LOOKING AHEAD: FORECASTING AND PLANNING FOR THE LONGER-RANGE FUTURE

The Pardee Center *Conference Series Spring 2005*



The Frederick S. Pardee Center for the Study of the Longer-Range Future was established at Boston University in late 2000 to advance scholarly dialogue and investigation into the future. The overarching mission of the Pardee Center is to serve as a leading academic nucleus for the study of the longer-range

Frederick S. Pardee

future and to produce serious intellectual work that is interdisciplinary, international, non-ideological, and of practical applicability towards the betterment of human well-being and enhancement of the human condition.

The Pardee Center's Conference Series provides an ongoing platform for such investigation. The Center convenes a conference each year, relating the topics to one another, so as to assemble a master-construct of expert research, opinion, agreement, and disagreement over the years to come. To help build an institutional memory, the Center encourages select participants to attend most or all of the conferences. Conference participants look at decisions that will have to be made and at options among which it will be necessary to choose. The results of these deliberations provide the springboard for the development of new scenarios and strategies.

The following is an edited version of our conference presentations. To view our conference proceedings in their entirety, visit us on the Web at www.bu.edu/pardee.

LOOKING AHEAD: FORECASTING AND PLANNING FOR THE LONGER-RANGE FUTURE

April 7, 8 & 9, 2005

Organized by David Fromkin

Sponsored by Boston University Frederick S. Pardee Center for the Study of the Longer-Range Future



CONTENTS

- 4 Presenters and Participants
- 6 KEYNOTE ADDRESS Murray Gell-Mann
- 9 SESSION ONE: "Long-Term Policy Analysis" Presenter: James Dewer Responder: Adil Najam Presider: John Gerring

11 SESSION TWO: "Forecasting for Business"

Presenter: Anita McGahan Responder: Zachary Karabell Presider: Lance Morrow

14 SESSION THREE: "Forecasting for Investment"

Presenter: Ian Bremmer Responder: William Grimes Presider: David Fromkin

SESSION FOUR: "Mapping the Global Future: NIC Global Trends 2020"
Presenter: Matthew Burrows
Responder: Ralph Buultjens
Presider: Enid C. B. Schoettle

19 SESSION FIVE: "Planning a Foreign Policy"

Presenter: Philip Bobbitt Responder: David Fromkin Presider: Walter Connor

Contents

for the Longer-Range Future

22 SESSION SIX: "Forecasting Global Transitions as a Tool for Planning"

Presenter: Barry Hughes Responder: Cutler Cleveland Presider: Sakiko Fukuda-Parr

25 SESSION SEVEN: "Forecasting for Defense"

Presenter: Andrew Bacevich Responder: H. Joachim Maitre Presider: Uri Ra'anan

28 SESSION EIGHT: "The EU as a Case Study of Planning: A Prospective Retrospective"

Presenter: Vivien Schmidt Responder: Renée Haferkamp Presider: Strom Thacker

31 CLOSING ADDRESS Sir Colin McColl



PRESENTERS AND PARTICIPANTS

Andrew Bacevich Professor of International Relations; Director of the Center for International Relations, Boston University

Philip Bobbitt Professor of Law; A.W. Walker Centennial Chair, University of Texas at Austin

Ian Bremmer President, Eurasia Group; Senior Fellow & Director of Eurasia Studies, World Policy Institute

Matthew Burrows Director, Analysis and Production, National Intelligence Council

Ralph Buultjens Professor of Social Sciences, New York University

Maya Chadda Professor of Political Science, William Paterson University of New Jersey; Research Fellow at the Southern Asian Institute, Columbia University

Cutler Cleveland Director, Center for Energy and Environmental Studies; Professor of Geography, Boston University

Walter Connor Professor of Political Science, of Sociology, and of International Relations, Boston University

James A. Dewar Director, The RAND Frederick S. Pardee Center for Longer Range Global Policy and the Future Human Condition; Frederick S. Pardee Professor of Long-Term Policy Analysis, RAND Graduate School

David Fromkin Director, Frederick S. Pardee Center for the Study of the Longer-Range Future; Frederick S. Pardee Professor of Future Studies; University Professor; Professor of International Relations, of History, and of Law, Boston University

Sakiko Fukuda-Parr Research Fellow, Science, Technology and Globalization Project, Belfer Center for Science and International Affairs, John F. Kennedy School of Government, Harvard University

Murray Gell-Mann Distinguished Fellow, The Santa Fe Institute

John Gerring Associate Professor of Political Science, Boston University

William Grimes Professor of International Relations; Director of Graduate Studies, International Relations, Boston University

Renée Haferkamp Former Director General of the European Commission

Barry Hughes Professor, Graduate School of International Studies, University of Denver

Zachary Karabell Senior Vice President; Senior Economic Analyst; Co-Portfolio Manager, Fred Alger Management, Inc.

