caring as you or others might wish about the perception of other countries under the current conditions. That's part of the change that has occurred. You may recall the president's mantra when he was running for office: compassionate conservatism. That was couched in both domestic and international terms. Now the wags and the pundits are asking "Whatever happened to compassion?" I'll tell you what happened to it. This is Pat Hughes's view, and very open to discussion and dispute. My view is that it didn't pay. It's back to that 51 percent. I think we tried it in a couple of cases, and we got a very poor return on our investment, so the hard-hearted among the current leadership said, "What the hell, we're going to do what we have to do."

Oettinger: What has changed? Granted, there's the precision of the munitions, but tactically things can go wrong, such as the attack on the Chinese embassy. Even leaving that aside, and saying we have a grand tactical success, what has changed strategically? Looking back to the post-World War II bombing survey, which knocked into a cocked hat the notion that strategic bombing was efficacious, are we committing the same error of thinking that we can change things by knocking off the leadership and killing people? People were dead when we bombed the Schweinfurt ball-bearing factory, but the German war effort went on, and when the bombing survey was done, it turned out it had a very iffy effect. So why are we so sure, strategically, that something has changed?

Hughes: I'm going to give you the right answer, but it may ring as disputable. Here's the answer: we can now kill the right people.

Student: I agree. That's what it was all about last night.

Hughes: I don't think any of our recent conflicts is worth using as an example, because none of them was important. They were all minor conflicts against an inadequate opponent. But there are various applications of force, and I'd like to use the construct of Mogadishu really quickly to illustrate a problem we have. If the Somalis had thrown a mortar round into an area target and killed some Americans, let's say some logistics guys, it wouldn't have made much difference. (By the way, the single biggest loss of American life in Desert Shield/Desert Storm was a single Scud missile into a logistics support unit in Saudi Arabia. It wasn't about combatants and, to be very frank with you, nobody cared.) But in Mogadishu, this was against the most elite special

operations forces, the Rangers. It was deliberate, it was precise, and it had a net effect we could not live with.

Maybe I shouldn't make this case, but the conditions for the Somalis have badly deteriorated. Many of them are dead who would not be dead now had we stayed there. I've met the Somalis, and I've dealt with them. In fact, I had a personal meeting late one night with a tribal group leader who's known as a "red mouth." That means that he engages in the practice of eating an interior part of his enemy's body whenever he has the chance. These are not the kinds of people you can rationally reach agreements with. You have to destroy them. That's my view. That element has to be worked in here somewhere. I believe that we have a very long history of trying to rationalize conditions with Mr. Hussein. We weren't able to do so, and it's brought us to this. I'm not telling you that this is going to turn out great, even if we can kill the right people. I'm telling you it might turn out badly.

Because time is fleeting, I'm just going to touch on each of these issues (**Figure 3**). We've got a lot of challenges here. I'm going to try to get positive for just a minute. I hope that science and technology and good people are going to solve some of our problems, and I'm going to talk a little more about that in a minute.
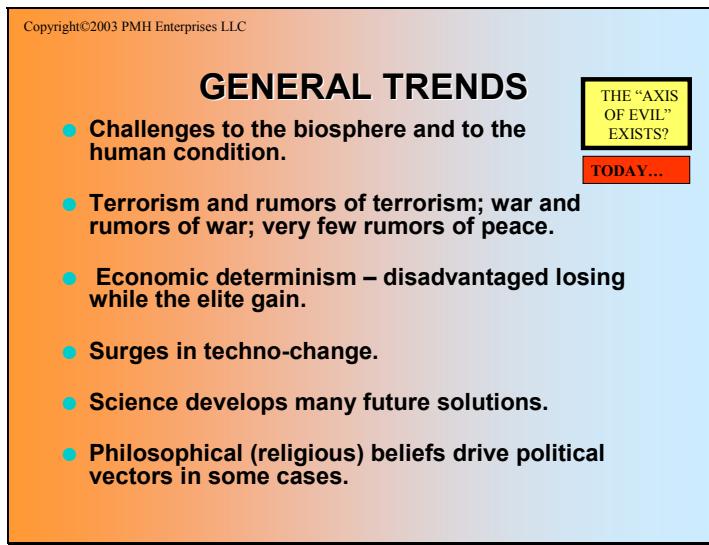
Figure 3

I do think that this characterizes the current set of threats in a different way than you may be used to seeing (**Figure 4**). This is not merely about the Islamic world, and if you think it is, you're just wrong. It's much broader than that.

Part of it has to do with this perception issue. I'm glad you mentioned *The Guardian*. Apparently you read *The Guardian*, and I occasionally read it too, usually late at night when no one sees me. (Just kidding!) They're one of the great proponents of an idea that is now being put forth fairly commonly in the broad international media: that America is taking on the characteristics of an empire, and that the American military are, in effect, the new centurions, going abroad to carry the torch of Rome—read Washington—to those who do not want it, but will

Figure 4

have it. I don't know the truth of that, but I can understand it, and it might be right. I notice that the president in his comments yesterday, and in others this morning, made a great point of saying, "We don't want to stay. We don't want to take your oil. We don't want your land. We don't want you. We just want your regime to change and we want you as a group to act in accordance with the community of nations."

Cynicism, and perhaps reality, being what they are, the rest of the world—51 percent in my view—are going to say, "Whom are you kidding? You want to control the economic value of the petroleum under the sands of Iraq, and you may want other things. You may want to control a dependable base from which to launch into the broader regions of the construct known as the Middle East." And they might be right.

Student: It seemed to me that your earlier comments about the "axis of evil and a few more" were specifically hinting at that.

Hughes: If you thought that, you were exercising your 51 percent prerogative!

Student: But to hear you say that and also to point out that it's going to be American forces, which I think is debatable in the peacekeeping part of it, certainly sounds as if you would agree that it's about American hegemony.

Hughes: I am saying that. I'm asking, who else is there?

Student: And yet it seemed that you were criticizing the viewpoint of *The Guardian*, for instance, and how they make that argument.

Hughes: The only part of this argument I'm criticizing is the characterization of us as Rome. I'm not criticizing the idea of a rising empire. I've looked at the globe. I've looked at all the countries

and I've looked at the likely, possible alliances and coalitions, and we are it. We're the best choice. There isn't anybody else.

Student: It sounds like Rome to me. Maybe it's not bad.

Hughes: It sounds like Rome because you're burdened with that historical metaphor, but Rome is not necessarily good or bad in modern terms. I think the general connotation is bad. When you use Rome, you immediately put us in the box of the Roman rise to power, followed by corruption, followed by decline. I note the trend, especially among younger people, to rapidly reach the conclusion that we're going to fail. Bullshit! Who says that? Where does anybody get off characterizing us as wrong? Things have changed. This is very different. By the way, I personally believe that there's some measure of value in our statements (I hope). I'm not completely disoriented or dissociated from them, and if we say we're going to get out of Iraq I hope we are, on a couple of counts. First, I don't like peacekeeping, and second, I think it's the right thing to do.

On the other hand, I think we wanted to get out of Korea and we couldn't. Although it's not necessarily a parallel for anything except Korea, I note that as recently as a month ago the South Koreans were pressing hard, giving us all kinds of problems, and giving us actual clear statements that it was time to get out. Then those accommodating North Koreans got a little belligerent, flew a missile out into the ocean, and did a few stupid things like intercepting our airplane. The next thing you know, those same South Korean voices are saying, "Can't leave! We need the tripwire."

