

The End of the Cold War

PREDICTING AN EMERGENT PROPERTY

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Gaddis claimed that international relations theory failed to predict the Gulf War, the Soviet Union's collapse, and the cold war's end. Subsequently, he acknowledged that the expected utility model captures the logic behind complex adaptive systems such as the cold war international system. That model correctly predicted two of the events to which Gaddis pointed. Here, that model is used to simulate alternative scenarios to determine whether the cold war's end could have been predicted based only on information available in 1948. The simulations show a 68% to 78% probability that the United States would win the cold war peacefully given the conditions in 1948 and plausible shifts in the attentiveness of each state to security concerns over time. The analysis demonstrates a rigorous method for testing counterfactual histories and shows that the pro-American end to the cold war was an emergent property of the initial post-World War II conditions.

The end of the cold war is a turning point not only for the world of affairs but also for the smaller world of international relations research. Decades of scholarship by area specialists, historians, philosophers, statisticians, and pundits failed to provide a clear, explicit prediction that the cold war was about to end. In light of this apparent failure, Gaddis (1992) argued that international relations theory was a failure. Gaddis challenged the core of international relations theorizing, stimulating a lively and sometimes heated exchange about whether international relations theory was a failure. That debate challenged the very notion that the absence of explicit predictions about the end of the cold war was germane to the questions he raised. In light of a portion of that debate, Gaddis revised his assessment, not on the relevance of prediction but rather on the prospect of successful prediction through theory building. In a recent study, Ray and Russett (1996) reported that, in private correspondence, Gaddis has agreed that the so-called expected utility model "strikes me as an important advance over earlier approaches to predictive modeling because it takes into account the emergent properties of complex adaptive systems . . . [and] there has been a sort of

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Bueno de Mesquita–John Lewis Gaddis convergence” (taken from Gaddis’s e-mail to James Ray, February 8, 1995, and quoted in Ray and Russett 1996, 1578).

The purpose of this study is to elaborate on that convergence by using the so-called expected utility model to see whether the structure of relations among states after World War II contained an emergent property—the seeds for the unfolding development and end of the cold war. By this, I mean that the exercise undertaken here is concerned to see, in a probabilistic sense, what the likely evolution of international relations looked like given the characteristics of the pre-cold war but post-World War II period. I will show that one can demonstrate, only from information about the world in 1948, that it was highly likely that the United States would emerge as the victor over the Soviet Union in a peaceful resolution of the cold war.

National leaders are, in the approach I take, assumed to adapt strategically to changing circumstances by choosing the course of action they believe at any given time is best for them (and, by extension, their nation). Their behavior, then, is adaptive and complex. It is adaptive in that behavior responds to shifting circumstances. It is complex in that each state (or leader) has a strategic interest in structuring the way in which the environment changes to encourage others to adapt in a manner favorable to the state in question. In particular, but not exclusively, the United States and the Soviet Union, as the main protagonists in the cold war, each had an interest in shaping the adaptive behavior of all other states. Each, of course, hoped to promote a situation in which the international system evolved in its favor.

I will show that by simulating a wide array of plausible counterfactual histories, we can see that the initial starting point of the cold war had embedded in it an emergent property. Specifically, the probability of an American cold war victory was much higher than the probability of a Soviet victory given the initial cold war conditions and rationally complex, adaptive behavior. The results of my analysis support the contention that critical aspects of the cold war’s end were predictable and that many of its specific characteristics were highly likely but not inevitable. It suggests a reorientation of discussion about path dependence while highlighting the importance of some policy choices over others.¹ It provides a means to view counterfactual histories in a rigorous way and suggests policies by which the cold war could have ended sooner or could even have been avoided altogether. It also implies that we have a tool that could be informative in simulating the evolution of, for instance, relations between the United States and China or the United States and the Islamic world over the next 50 years, but these are issues best left for future study.

This analysis is being done retrospectively, and therefore some comment is required on the claim that what is presented here serves as evidence that the end of the cold war was predictable. Some might be skeptical, fearing that I have engaged in Monday morning quarterbacking. Hindsight, being 20/20, would not be an interesting basis for trying to salvage model construction and international relations theorizing. Others might be skeptical, fearing that the simulations presented here mask the supreme difficulty of really predicting a specific event in advance. To allay these concerns, I

1. By path dependence, I mean the extent to which a particular outcome could only have arisen through one unique combination of historical circumstances.

first demonstrate that the expected utility model has predicted many specific and difficult to anticipate events well in advance, including several specific events Gaddis pointed to as exemplars of the failure of international relations theory. Then, after explaining the intuition behind the model's logic, I go on to show that no hindsight is used in constructing the simulations of the end of the cold war discussed here.