LOOKING AHEAD: Forecasting and Planning

for the Longer-Range Future

Gerald Keusch Assistant Provost for Global Health, Boston University Medical Campus; Associate Dean, Global Health; Director, Global Health Initiative, Boston University School of Public Health

H. Joachim Maitre Director, Military Education; Director, Center for Defense Journalism; Acting Chairman, Department of International Relations; Professor of Journalism and International Relations, Boston University

Sir Colin McColl Former Chief, Secret Intelligence Service (MI6)

Anita McGahan Everett W. Lord Distinguished Faculty Scholar; Professor of Strategy and Policy, Boston University School of Management; Senior Associate at the Institute for Strategy and Competitiveness, Harvard University

Maureen Miscovic Chief Operating Officer, Eurasia Group

Lance Morrow University Professor; Professor of Journalism; Adjunct Professor of English, Boston University

Adil Najam Associate Professor of International Negotiation and Diplomacy, The Fletcher School, Tufts University

Augustus Richard Norton Professor of International Relations and of Anthropology, Boston University

Uri Ra'anan University Professor; Professor of International Relations, Boston University; Director, Institute for the Study of Conflict, Ideology, and Policy; Associate of the Davis Center for Russian Studies, Harvard University

Paul Raskin President, Tellus Institute; Director, SEI-Boston

Vivien Ann Schmidt Professor of International Relations; Jean Monnet Chair of European Integration, Boston University

Enid C. B. Schoettle Special Advisor to the Chairman, National Intelligence Council

John Silber President Emeritus; University Professor; Professor of Law, of Philosophy, and of International Relations, Boston University

Tony Smith Cornelia M. Jackson Professor of Political Science, The Fletcher School, Tufts University

Phillips Talbot President Emeritus, The Asia Society, New York; Former Ambassador to Greece (1965-1969)

Strom C. Thacker Associate Professor of International Relations; Director, Latin American Studies Program, Boston University



KEYNOTE ADDRESS Murray Gell-Mann

This meeting is concerned in great part with policy studies, with thinking about the future of the human race and of the biosphere of the planet Earth. In looking at the longer-term future, many of us might divide the various issues into categories such as military and diplomatic issues; or political issues, ideological issues, environmental issues, human health and wellness issues, family issues, demographic issues, economic issues, technological issues, governance issues, issues of democracy and human rights, and so forth.

It is natural when faced with a very complex system to try to break it up into more manageable subsystems or aspects, defined in advance, that one hopes can to some extent be studied or acted upon separately. That attempt is what the categories of issues represent. Trying to break up the world *problématique* in such a way is natural and quite common. The difficulty is that understanding a nonlinear system, especially a complex one, by putting together descriptions of various parts or aspects determined in advance, will work only if those parts or aspects interact only weakly, so that the whole system is, in the technical jargon, "decomposable." But that is not true of the world *problématique*. No one has found a way to decompose it into aspects that interact only weakly.

In that sense, there is truth in the old adage that the whole is more than the sum of its parts. Can we really separate environmental issues from those involving population growth? Can we consider these in isolation from technological change or from economic policy, for example, charging the true costs of decisions? Can we discuss issues of global governance without considering politics in the various countries and regions or without treating the competition and conflict among differing ideologies? If military and diplomatic policies fail, and mankind is plunged into a hugely destructive war, can our other objectives be attained? Probably not. Isn't economic growth threatened by the widespread prevalence of fatal or debilitating diseases? Can we separate off questions about democracy and human rights even within issues of democracy and human rights? What if democratic processes bring to power elements of society hostile for the Longer-Range Future

to human rights and to tolerance, or to ones that favor environmental destruction or aggressive war?

While separate consideration of the various aspects of the world situation is necessary and desirable, perhaps according to those categories we just mentioned, it very badly needs to be supplemented by integrative thinking that not only puts together the studies of various aspects, but also takes into account the strong interactions among them.

For such an effort to succeed, some kind of simplification is naturally required. Certain things have to be treated in a cursory fashion, and others in more detail. But that process, what physical scientists would call "coarse graining," cannot be accomplished by the categories established in advance because they interact with one another too strongly. If you take a coarse grain picture, you see only a relatively blurry image at a certain length scale, but at a larger length scale, you can actually see things, so you are averaging over things at a short length scale. The coarse graining cannot be accomplished through the categories established in advance; it has to follow from the nature of the world system that we are supposed to be studying, the world system itself. The necessary coarse graining has to be discovered—it can't be imposed at the beginning just because we have a lot of traditional categories. Think about the relation between weather and climate. No clear results will follow from trying to examine the weather at each little place and each short interval of time and neglecting the strong interaction with other phenomena.

Scenarios come in bundles, which split into smaller bundles at the special points where chance has a huge effect, or where major transitions occur. Does thinking about such near singularities help? Does it help us to identify occasions of great leverage with respect to the future? Probably yes. However, decisions about the future of the world are not made by any elite group of thinkers. They involve a great variety of actors all over the globe, and in the end, it is the nature of those actors that matters most, not the thinking about the future on the part of an intellectual elite. What will happen to human nature in the longer-range future? That may be the most important question of all. Will it be changed artificially through the application of science and technology? Will it be gradually



modified by culture as it has been in the past? If so, how? For example, will devotion to one's own country or ethnic group or religion be supplemented by a kind of planetary consciousness that defines "us" to include the whole human race, and maybe even to some extent the other organisms with which we share the biosphere? Or will human cussedness continue and lead us into disasters made worse by our continuing advances in technology? Perhaps speculation about the longer-range future can be of some help in the seizing of opportunities and in avoiding some of the worst catastrophes. Anyway, we can hope so.

SESSION ONE

Long-Term Policy Analysis James Dewar

First off, by long-term, what we really mean is characterized by deep uncertainty. In a more technical sense, we mean characterized by structural uncertainty. If your uncertainty is parametric, you know basically how the system works but you don't know what numbers to plug in. If you don't even know how the system works necessarily, then you think of that as structural or deep uncertainty. Long-term in the sense of long-term planning has gotten a bad name because long-term doesn't quite cut it. We called it long-term, but what we really mean is deep uncertainty.