I'm back to the 51–49 percent construct. It doesn't matter how good we are; we're going to have to deal with perception. I personally think that we Americans ought to argue against the perception of us as Rome.

Student: Ethical questions aside, do you think it would be in the interests of national security to move our overseas strategic centers from, for instance, Germany to Iraq?

Hughes: Not at all. In fact, that's counter to everything I've just said. I think we must have bases overseas. I think we ought to have them on the basis of agreements, and they ought to be reconsidered and renegotiated. If cultural, political, or economic changes occur, and we no longer have those basing rights, then we should leave. That's fine.

I hasten to add that we are the only country on earth in the position to do that. No other country anywhere has such basing, and we are the only country—and probably will be for many years—that is capable of projecting force out of our homeland into the global condition. We do that in part by this remote basing in foreign lands, but in part we also do it as we have just done it, by a magnificent transportation, communications, and supporting infrastructure that allows us to take large things—groups of people, equipment, and capability—from our CONUS [continental United States] base and project it around the world when we need it. If we weren't in that position I might give you a different answer, but we are. That's the good news, by the way.

Oettinger: Correct me if I'm wrong, but that's in part a consequence of having made a virtue of necessity. We didn't do it exactly willingly, but we still had to close our bases in Turkey and hither and yon because of the earlier 51 percent kind of thing.

Hughes: I think that's right. Necessity, often the mother of invention, has forced us into this construct where we can project force. But the fact is that our economic vitality allowed us to do what before we could only imagine doing.

I think we're going to deal with this problem for years. You are going to inherit this very problem, in spades, and that is: should we now become alienated and detached from and leave Turkey? The answer to me is no. It would be a very destabilizing act. It would put the NATO [North Atlantic Treaty Organization] alliance at risk, it would change the construct in the Black Sea environment, and it would change everything in that part of the world. It would be inherently bad for our country. But there are some voices that are saying that the only thing worse than a Turk is a Frog.

Oettinger: Again, there are misperceptions there. There's a long history of these disagreements with the French. What is really interesting historically is that the low-level collaborations, for example military-to-military, have remained.

Hughes: Until now. In the past month, it has fallen apart. They can hardly talk to each other. There's a real rift. Germany, yes. France, no. It's a real problem. I don't know if any of you are denizens of the Internet. You probably don't see any of this low-level irritation that's going on. If you care to go slumming around the Internet (how's that for a concept?!) you might take a look at some of what's out there in the popular environment. It's quite alarming.

Student: Missing from that slide is that France is one of the largest long-term threats to our national security. Weren't they responsible for building the reactor that the Israelis bombed at Osirak? They provided the nuclear technology to Iraq.

Hughes: There's a difference between the technology for a nuclear reactor and weaponization.

Student: We supported Iraq too, if we want to go back that far.

Hughes: Yes, we were Iraq's best pals at one time, against Iran.

Student: But in the long term, there's this issue in France. They have a veto on the Security Council, they're in NATO…

Hughes: No, they're not. They participate officially in the political side of NATO, but not in the military side.

Oettinger: This goes back to De Gaulle.

Student: But long term, what happens with France?

Hughes: That's a very good question. It has the merit of being specific and irritatingly difficult to answer. I don't know. I personally think we'll regain some form of normalcy, because, as Professor Oettinger said, we have such a long and I think meritorious history with them. Even though we've had disagreements and difficulties, really it's been pretty close, especially at the working level. We've always had similar goals, based on the construct of freedom.

A different phrasing of the question, which includes France, might be a better one for me to answer. I would phrase the question as: What happens now with Europe, and the Europeanization idea? I don't think France is important as an independent country in this discussion. I shouldn't say that—it's important, but France is part of something larger. The idea of the European Union [EU], the European Community, and Europeanization as counterparts, in effect, to the United States and its friends and associates is a very interesting one. I would say that France is going to have to work hard to avoid becoming marginalized in Europe, because so many of its associated European partners went in a different direction from France on this problem. To be honest, I also think that France didn't do itself any good with this kind of mealy-mouthed, half-hearted, last-minute set of statements about "Well, since you're going to do it anyway, we might help." In the intercourse among nations, this is not a favorable thing. It's actually bad.

I really believe that France will be a friend to the United States in the future. I think we're going to have a lot of relationships. I think commerce is going to continue. There's lots of strength there, but do I think there will be a lasting impression that you can't trust the French in some tough, difficult times? I'm afraid so. So what's new? I doubt that's very new. I don't think it's all going to be too bad.

But Europe is more interesting to me. Is France going to be a leader in Europe, as it used to be? I'm not sure.

Student: A very interesting article came out two or three days ago in the *International Herald Tribune*. It was about the retrenchment in both France and Germany, particularly Germany, because the government turnover there will be a little bit sooner. Chirac is in power for another four years, whereas Schroeder could be out who knows when. He has 25 percent approval ratings.

Hughes: We might get somebody worse than Herr Schroeder!

Student: The opposition candidate is getting 50 percent positive ratings, so the CDU [Christian Democratic Union] will probably come in. That's Helmut Kohl's party. Apparently there's a lot of sniping about "We might have overplayed our hand. We shouldn't have followed the French around," which I thought was very interesting.

Hughes: That adds to my point that this is not about France; it's really about Europe. My view is that the Europeanization movement was both good and bad, because now I'm worried that it might become unstable somehow. I don't know what that means. I'm not forecasting warfare in Europe, but I am forecasting a period of uncertainty and tension.

Student: Would you also say that Europe as a whole is becoming less important, as opposed to Asia, for example? If you look at economics and everything, isn't Europe contracting?

Hughes: No. It's growing. It's an expanding economic bloc. It's number two in the world after Asia, ahead of the United States. It's the second largest economic bloc when you think of the EU. It has a greater net collective national product than we do.

Asia is hard to define, by the way. The term "Asia" has to be very broad to make the kinds of statements I'm making. Even ASEAN [Association of Southeastern Asian Nations] doesn't

have the kind of collective association that the EU does. ASEAN is economic only. The EU has military, security, trade, transportation, communications, tourism, health care, et cetera, dimensions. They're intermingling for a common purpose. No such common construct occurs in Asia right now.

Student: You're referring to it as a cohesive bloc, then.

Hughes: Yes. I'm referring to the EU as having the intent to create a bloc. That can be both good and bad. I think it is potentially the rise of a great competitor if they're together, but they're not together, especially now. So I don't know what's going to happen.

The bottom bullet on this slide [Fig. 4] speaks to an earlier point. You can't solve a lot of these issues with military force, and you shouldn't try.

I'm going to show you two vugraphs rapidly (**Figures 5** and **6**). I'm not going to talk. I invite your perceptions. I invite you to think as you're looking at them what these words mean to you. Have you've got them firmly fixed in your minds?
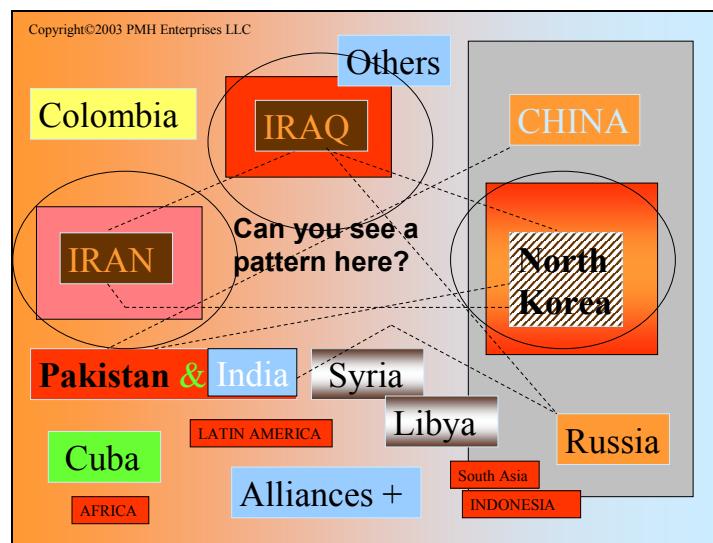
Figure 5

Oettinger: Those are all the sources of instability in the world.