If we think about long-term policy analysis in the context of short-term policy analysis, here are the five canonical steps to short-term policy analysis for developing some kind of optimal or sound policy. You set the context, you generate alternative policies, you project the consequences of those alternatives, you value those projections, and you pick the best one. As you get farther out in time, it is still not hard to set the context or generate alternatives, but it gets harder to project the consequences. Not only that, it gets harder to value those projections. The whole enterprise of trying to develop a single optimal policy in the longerrange is much more questionable.

There is one other thing I want to talk about in terms of what to do and when to do it. This is kind of a notional three-dimensional box...[Think in terms of] complexity low to high, uncertainty well-characterized to deep, and policy options few or many. "Few" would be on the order of build it or don't build it; "many" would be kind of a wide-open problem. Where the problem tends to be reasonably well-characterized, then you have got a lot of techniques for optimal decisions no matter how many policy options there are or what the complexity is. As long as the situation is reasonably well-characterized, you are in good shape with a lot of the short-term policy analysis techniques. If the situation is not too complex, then you can go well out in uncertainty and policy options and use techniques like scenario planning to help you think about the few sorts of plausible futures that you want to worry about.



This long-term policy analysis method for doing robust decision-making, you can now read in the April 2005 *Scientific American.* It is another tool that we are trying to bring to the table to help with long-term policy analysis.

Response Adil Najam

Whenever I hear "long-term" my first reaction is to think of Keynes and his wonderful line, "In the long-term we are all dead," though given current action, in the long-term more people might be dead than might otherwise have been.

A couple of things that I thought were important relate to what long-term policy planning is not: that it should not be confused with long-term future projection, which is a part of long-term policy analysis. It is not necessary to get your predictions entirely right to do good policy analysis, and that relationship ought to be made clear, because if not made clear, there are a whole set of people who are going to be turned off by this exercise in looking into the glass ball for the future.

What do we know about long-term policy analysis? We know that shortterm decisions can and do have long-term policy implications, sometimes intended, very often unintended, unanticipated. We do know that people have tried to historically and continue to try to influence long-term decisions with their short-term policy. We do know that these efforts have generally not been as successful as those people might have hoped.

Lastly, how do we do long-term policy analysis? You had two ways that you highlighted that I thought were good. First, what are the long-term implications of short-term actions? Second, what are the short-term actions needed to reach long-term goals? There may also be a third category: i.e., putting in place long-term changes to respond to what I think the future might look like. This is very fashionable in many countries. For example, Japan does wonderful reports like *Japan 2100.* This is not just about what do I do now to create the 2100 I want, but what do I see 2100 being and how do I prepare myself to get ready for things that are likely to happen independent of my actions. It seems to me that there is a lot of long-term policy analysis that also happens there.

SESSION TWO Forecasting for Business Anita McGahan

Three questions that were of central interest were suggested to me: Who is doing this in business? That is, who is thinking about forecasting over a 35-200 year horizon? How are they doing it? Is this a useful and legitimate practice?

Who is doing this? Everyone and no one. Basically, on a 35-200 year horizon, forecasting for business is extremely challenging. In fact, there is a set of theories regarding a financial structure of publicly traded stocks that would suggest that a 35-year horizon is not terribly relevant to current performance, yet clearly the same theory suggests that the financial market value of these firms depends on forecasting cash flow.

The idea here is that in theory—and, in large part, in practice—the stock price of a firm ought to incorporate current information about the long-term health of firms, and that what really matters for stock prices will change with those forecasts. To make matters worse, not only is the time horizon so long (35-200 years), but the best possible information about what will happen in business in 35 years ought to be already incorporated in the stock pricing. If you are interested in stock prices, what really matters are changes in these conditions. We are looking at second-order effects as opposed to first-order effects and trying to incorporate information about the long-term future into stock valuation, which is what executive management is entrusted to do on behalf of investors. Surprises or news about the long-term future, 35-200 years out, are often viewed as pretty rare or unreliable. As a result, most firms do not invest on such a longterm horizon.

What are the likely dominant models for successful commercialization of technologies that are relevant to these long-term trends? It is very difficult to envision a forecasting model that could accurately describe which firms would benefit from research that yields technology of commercial value 35-200 years out. It is very difficult to predict which ones from today's field will survive to be leaders in the 35-200 year future.



The final question that I was asked to address: is forecasting over a 35-200 year horizon useful and legitimate? People like me, business academics, would say yes and no. Forecasting is essential to value and essential to survival. It motivates innovation. But forecasting accurately is very difficult for business. There are some industries in which technological, demographic, social and other trends are critical, and where this practice of long-term forecasting is more relevant and perhaps I might even use the words "more legitimate," to borrow language here.

On the other hand, most business people would say no. Innovation depends on flexibility. Keep in mind that most companies don't live that long. I saw statistics that Americans move, on average, every six years to take new jobs. Executive horizons are not on a 35+-year term, yet it takes a long time to change a corporate culture. Flexible innovation is very difficult to predict, but forecasting and coming up with surprises is essential to creating value, and sometimes that does require a long horizon.