Student: These are just the geopolitical sources. There's also the huge loss from organized crime, which is probably larger than the threat posed by some of these countries.

Hughes: Good for you! An excellent observation. Any others? I urge you to be critical, because I don't know that this is right. I'm just telling you this is now. It's geopolitical, it's very limited, but it's nevertheless critically important.
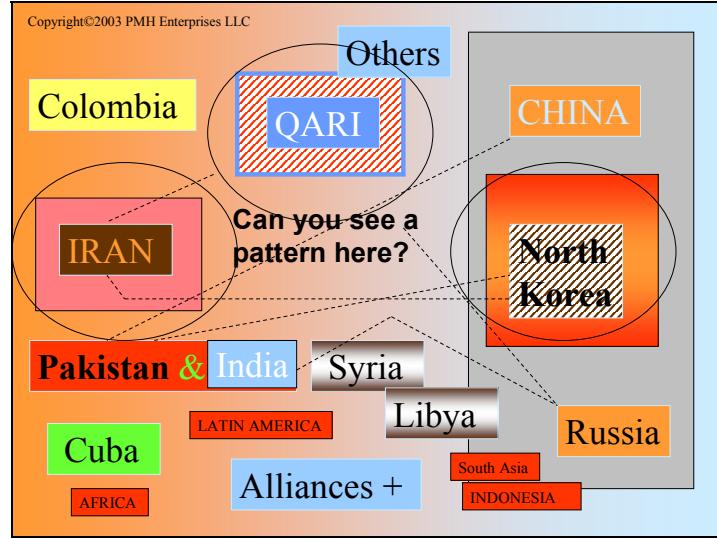
Figure 6

I hope you caught that I changed one country. It's not a big nuance, but it's now red, white, and blue.

I think I've already covered these two, so we'll go on (**Figures 7** and **8**). I would tell you that if you had the idea—and I'm getting a lot of bad feedback about this concept—that you were going to be uninvolved because you were going into commercial or technological industries, forget it (**Figures 9** and **10**). You will be involved. Unfortunately, one of the ways you're involved is through the homeland security construct, which is still evolving and changing. I'm not sure we've understood yet how invasive it is. One of the invasive parts of it is that your identity is going to be not only known, but also clearly registered. So we've got a problem.

Figure 7

Figure 8

Figure 9

Figure 10

Here I'm going to go into the future, because we only have about twenty-five minutes left. We've got this perception problem I've already talked about, crime with national security implications, information operations, and terrorism here in our homeland (**Figure 11**). There are lots of problems. Keep those thoughts in mind, and I'll put these vugraphs on so that you can take a look at them really quickly. Just let your mind roll over them. By the way, the current antimissile defense construct will not protect us against cruise missile variants with terminal guidance (**Figure 12**). I view terrorism and crime with national security implications as conditions that cannot be tolerated.

Figure 11

Figure 12

I think we can see trends here. The trends to me are pretty clear. I'll give you three right now. First is proliferation—parenthetically, WME. Second is the diminution in the world of the nation-state and the rise of transnational conditions. Third is the search for stability in an uncertain and unstable environment. This is what it all adds up to (**Figure 13**).
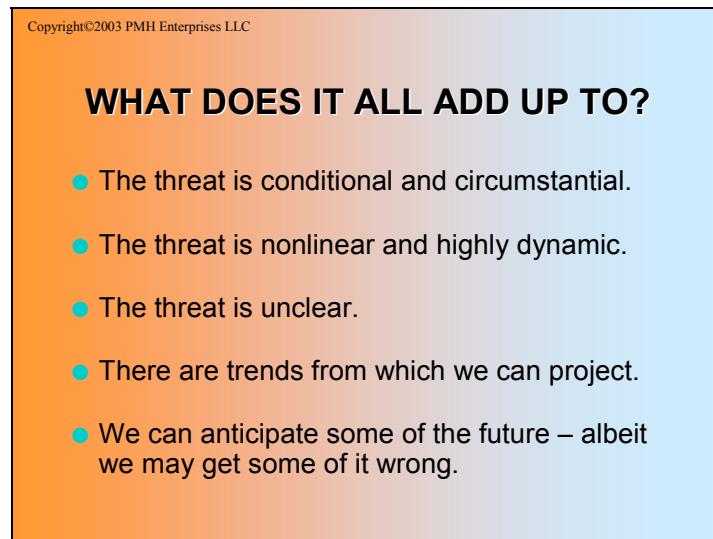
Figure 13

I'm going to try this vugraph on you for just a minute (**Figure 14**). Start up at the top. The timeframe, 1985 to 2002, is a pretty good one. In my view—and you can dispute this—we were still kind of low tech in that era. We were largely linear; we had a tendency to see things unfolding over time without leaps or spirals. We had a kind of nonurban fixation. We still, to this day (until we go into Baghdad) are hoping to conduct most conflict in an open lot, and it's
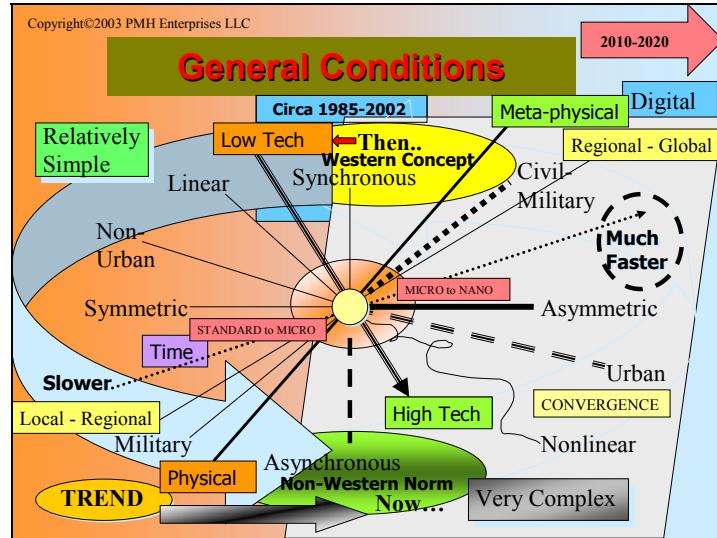
Figure 14

damned hard to find an open lot to hold a war in. We hope for symmetry, even though we've talked ourselves into this asymmetric environment.

We were dealing with time on a time line we can kind of understand, and things moved relatively slowly. We were dealing with a measuring system called "standard evolving to micro," the "standard" measure being the things we can see and measure in standard form. We had a local to regional focus. The military was the military: handsome, good-looking guys all. We knew who they were and they were okay. We had kind of a physical orientation.