Response Zachary Karabell

If you're thinking about how you can get business forecasting into businesses, I don't see any reasonable horizon whereby long-term thinking, per se, becomes part of a business strategy because there are too many factors mitigating against that. If we could get businesses to think in terms of five years, that would be an accomplishment. The problem is that when you have people who are dedicated to thinking about the future in an organization, they often have very fun jobs and they often are very quirky people, but the organization usually hates them or doesn't respect them because they don't add any value. Why are these people being paid to sit around and think about the future when I've got to meet my quarterly numbers?

What you can do, if you have got a group of people who are thinking in this long-range, who bring in academic knowledge at its best—academic in its good form, not academic in its obscurantism form—the things that they point to help individuals within a corporate culture think more clearly about the implications for the Longer-Range Future

of the business as it is currently construed, such that they make adjustments that lead the business to continue to be more successful. Then you can show that there is some value in longer-range thinking for whoever is around 35 years later. Does that long-range thinking help that organization make better decisions in the present? I think that is clearly possible as an incentive structure. However, it is very rare that organizations do this. I think these are really important things to think about in a business context, but the incentive structures don't favor such thinking. Also, it is very different to think long-term if you are an individual entrepreneur thinking about your own business than a corporate institution thinking about its ongoing business flow.



SESSION THREE Forecasting for Investment Ian Bremmer

First the broad ideas: Why do I think the world, from an investment perspective, is becoming a riskier place? I think it's important to separate things that are variables and things that are drivers. A variable is something that may or may not happen with a sort of reasonable estimate over the period of time that we are looking at...Oil prices at \$25, \$50, or \$100 is a variable. There are other issues like demographic change which are investment drivers.

Three factors of globalization that are impacting markets and investors more over time: first, the diffusion of dangerous technologies; second, the communications revolution; third, the porosity of borders. I consider those drivers. I don't consider those trends. They are drivers that have some significant impact because they tend to make rogue states, rogue organizations, and even rogue individuals more of a potential threat to global markets. There is also of course the reaction to that driver, as we have seen. This is more of a variable, but still one that will probably have significant implications in slowing down economic growth in places. That is the tighter security on borders, and accordingly the difficulty in the trade-off between security and economy that we see in the United States as well as in Europe and as a consequence even in the Middle East.

Response William Grimes

Ian has presented a couple of points that seem to be important in the model. One: this has to do with the stability of the political system itself. Iran is probably a little bit more potentially stable than some of the other major oil producing states, perhaps. You have a rule of law; you have a political system that has been in place for 25 years; you have an unhappy generation, but hey, who doesn't have an unhappy younger generation? You also have a fairly consistent rulership; you have a reasonably sized middle-class and a reasonably well-educated population. The types of major political change that we would imagine are going to be a little for the Longer-Range Future

bit less severe than, say, in Liberia. One aspect has to do with the political stability of the state.

The other aspect has to do with the external environment. The North Korea issue, when you talk about the impact on South Korea, the problem is not that South Korea is such an important member of the international diplomatic community. The problem is that South Korea is a very highly integrated member of the world economy. Globalization, to the extent that it is happening in a given area, is going to potentially increase the impact on the system of a major shock.



SESSION FOUR Mapping the Global Future: NIC Global Trends 2020 Matthew Burrows

In terms of our understanding, what were the major findings? First and foremost, a more fluid and complicated set of international alignments than at anytime since at the end of the Second World War... and the higher level of uncertainty. It is related, again, to two different phenomena. One is globalization and how that is generating unprecedented prosperity but also an enormous amount of unevenness of the prosperity. It is also putting pressures on democratic as well as authoritarian regimes because of the spread of new communications technologies. That is one element that makes us very uncertain. Then you combine it with the second, which is the emergence of China and India as major economic powers. Either of these two phenomena are profound, but the combination of the two makes things almost unprecedented. That is why we began the study by emphasizing that we are in a period of unprecedented uncertainty.

One of the other findings is that we don't foresee great power conflict in this next period. That doesn't mean that we don't see conflict. In part because of globalization, we foresee that there would be greater efforts towards conflict resolution once power conflict breaks out. That is probably one of the big good new stories we have in the study. Finally, we find that there is the possibility of a major ideological conflict or a transmutation of the terrorist threat as we conceive it now into much more of an ideological struggle.

I would like to talk a little bit about the methodology. With this study we wanted to get out from behind our desks in Langley, but also outside of the US. For the first time we went out having conferences outside the US with regional experts, looking at how they saw their own regions, asking them particularly to talk about their own regional scenarios. One of the things we found when we did this is that there are now a number of cells in other governments around the world who are beginning to try to grapple with strategic analysis. Within our own government, I would say that over the past four or five years there has been progress in trying to internalize some of the lessons and some of the techniques that we have used and others have used on long-range forecasting. I will just

mention one that we are heavily involved in today. That is an effort to try to prevent outbreaks of conflict and understand the indicators that would warn us of impending problems in countries. I think the EU also has a beginning of a strategic effort along those same lines.

Response Ralph Buultjens

The purpose of this, as Matthew said, is to stimulate thinking. In that sense, I thought that it was not very imaginative. The scenarios which are the centerpiece of this—that is, "Davos World," "Pax Americana," "A New Islamic Revival," "Cycle of Fear"—are what exist already. We don't have to look to 2020 to see these things operating. We are living in a world deeply influenced by those things right now. I would have preferred some kind of more imaginative thing; for example, what would happen if there were an economic union in Northeast Asia: China, Japan, Taiwan, and South Korea. Some might laugh at that. It is highly unlikely historically, but then in 1945 we laughed at a Franco-German-based common market. I would like to see some greater leaps in that sense.