This is my view, and you are going to live through this sweep of change in the next few years. You are going to be in a world that is, first of all, asynchronous. Ostensibly, it's going to change to be more technology oriented than even the recent past. Another wave of technology seems to be coming toward us. It will be a very nonlinear kind of environment that's causing us headaches. It will be a very urban environment, which I've already covered. It will be asymmetric, and that's already probably happened. The measurements will be micro to nano, even if we don't have actual applications. We will see a much faster pace. The military cannot exist apart from the civilian structure. The focus will be regional to global instead of local to regional, and I hesitate to use the word "meta-physical," but maybe there should be more of that.

So that's my construct, and I think it's an unfortunate but commanding one (**Figure 15**). I think we need new ideas. I don't think much would be gained by going through the trite and too-often used term "you're thinking in the box" or "you have to think outside the box." My view is that the damn' boxes exist and there's nothing you can do about it. You have to be able to shift and come in and out of the box, find the right issues in a given context, and then leave them whenever you need to. Don't stay with them. The idea that we can begin and complete a program on a predetermined timeline, stick with the technology along a critical path to the end, and form a linear project plan at the beginning that will be viable to the end I think is outmoded. We can't do it. The pace of technology doesn't allow it, and actually the pace of change doesn't allow it. I
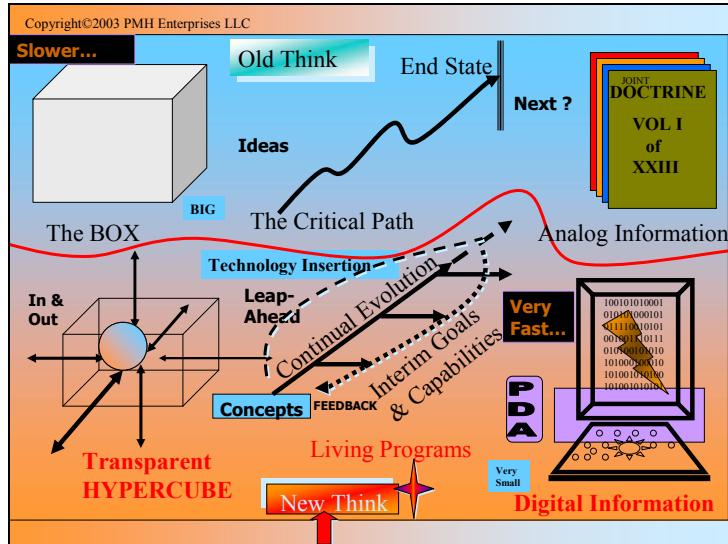
Figure 15

think we need to be on this continual evolution pathway that is very nontraditional, does not meet bureaucratic constructs, and is unstable.

Oettinger: Can you stay on that one for a moment? We've talked about some of this before, but I just want to underscore that there's no end state, because everything you students are going into institutionally—this university, the government, most companies, and so on—treat budgeting and planning as though they were going from one stable state to another stable state. The notion that you have to budget for continuing evolution, as opposed to going from A to B with the idea that B somehow has an independent, long-lived existence, is totally pernicious. There are lots of great ideas in this, but that one I wanted to stop him on, because it would have gone by rather quickly. Fighting that notion and aligning budgets to the evolutionary paradigm are going to occupy most of your time and squander most of your energy. I don't know of any organization that practices it.

Hughes: I know one that still has this upper, "old think" construct in some of its programs. It's called the Department of Defense. It's just awful. It's a built-in problem, and let me tell you what the problem is. We used to be able to build an airplane, for instance the Joint Strike Fighter, that will be with us thirty-five years from now. We have good examples. I don't think we can do it in the future. Things are going to change. We might have a flying saucer twenty years from now, and we're just plain going to have to change.

An easy, simple example is: Could you do your work today with a computer made ten years ago? You couldn't, because you don't want to. You want to keep up. You're dealing with the perception that you must modernize to progress.

Student: But budgeting for growth is very difficult. It's very difficult, for instance, for a company that expects to double in size next year to know when to recruit and hire employees. You can bring them on too fast and die, or bring them on too slowly and die. On the other hand, the reason we won't have flying saucers in twenty years is that even though information

technology is changing very quickly, and even though economics is changing quickly, aerodynamics and physics don't change quickly.

Hughes: You're not playing fair! You're bringing standard model physics into this conversation. Surely you guys from MIT know better than that! That too is changing.

Student: Basic aerodynamics don't change. If you look at the airplanes today and the airplanes of a couple of years ago, they look very similar. Their performance characteristics, other than fuel emissions, are very similar.

Hughes: Frankly, I don't even believe that. The passenger-carrying volume of commercial aircraft has changed radically. Boeing 767s carry 100 more people now than airplanes did before. Things have changed, and I believe they're going to continue to change.

I agree with your basic premise, by the way. I think it's very hard, especially when it challenges traditional views. I urge you not to be traditionalists.

This is, once again, three vugraphs in a row. Take a look at them and think whatever you wish. This is how I saw it in 1988 (**Figure 16**). I thought the pace of technology was pretty high in 1988. It wasn't applied technology, but the ideas—the possibilities, the potential—were there. The resource base for the military went down markedly. The pace of activity stayed pretty high, and the pace of policy and procedure was woefully inadequate for these changes. That's my view. Lots of people disagree with me.
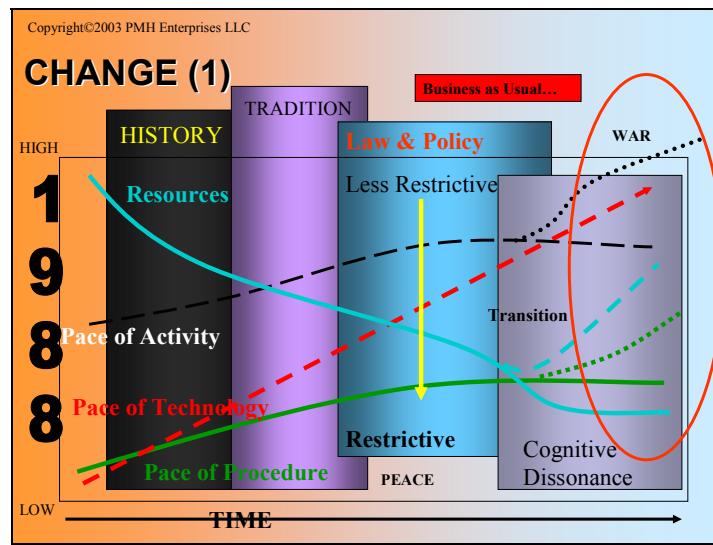
Figure 16

From 9/11 on, something happened (**Figure 17**). Actually, most of the trends kind of stayed the way they were, although the resource base went way up. It changed radically, just like that. The pace of procedures and policy also changed. In fact, most of the changes were transparent.
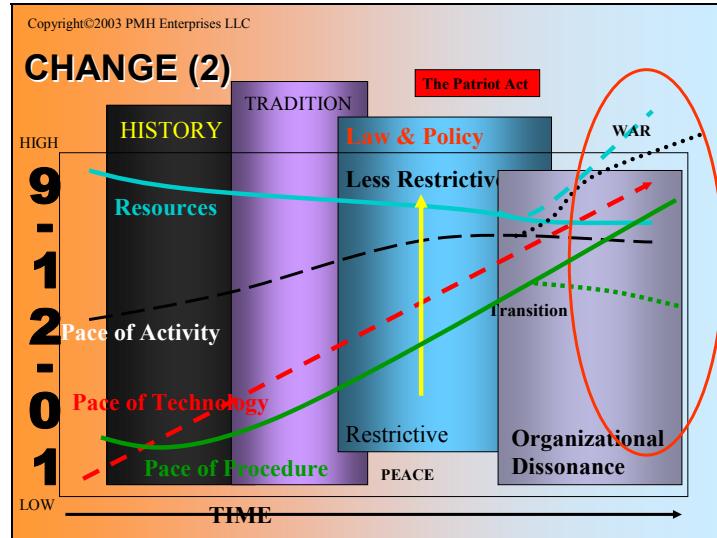
Figure 17

Let's try a little question-and-answer. How many of you have ever seen a copy of the Patriot Act? You think that all of you have, but none of you have, because you have never read the classified adjuncts. You don't know what you don't know. I'm telling you that things have changed, and you are not fully aware of all the changes. I want you to understand that's the way this damned thing is working. The citizenry is not empowered by full knowledge.