My second comment is this: a lot of attention was given, as Matthew said, to China and India. That is correct, and almost everybody does that now. The future belongs to Asia. Here I see the danger of the Tom Friedman fallacy, or what I call the 5 percent seduction. That is to say, analysts look at 5 percent of China and India, roaring successes, dazzled by it, and extrapolate from that. They tend to forget that China and India are still enormously poor countries with a few stunning highlights, and the big question to me is whether this 5 percent will be able to lift the other 95 percent upward and sustain that for a long period of time. It is not so much whether the 5 percent will disturb the world, it is whether the 5 percent can have an impact on the 95 percent, for these are now increasingly more and more two nations within one nation-state.

Finally, I would like some discussion of what are the real big booby-traps in the next 15 years. That is, what is the single greatest danger in terms of economics? I would suggest that it is the sudden collapse of the US dollar. What is the single greatest threat in terms of security? I would suggest that is a really cata-



strophic terrorist attack. There has been only one catastrophic attack in history: the World Trade Center. In terms of politics, I would join with Ian Bremmer in saying that a single greatest threat is the collapse overnight of Saudi Arabia. Examining the next 15 years in terms of a single threat in different areas—that is, what is the most dangerous thing—would also, I think, add something to this. Let me close with a thought. As the contradictions in our world deepen, how long can they coexist without major explosions? Will those come in the next 15 years? Or perhaps they can exist in the next 15 years, one balancing the other. After all, it was Charles Dickens who reminded us that at one and the same time, we can have the best of times and the worst of times.

SESSION FIVE

Planning a Foreign Policy Philip Bobbitt

As Jim Lindsey among others has proposed, I think we should explore a global alliance of democratic states. Such a group would unite nations with entrenched democratic traditions such as Canada, South Korea, the US, the European Union, Japan, New Zealand, Australia, Costa Rica, Botswana, Israel, India, many states. Membership would be open to countries where democracy is so rooted that reversion to autocratic rule is unthinkable. Its model would be, ironically, NATO, because NATO was a regional organization responding to regional threats. Global threats require some kind of global organization. The US could, I think, take a leap with the European Union and others in creating such an alliance. We should reach out to new states with incentives to join that alliance, among them, debt cancellation, when they satisfy the criteria of the Peace of Paris. I think we can extend our influence beyond our temporary hegemony if we take this moment to join with others in crafting a system of rules that is compatible with our understanding of state responsibility for humanitarian well-being, including the prevention of the proliferation of weapons of mass destruction and underwriting the creation of the institutions that serve civil societies. I would say, third, creating an alliance of democracy ought to be an objective in future US foreign policy.

For Americans, the formulation of foreign policy in the 20th century oscillated between the universalistic rhetoric of Woodrow Wilson, which would have superimposed an American system of law on the states, and a particularistic worldview of Theodore Roosevelt as more strategic and hegemonic. I don't think anybody doubts why Kennan, like George W. Bush, came down to this debate. I quote: "Universalistic, and the particularized approaches to the solution of international problems: the universalistic approach works to a solution of international problems by providing a pattern of rules which would apply to all countries. It favors the legalistic solutions," and in Kennan's hands, there was no harsher adjective than "legalistic," such as those embodied in the UN. This approach has a strong appeal to US foreign policy, for it appears to obviate the



necessity of dealing with the national peculiarities and diverging political philosophies of foreign peoples, which our people tend to find confusing, irritating...We cannot preserve international law by preserving the international law of the 20th century, but we can rewrite that law to be sensitive to the security concerns of the 21st. Fundamentally, a new international law will be expressed in two propositions that the community of states must press for: a set of double standards in international relations, to put that provocatively, applying different rules to its members with respect to the use of force, than those rules applied to other states. The 21st-century state, the British diplomat Robert Cooper has written, "needs to get used to the idea of double standards. Among themselves, some states cannot bring the basis of law and open, transparent security, and have been dealing with other states outside this consensus. We must revert to the rougher methods of an earlier period: forces, preemptive attack, deception, whatever is necessary for those who live in the 19th-century world of every state for itself. In the jungle, they use the law of the jungle."

Response David Fromkin

Rather than give a response, I just want to make a few comments about the subject that we are to address today, which is forecasting the future and planning for it. Two things: forecasting and planning. The first, forecasting, de Tocqueville famously predicted in the 19th century that the 20th century would be dominated by a conflict of the two great powers, Russia and the United States, the United States standing for the cause of freedom and Russia standing for the cause of tyranny. That is a prediction often cited to show that you really can predict the future. It seems to me, the fact that we have just one such forecast, shows not how possible it is, but how very difficult it is to forecast the future.

That brings me back to George Kennan's proposal of containment, in particular in the "X" article in *Foreign Affairs.* In seeing that on the one hand, his prediction was flawed, because he said 10 or 15 years, and in these things, time is of the essence, it was 45 years before the Soviet Union fell. He was right, but not right on. Then, if we look at the forecasting that this was going to come about as for the Longer-Range Future

the result of a crisis of passage of the regime there too, that wasn't why it went. Flawed both as a forecast, flawed as a plan for what to do based on the forecast, and yet it is one of the rare examples of something that was, in a sense, right.

What I have been meditating about is how very difficult it is to do the thing that we talked about in the title of this session, which is to figure out what is going to happen in the future and then also figure out what the right thing is to do about it.