This is what I think the trends are going to look like in about 2010 (**Figure 18**). I predict that the resource base to support the national security construct is going to stay very high, and may surge at times. That has led, and will continue to lead, to deficit spending, because the military–security construct does not produce any sort of product other than a condition. I'm
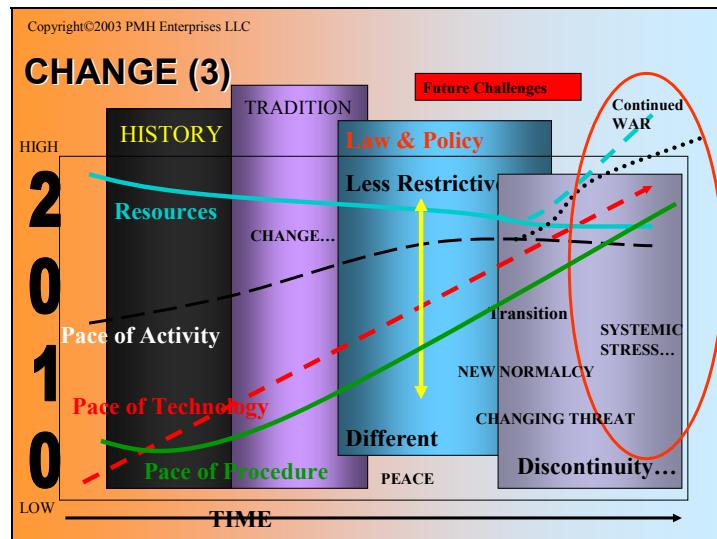
Figure 18

telling you that the pace of activity is going to remain high, in part because of the "axis of evil and others" construct, but in part because the condition of the world is so unsettled and uncertain. Whether anyone agrees politically or not, we are going to be leading an attempt to make it more certain. I see technology continuing at a very high rate. I see the pace of procedure trying to catch up. I think it might, although I don't know.

I do think these are problems (**Figure 19**). I think this technological surprise—I'm not talking about small things, I'm talking about big things, especially WME—will happen.

Figure 19

I'm going to go on to this idea (**Figure 20**), and then I'll go to the future. Because of all the things I've talked about, and a few things I haven't had time to get to, I believe that there is an emerging set of conditions. Part of this emergence is a variety of pressures for change that are converging; thus the use of the term "convergence." I also believe that the idea of complexity in our lives, in the government's context, and in the global condition is alive and well and intensifying. I think there are even some indications of a retreat from involvement in some conditions because they are so complex.

This is one way to look at trends and conditions (**Figure 21**). These are some of the vectors that I see, to include national imperatives. Some countries, such as China, France, Russia, or the United States, just want to do what they want to do. We are on this vector in the middle. If you look at those pressures singly, one at a time, they're not necessarily very imposing. If you find in them some idea of convergence, they're almost overwhelming (**Figure 22**).

– 29 –
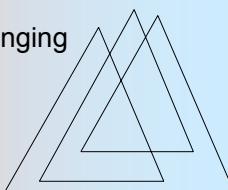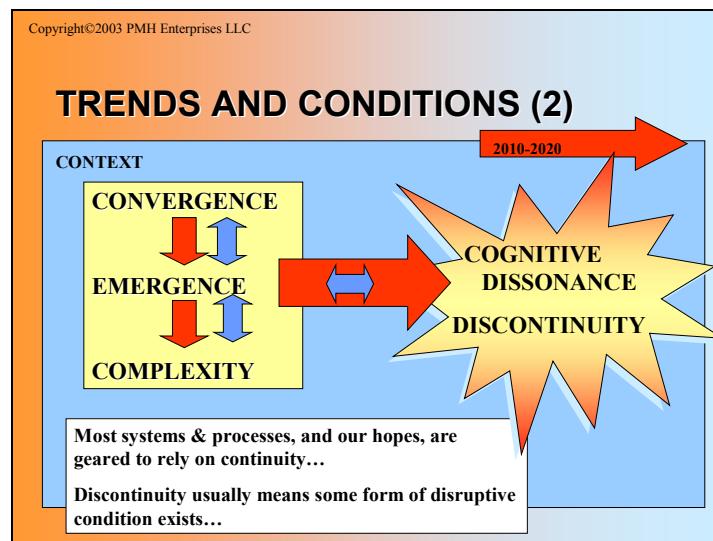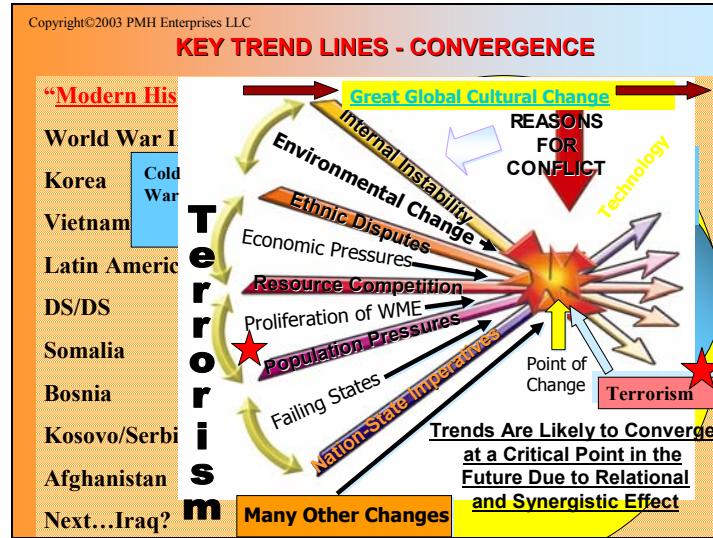
Figure 20

Figure 21

Figure 22

I do want to stop at proliferation (**Figure 23**). This is the current construct as I see it; there may be some variations on that theme. I have circled the United States on purpose. Conventionally, we are the greatest proliferating nation. Unconventionally—in terms of WME—we're the least proliferating nation. One can argue the merits of that, but that's what it is. We do have some friendly countries up there, but a lot of those countries are problems for us geopolitically.
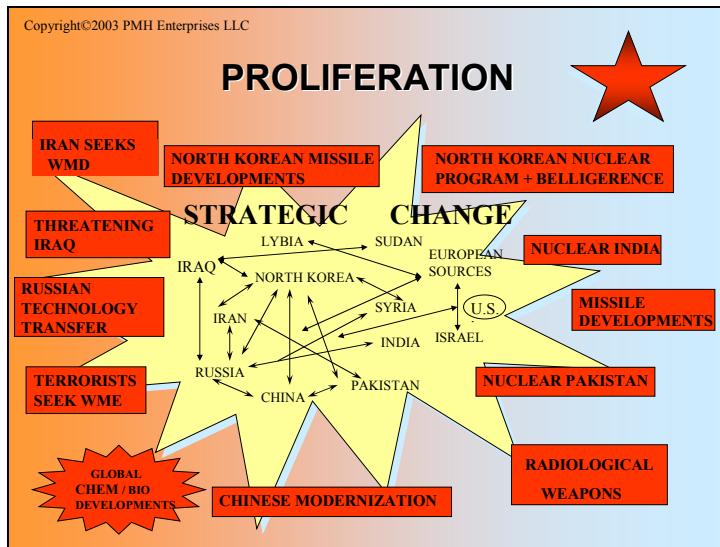
Figure 23

We don't have a peer competitor, and I don't think we're likely to have one (**Figure 24**). China is a contender, but it's got a long way to go. I think these trends and conditions are going to be with us for a long time, and I think they're probably going to continue for longer than your first working life (**Figure 25**). For those of you who weren't at lunch, that means the next twenty

Figure 24

Figure 25

years. I attribute three working lives to each of you young people, so I hope you enjoy your retirement at age eighty-five.

Oettinger: That's the most optimistic thing you've said all afternoon!

Hughes: All of you are going to live at least that long, unless you get killed by accident.

If you read the middle part of this vugraph, I think that this construct is alive and well in Washington, at least (**Figure 26**). What I'm about to say is very arrogant—arrogant to a fault. Set aside what the mass of people think. Some things are so bad for them that you cannot allow them
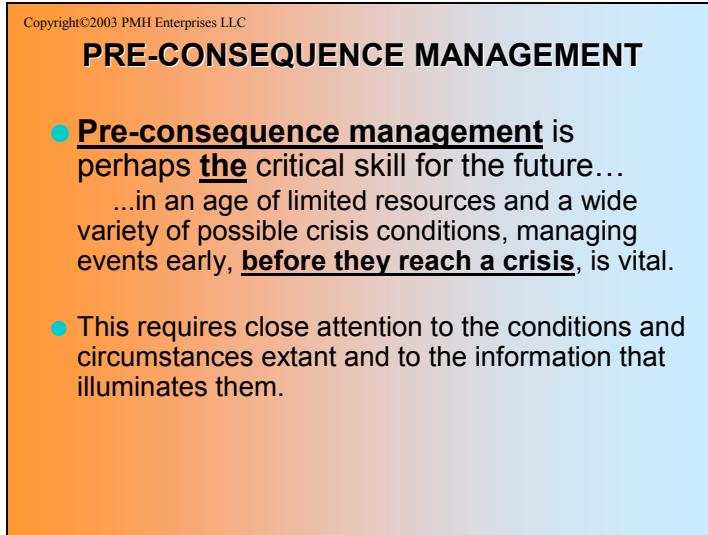
Figure 26

to have them. One of them is war in the context of terrorism in the United States. Therefore, we have to abridge individual rights, change the societal conditions, and act in ways that heretofore were not in accordance with our values and traditions, like giving a police officer or security official the right to search you without a judicial finding of probable cause. Things are changing, and this change is happening because things can be brought to us that we cannot afford to absorb. We can't deal with them, so we're going to reach out and do something ahead of time to preclude them. Is that going to change your lives? It already has.

I'm going to give you a view of the future in seven minutes or less. If you could read this really quickly, this is how I see the evolution (**Figure 27**). I think it's going to continue to change lingua franca of 2020 will be English. There are some major exceptions to that, such as China, although everyone in China uses English for business. It's very powerful to speak another language and be interested in some other culture, but, quite frankly, English is it.

Do I think that you are going to have a different aging process that I do? Yes, very different. You're going to be part of a much larger bloc of the population than I will be in, and the support mechanisms for you are going to have to be very different.

Do I think that the threats to security are largely criminal? I think that's the trend. It's away from nation-states, large imposing armies, and the construct of maneuver or open warfare. It's toward very interior security conditions, based in part, if not largely, on criminal constructs. Is that going to change the face of the American military? Absolutely. It already has.

Student: This sounds an awful lot like scenario planning, and I was wondering if that influenced your thinking at all.

The NEW WORLD…Circa 2020

MULTINATIONAL– TRANSNATIONAL –GLOBAL

INTERCONNECTED – INTERDEPENDENT

FUNCTIONAL – SENSITIVE TO PERTUBATION

DISTRIBUTED – CIRCUMSTANTIAL SYNERGY

HAVES – HAVE NOTS CONTINUE

DEVELOPING "WORLD" CULTURE

LINGUISTIC AND CULTURAL BLENDING

REDUCTION OF NATION-STATE IDENTITY

RISE OF ALLIANCES & COALITIONS TO COMPETE

INDIVIDUAL IDENTITY CAREFULLY DEFINED

AGING POPULATION WITH DIFFERENT GOALS

FUTURISTIC VECTOR – RETRO SUBCULTURES

BIO-TECHNO PARALLEL CONSTRUCTS

THREATS TO SECURITY ARE LARGELY CRIMINAL

VERY DYNAMIC
NON-LINEAR
EVER CHANGING

Figure 27

Hughes: Not at all, but you're not the first person to raise that issue. Scenarios are more detailed and focused. They usually have a point. This is very broad and general. I wrote a scenario recently for the Central Intelligence Agency about a nuclear weapon being brought into the port of Miami on a cruise ship, and they said it was too dangerous to use. There were too many problems. It would cause trouble. That, to me, is a scenario. I could make a scenario about a future war. We play war games all the time. Those are scenarios. I'm talking to you about the trends that I see rising across the global condition. There are scenarios embedded in each of those (**Figure 28**).

U.S. GLOBAL SECURITY CONSTRUCTS

- **Ubiquitous global "presence" with some exceptions**

- **Rule of law is goal – defining the rules continues**

- **First choice "weapons" effects non-lethal and controlling**

- **Societal norms include some radical changes and some forms of exceptional tolerance**

- **U.S. seeks global balance, self determination, and no violent opposition to rule of law**

- **Transformed global condition does not yet include fringe elements and does not yet offer solutions to every problem**

Figure 28

Student: Absolutely. I mean scenario planning as sort of a method that Shell Oil pioneered, where you think very strategically about the driving trends and factors that are going to contribute to a certain future and then figure out from those trends what the various scenarios might look like and how to handle them.

Hughes: Yes. I think we should get to that point. I'm not there. I wish there were a group of very smart people who were thinking about how to deal with the problems I'm raising. Some of these trends I think are positive, and there's nothing we could or should do about them, but many of them are bad trends. They have a negative potential, if not probability, and I think we should be concerned about them.

Oettinger: You mentioned Shell. The technique is described in Peter Schwartz's book.[4]

Hughes: I want to go on to the very end, because we've only got a couple of minutes. I just have a few vugraphs I'd like to show you.