SESSION SIX Forecasting Global Transitions as a Tool for Planning Barry Hughes

I am going to focus on the International Futures computer simulation, which is a tool for thinking about the future. It is only one tool; it is only a very partial tool. As a developer of a quantitative simulation and data analysis tool like this, I am always one of the first to point out the limitations of these and the way they need to be used in the context of a much richer set of ways of thinking about the future and planning for the future; but at the same time, it is my job as a quantitatively oriented futurist to try to develop the strongest such tool that I can. I keep working on it, I keep trying to enhance it. The version you are going to see is called International Futures.

What we are trying to do is look at a variety of interacting systems: demographic, economic, energy, agriculture, obviously technological drivers, environmental constraints, sociopolitical, international political systems. There are sub-modules in each one of these areas within the International Futures system that are—for the most part—close to state-of-the-art, particularly in the case of the demographic and economic forecasting modules, less so in the case of energy, more so in terms of modeling some sociopolitical developments. They are about as strong a simulation as you are going to find out there. We try to represent the structural elements of these systems: demographic, economic and so on. We try to represent some basic stocks and flow characteristics. We try to represent the dominant relationships. What drives productivity change? What drives democratization? What drives changes in the educational levels of populations, the dominant relationships? Then the key dynamics: what are the relationships across economic and demographic and sociopolitical systems? Very crude, but again an attempt to do something along the lines of looking at the larger whole...

I want to wrap up with a discussion of how we intervene in this system to analyze these transitions in terms of scenarios: how we consider uncertainty explicitly and how we explore for the potential that intervention and leverage has within the systems. We have developed something of a scenario tree for the International Futures, which allows us to intervene across a wide variety of for the Longer-Range Future

levers within the system. The first two categories are technological change and key environmental uncertainties. How fast will productivity increase with respect to energy? How fast will energy demand, energy usage productivity, improve? How fast will the multifactor productivity of a variety of countries around the world and Europe vs. China vs. the United States improve? Environmental uncertainties: What is the ultimate resource base? At what point will global fisheries peak out and begin to decline?

Those are the kinds of things you can intervene with alternative assumptions around technological change and environmental uncertainties. We create what we call framing scenarios with those kinds of interventions. Those are the big-picture framing uncertainties. Inside those, we create intervention patterns...When we intervene, we pick a particular lever; we pick a particular pattern for the intervention. We can put these together into larger scenarios like IPCC scenarios, the NIC 2020 scenarios, the Global Scenario Group scenarios. We package these, they are available to the user to explore. They can see our interventions, they can see the assumptions behind the scenario, they can change those scenarios.

Where are we going to go next with this kind of tool? I think that the places we want to go next are in the same kinds of categories I talked about earlier. We need always to continue developing the structures of the model, the data and theory foundations of them. We need to improve our formulations for various dynamic linkages...We need to continue to increase the accessibility and the user-friendliness of this system. We need to develop strategy search analysis tools, and this is where the CARS System of RAND could be particularly useful. If you could take this kind of model and you can run it hundreds of thousands of times with different interventions and you can explore the entire space of possible futures and find robust opportunity preserving strategies to address some of these problems that are suggested by these major transitions, you have some suggestions as to the kinds of interventions we might want to recommend to decision makers. We hope to be able to do this among other places in looking at the human condition over the next 25-50 years.



Response Cutler Cleveland

When I look at this model, I say ok, what we are essentially seeing over this period of time is an increase by a factor of 5 or 11 in the output of material stuff on the planet. I think back to what we have done in the last 150 years, when we essentially did the same thing. We transformed one-third of the non-ice land surface of the planet into human existence. We increased the concentration of carbon dioxide from 270 to 380 parts per million. We now have a period of extinction of biodiversity which we haven't seen since the dinosaurs left us. So I look at this forecast of doing this again in a material sense and ask, what are the underlying energy and environmental implications of this? I think that the model addresses some of them but I think that it could be improved to address some of the things that aren't addressed.

One of the things, a general issue that really was raised in our earlier session over lunch, is that you always see in these types of models very smooth curves, things going smoothly, but there are discontinuities. One of the things on the energy and environmental and economic front was, what if you smack the system with something really abrupt, like a really severe oil price shock, worse than the one that happened in 1980 and '81, which plunged the entire world into recession for two years?

Overall, I think this effort is one of the more sophisticated, certainly one of the most ambitious modeling efforts out there. As a teaching tool, I would urge those of you who teach in these areas to have your students look at these models because they are great pedagogical tools.

SESSION SEVEN

Forecasting for Defense Andrew Bacevich

What I'm going to talk about is my understanding of how the military attempts to envision its future. The bottom line is, not terribly successfully, and I'll try to suggest a couple of reasons why I think that is the case.

If there is a distinctive approach that the military takes (because they do all kinds of things to forecast the future), it seems to me that that distinctive approach is summed up in the word war-gaming. There is an ancient tradition of war games. War games come in various forms. They offer different levels of fidelity; the range of costs varies dramatically. They also serve different purposes. These games postulate scenarios, they postulate adversaries with either certain existing or emerging capabilities; put them in some sort of a competitive scenario and they provide a way to guide discussion about systems design and procurement, about budgetary priorities, and also help to provide some focus about questions of doctrine and organization. It is important to know that these future-looking war games can focus on the different levels of war. There can be tactical war games that are really concerned with what the battle is going to look like; there can be operational war games that really are concerned with the structure and the conduct of campaigns; and of course, there are strategic war games, war games that infect and intrude into the political level of war.