I think the American military is going to change fundamentally (**Figure 29**). I think the intelligence community is going to change fundamentally. I think there will be a national intelligence construct and a set of somewhat homogeneous forces, but applied always under the joint construct. That's really with us now. I don't think that's new, but I think it's going to continue for the foreseeable future. The out years I'm talking about are essentially a twenty-year period. I didn't put it on here in so many words, but I think there is a blending of responsibilities. American military personnel are engaging in law enforcement activities. That trend will continue.
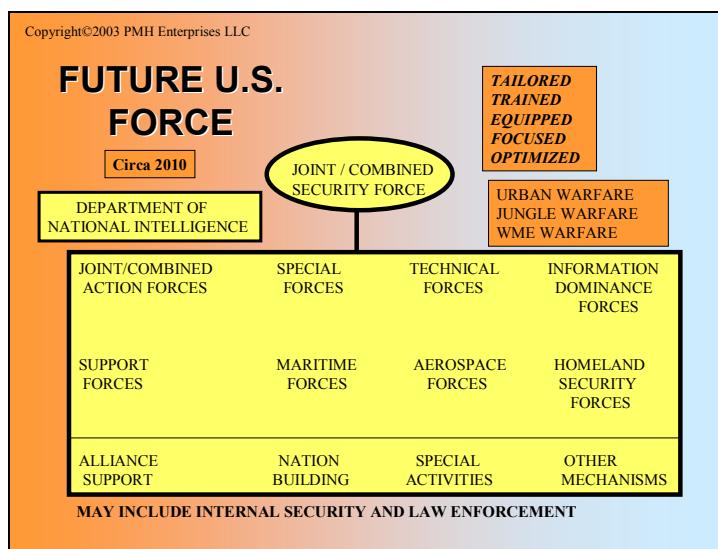
Figure 29

[4]Peter Schwartz, *The Art of the Long View: Paths to Strategic Insight for Yourself and Your Company* (New York: Doubleday, 1996).

There are lots of organizational models over here (**Figure 30**). If you could just read through these for a minute it might be worthwhile.
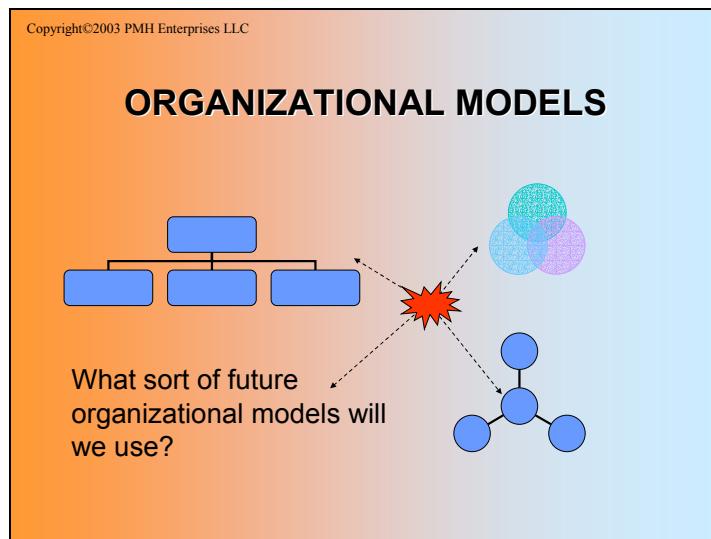
Figure 30

If we were fighting a robust opponent, would we have grouped everyone in a relatively small area of northern Kuwait (**Figure 31**)? No. If we didn't have air superiority, would we have done that? No. I'm cautioning us not to think too much about the past in the context of the future.
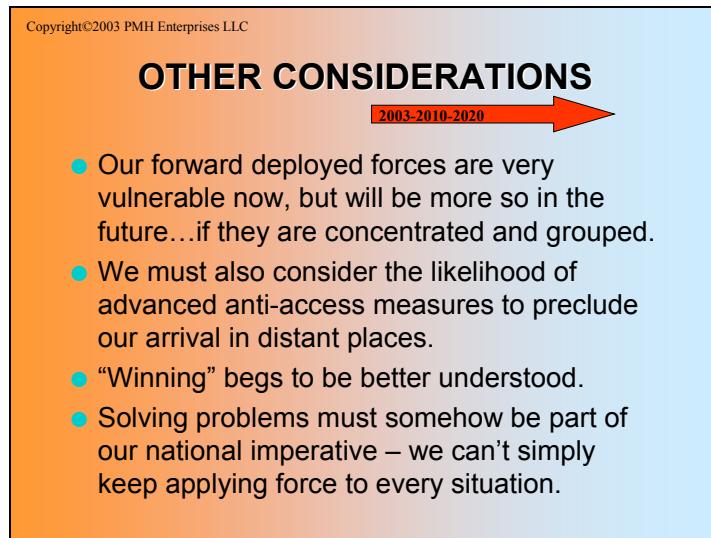

Figure 31

We have many things to learn. I don't know what "winning" means. I know we haven't won in many cases. We need to worry about that. I think I've told you the bottom bullet about three times, and I'm telling you again: we just can't use force in every case.

Is WME use likely (**Figure 32**)? I think it's a certainty. It's already happened. It's going to happen again. How big? I don't know. When? I don't know. I wish I did.
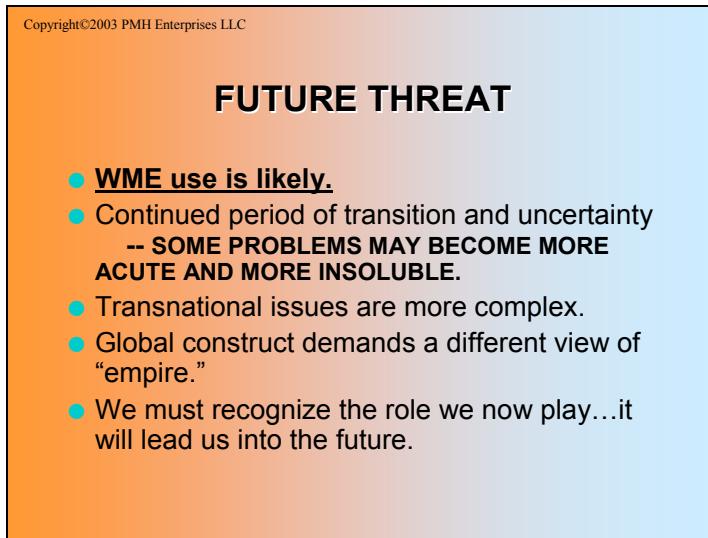
Figure 32

Maybe there will be less war because things are so threatening (**Figure 33**). I don't know. That's utopian.
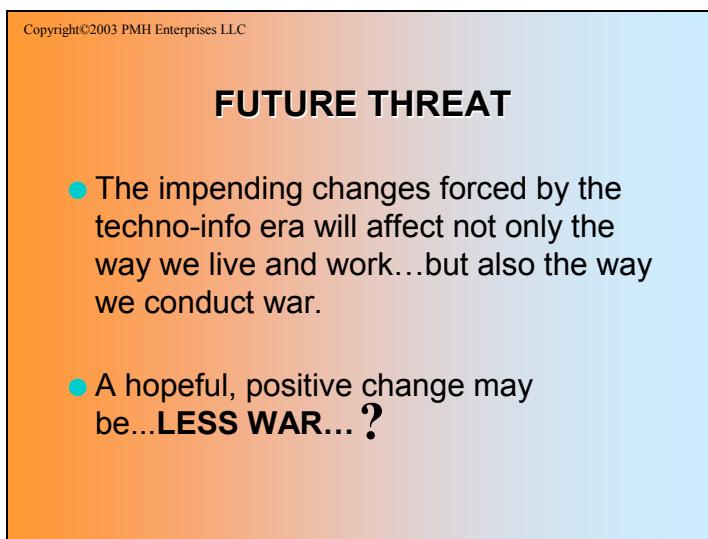
Figure 33

Here are a few questions (**Figure 34**). Do we have to do everything in the world? Right now, almost. It seems that way. Who else is there? Whom can we depend on? It's an open question. What's coming out of this era of emergence and convergence? A very difficult set of conditions.