If there is so much effort invested in war-gaming, why does it seem to be so difficult for military institutions—and the one that I'm most interested in is the US military—why is it so difficult to figure out what is going to happen out there in the future? There are a number of factors involved, I think. One is that these are great big bureaucracies. There is simply the weight of institutional inertia. What we did yesterday seems to be pretty good, so that's what we're going to do tomorrow...

Moreover, here is my last point. I'm struck by the extent to which within the military, and perhaps this is true in other professions as well, the here and now really does tend to take precedence over the future. The pressing concerns of the moment, particularly concerns that have operational implications or have impli-



cations for who is going to live and who is going to die and who is going to win and who is going to lose. Therefore, even as they speculate about the future, the members of the Officer Corps tend actually to be concerned much more about winning the war tomorrow, that they think is going to be like the war they fought yesterday, rather than genuinely investing themselves in the war that is going to happen ten years from now or twenty years from now. Let me give you the exception that proves the rule: Vietnam. Vietnam, this institutional disaster as far as the US military is concerned, induces a reaction that says in this one particular case, "No, the war of tomorrow will not be like the war of yesterday, because we ain't never going to fight that kind of war again. We refuse to fight that kind of war again." Therefore the military reform effort that comes out of Vietnam is explicitly designed to avoid the prospect of future insurgencies and postulated a war that was very much like the wars they used to know and like. That is to say, conventional wars fought against advanced adversaries in places like Europe.

I think that is going on today. If anybody follows defense literature, you know there is an enormous amount of discussion about military revolutions and transformation and radical change and all that sort of thing. I know that the people who sponsor these ideas are serious about them. I for one am not at all convinced that the institutions are serious about embracing or even looking at these notions in any great depth.

Again, I concur with these recommendations, but these are recommendations that come not from a concerted effort to take into account all sorts of factors so we can understand what war is going to look like 20 years from now; these are lessons that people picked up after action reports, or frankly, read in the *New York Times*, and said, "What's going on now and what should we do about it?" My argument is that this is a recurring phenomenon. This is a demonstration of how the needs of the moment trump any concerns about 20 years from now and therefore make forecasting military futures very difficult.

Response H. Joachim Maitre

Andy, in another conversation just a few days ago, mentioned the crash of the C-130 transport aircraft in Albania, and asked what the Air Force was doing in Albania. Good point, isn't it? Albania is not a member of NATO. I did some research, called up the Air Force in Washington, and of course was told that everything is classified. The aircraft had taken off at 10:30 pm from Tirana Airport, had gone south, and had flown into a mountain 20 miles north of the great border. That in itself is worth the question, what are we doing there? But of course, I also found out that it was not a C-130, it was an MC-130H, which is called Combat Talon, an aircraft which costs to procure \$200 million per piece. It's a very expensive aircraft. What are we doing with this aircraft in Albania? Well, it's classified because we are involved in a global war on terror. We use that particular phrase, a cliché by now, in order to be virtually everywhere in the world. Estimates are that we are represented today in 140 countries. But what are we doing this for? The answer again is in order to fight terror anywhere in the world, no matter where it threatens us.

Threat scenarios. We live today in an age of intimidation of allies. You might recall that not too long ago, our government commented on the unwillingness of a neighbor to the north, namely Canada, to chip in on the procurement of ballistic missile defense. The story goes, if North Korea launches an intercontinental ballistic missile with a nuclear warhead towards Seattle, and it strays off course and is now threatening Vancouver and British Columbia, we Americans will have to bail them out. In other words, the Canadians are freeloaders, which they admit to being, by the way. They simply say that we are 30 million people, we don't consider North Korea a military threat. Who does? If North Korea were indeed to launch such a weapon, I think as realists we would say, "Do it. We'll take care of you after that." So we do not discuss in our defense budget, which right now is in the neighborhood of \$400 billion a year, that we need threats in order to spend the way we do. It used to be a leftist argument, but after the end of the Cold War, we should readjust our threat scenarios to what we may call reality.



SESSION EIGHT

The EU as a Case Study of Planning: A Prospective Retrospective Vivien Schmidt

The question is, how can we think about the EU as a planning project? To do this, we have to project ourselves back into the early years. We need to consider the original plan as an economic and political project and then proceed to the present. This, I am going to do very quickly, talk about the ideas of the planners, the treaties that institutionalized and constitutionalized this planning project, the institutional structures that were created, the dynamics of the processes that followed from these institutions' words and ideas, the events that promoted plans or demoted them, the new supplemental plans drafted in response to events, and the limits to growth, or if you will, what happens when you realize, when you actually have your plan.

In addition to needing good ideas and good texts, you need good institutions set up by the plan. I have been quite amazed how surprisingly adaptable the institutions were. The coal and steel community, the institutions set up there translate quite beautifully first into the European Economic Community. You had, in the first, the ECSC, a high authority. It becomes the Commission. The Special Council of Ministers becomes the Council of Ministers. Common Assembly becomes the Parliament. I'm not going to go on, but you just see that really is a very good translation of the early institutional structures into what we have. What you see over time is that it simply is a continued balancing. As the Parliament gains power, the Commission gains power, but the intergovernmental body, the Council of Ministers, the member states, also maintain and gain power as well. What you see is a ratcheting up of the powers of the EU, but also a balancing of all of this. Quite extraordinary in terms of seeing how all that works. To be perfectly honest, I think the constitutional treaty, whatever the problems, has been a brilliant solution because it rebalances everything, but also ratchets up. More democracy, allegedly, with the Parliament having more power, but okay...

There is another piece of this. The bicycle theory of the EU is that you need momentum or you fail, which gets us to today, the realization of planning. What for the Longer-Range Future

happens when the plan seems to have all been realized, or largely so? Where do you go next? We have got some big questions for the EU now: what is its *finalité*?

The next thing is, what is the EU? A super-state? I argue a regional state. It can't be a nation-state. It doesn't have an identity, a common will, but it has got a composite identity. Democracy: that is really the problem, because this is a democracy that is not like other democracies. It is at best an indirect democracy. The EU only has "for and with the people," i.e. democracy through effective government and interest consultation. If people accepted that, fine, except they keep thinking that you ought to be able to elect your representatives directly, because after all, how are you going to throw the scoundrels out if you don't elect them? The problem for the EU is really the democracy thing right now. That is its major crisis.

There are all sorts of problems now as the EU has matured to a certain level. It is a single currency zone, except for those who are a part of it, but even so, it has a regional economy which is nevertheless highly differentiated, so not like the US, not sort of a nation-state with a national economy. This is why I call it a regional state with a regional economy. It works, but it doesn't work the way a nation-state does. The real challenge for the EU right now and in planning for the future is, how do you reconcile national populations? How do you create something? How do you make it clear that at the national level, you continue to have what we think of as democracy–electoral democracy, participatory democracy–and that at the EU level, it is pluralism? How do you get people to understand that? That is the whole political piece. As long as, economically, the EU continues, whatever the problems, it is the politics that people are going to focus on.



Response Renée Haferkamp

Well, Vivien has said many things, and in a very optimistic way. I have been for my whole life in this adventure, and I must say that whatever our plans have been, they have not very often been realized...I think this is a very democratic structure, but the fact is that the member states do not want to lose any part of sovereignty.

We still have to look for more. That is why I ask the question to Andy Bacevich about the defense, because that is the real problem. But I think, and there I agree with Vivien, that it is the only domain where we do make a lot of progress. On foreign policy, Iraq has divided us so profoundly that I don't see that really over. If we have voted—you always think Europe was on one side against the Americans, but no. If we had voted in the Council of Ministers among the 15 countries, 8 were with the Americans, 7 against. That is why we didn't vote, because we wanted to look like our public opinion. That is true. The public opinion, even in the countries with the United States—Spain, Italy, and Great Britain—were very much opposed to the war. Anyway, foreign policy, that is the real problem. We want to exist in the world and don't know how to get our act together, and how to be a sort of a counterweight to the only superpower, the United States.

CLOSING ADDRESS

Sir Colin McColl

It is bizarre that in an age in which we pride ourselves on our knowledge and sophistication and mastery of cutting-edge technology, we keep being hit on the head by unexpected swinging sandbags. The trouble, I suspect, is that the pressure of work makes policy makers, and therefore their support staff as well, concentrate on the problems of today. They simply do not have the time to deal with the problems of tomorrow, many of which are simply regurgitations of the problems of yesterday. Once a problem has been patched up, it is put back on the shelf and the focus turns elsewhere. When it suddenly explodes, we are all surprised. Can we do things better? I believe we can. There is no panacea; there will always be some nasty surprises, but we can surely reduce our vulnerability if we keep a constant watch on specific dangers over the horizon, dangers which are currently unfashionable, on possible crises which contradict current assumptions, on the likelihood of the unlikely. The key, to my mind, is to ask the right questions and to use our imaginations, in doing so. This involves getting outside the rails of policy and conventional wisdom because these points of view impose, almost by their nature, a restrictive optimism.

This whole analysis probably needs to be reviewed once a month. In this review, one asks whether the weight of any of the drivers or restrainers has been increased or diminished by new developments. One asks also whether there are any new forces which have a bearing on the situation, and if so, such forces have to be added to the chart with whatever value one judges suitable. A bonus to the use of a graph of increasing likelihood or decreasing likelihood is that policy makers are more likely to take preemptive action if they know that they may, in the future, be asked why they did nothing when a graph available at the time showed an inexorable rise in the likelihood of the event which they are being asked to preempt. I have used this system spasmodically over the last few years.

This system could, in theory, be used to look at the likelihood of nice rather than nasty surprises, but I haven't tried it in this more cheerful mode. It should also, in theory, be applicable to questions about finance and markets, but I must confess that I have not ventured beyond this use that involves some sort of politi-



cal decision-making. I would, however, be delighted if someone more skilled than I were to deploy a version of this technique to keep us up-to-date on, for instance, questions such as, is there a hedge bubble? And if there is, to keep us posted on when it is going to bust.

Pardee Conference Series

Pardee conference proceedings are published in a volume series and are available through the Pardee Center.

The Frederick S. Pardee Center for the Study of the Longer-Range Future, Boston University, 67 Bay State Road, Boston, MA 02215

The views expressed herein are those of the symposium participants and do not necessarily express those of the Pardee Center or Boston University.

For more information about Pardee Center programs and publications, visit us on the Web at www.bu.edu/pardee.



Boston University The Frederick S. Pardee Center for the Study of the Longer-Range Future

Boston University 67 Bay State Road Boston, MA 02215 tel: 617-358-4000 fax: 617-358-4001 e-mail: pardee@bu.edu www.bu.edu/pardee

Copyright O 2008 by the Trustees of Boston University. All rights reserved.