Figure 34

I'm going to go to the end. I can't go by this slide because we have at least two important technologies here (**Figure 35**). I do think that things have changed and will continue to change radically, and I'm not sure we appreciate the changes. I think we are still, to this day, precluded

Figure 35

by policy from using existing nonlethal controlling capabilities. We could avoid killing all the people in Baghdad if we were willing to subdue them nonlethally now, cart them out, and let them live later. That is not a current construct we're willing to support societally, so if you're with me here the logic goes: We're willing to kill them, but we're not willing to subdue them, control them, and then allow them to live. It's a different sort of thing.

Do I think this will change? Yes. I personally see the Toffleresque future in biological terms, not merely in the organisms of biology, but in the application of biotechnical capabilities.

Do I think there is a cumulative effect (**Figure 36**)? Do I think that if we took on the axis of evil now, totally, we could do it? I'm not sure. I think that's a really open question. We could be nibbled to death by the ducks.
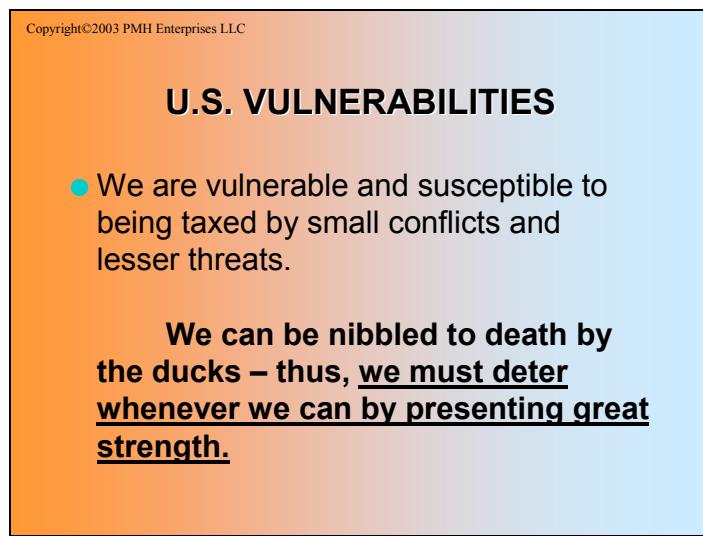
Figure 36

Here are my bottom lines (**Figure 37**). I think there are lots of good reasons to believe we could control general instability, but we've now got to think about the future problems we're going to encounter and have to live with.

I think basically we're the guys (**Figure 38**). Nobody else is going to do it for us. There's no other country, or group of countries that are our allies, that is willing to stabilize the world.

I have a few other questions (**Figure 39**). This is the end, and I'm sorry for keeping you so long (**Figure 40**). I like this quotation. I hate to tell you this, but I talk to a lot of young people who hunger for certainty. They want answers. Maybe they exist. I don't know, but I don't have them (**Figure 41**).

Oettinger: It remains for us to thank you for a wonderful presentation. I have a small token of our large appreciation. I think you can get it through security.

Figure 37

Figure 38

— 40 —
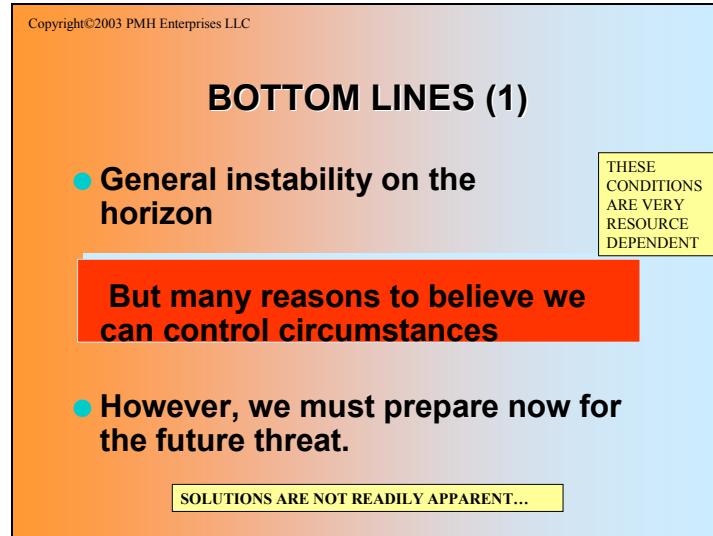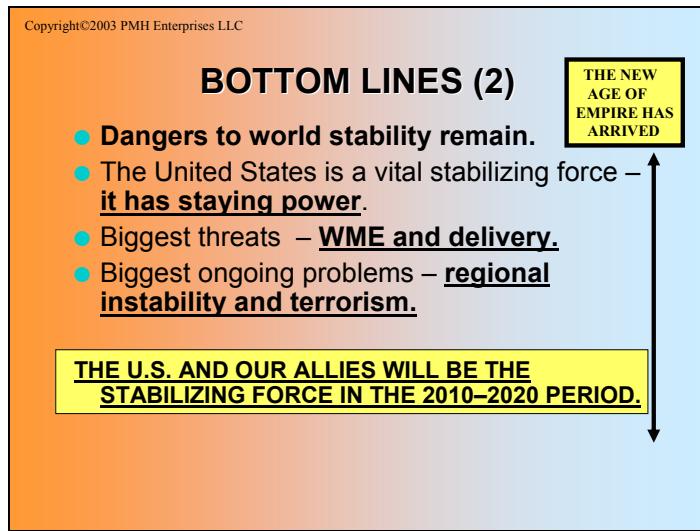
MY QUESTIONS

- What ever happened to time?
- DOD roles and missions are not in doubt…are they?
- Do we have the skills we really need?
- Do we have the resources we need?
- How special is "special"?
- **What if…we solved everything with force and change?**

Figure 39

"There are many truths, some valid for one, some for another.

Things are not what they seem… it is a lesson we must learn and relearn because we keep searching for certainty, and certtainty does not exist."

- Harrison Salisbury, 1989

Figure 40
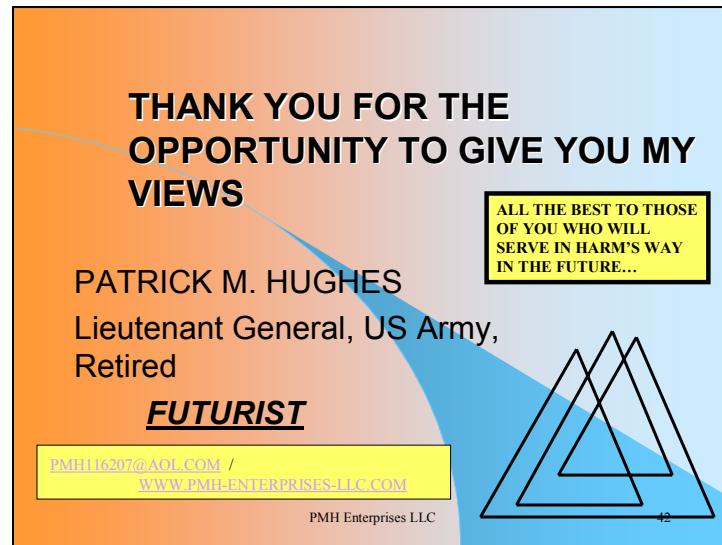
Figure 41

Acronyms

ASEAN   Association of Southeastern Asian Nations

DIA   Defense Intelligence Agency

EU   European Union

MIT   Massachusetts Institute of Technology

NATO   North Atlantic Treaty Organization

U.N.   United Nations

WME   weapons with mass effects