Gaddis's (1992) article pointed to the failure to predict three events as evidence for the inadequacy of current international relations theory. He wrote,

The abrupt end of the Cold War, an unanticipated hot war in the Persian Gulf, and the sudden disintegration of the Soviet Union astonished almost everyone The fact that they arose so unexpectedly suggests that deficiencies persist in the means by which contemporary princes and the soothsayers they employ seek to discern the future course of world affairs. (P. 5)

Although I wholeheartedly agree that deficiencies persist, I wish to establish the *prima facie* basis for my claim that reliable prediction of specific international events is possible by quoting from an interview in which I said,

Applying my theory on why nations go to war . . . I will go out on a limb and cite places where I think war is likely: . . . war between Iraq and Saudi Arabia or between Iraq and other states on the Arabian Peninsula once the Iran-Iraq war is settled. ("A Conversation" 1982, 30)

The Iran-Iraq War ended in mid-1988, and of course the hot war in the Persian Gulf that Gaddis referred to as unanticipated began in the summer of 1990 with the Iraqi invasion of Kuwait. So, at least one of the three events to which Gaddis referred was publicly predicted, including the timing of the event, well in advance using the model applied here.

The prediction of the Gulf War was not a solitary, isolated, correct prediction. Indeed, representatives from the U.S. government who use an in-house version of the expected utility model (called *Factions*) bragged to the Russians in 1995 about its effectiveness, as reported in *Izvestiya*. That article notes,

Experts engaging in studies within the framework of this system state that on the basis of long experience of using it, it can be said with a great degree of confidence that the forecasts are highly accurate. In particular, according to them, the "Factions" method was used in May 1991 to predict the August putsch. ("Russia Is Doomed" 1995)

The *putsch* or coup was the crisis that precipitated a second of Gaddis's exemplars of unpredicted critical events that was anticipated with the expected utility model: the collapse of the Soviet Union.

Since the introduction of this model, there have been dozens of applications to real-time predictions in published articles. These have been readily accessible to researchers, and some have been independently evaluated. For instance, an article in the *Far Eastern Economic Review* (McGurn 1996) assessed the 12 predictions made in Bueno de Mesquita, Newman, and Rabushka (1985) and concluded,

Based on their findings, they predicted 12 developments, of which only one proved inaccurate (a technicality about how land would be valued). The others proved pretty much on the mark: increased welfare spending, the growing importance of demonstrated "loyalty" to China in the award of key contracts, and an "ongoing reinterpretation" of the Joint Declaration's provisions long after they were signed. (P. 68)

The methodology has been explained in detail in numerous publications so that its workings are readily accessible. Although the model has been modified—and, one hopes, improved—over time, its core assumptions, data requirements, and basic computations have not changed. Rather, it has been made dynamic, whereas its original incarnation provided only one-shot, static predictions. The dynamic version of the model also has received wide coverage in the academic literature, including two books (Bueno de Mesquita and Stokman 1994; Bueno de Mesquita, Newman, and Rabushka 1996) and numerous journal articles. Those seeking the least technical explanation of this model should consult chapter 5 of *Red Flag over Hong Kong* (Bueno de Mesquita, Newman, and Rabushka 1996), whereas those inclined to study a more technical presentation might examine *European Community Decision Making* (Bueno de Mesquita and Stokman 1994). For an independent assessment of the model's general accuracy across many applications, see Feder (1995).

AN INTUITIVE EXPLANATION OF THE MODEL

In this section, I provide an intuitive sense of how the model works. Those readers who are interested in the technicalities of the model are strongly urged to consult the referenced literature. Given space limitations, it is not feasible to present a highly detailed description of the model here. There is, however, no desire to leave readers with the sense that the model is a black box. The following discussion should help form a view of how it works, and the more technical publications that are referenced provide all the detail necessary for those who want a thorough understanding of the model.

The model predicts how the policy choices of people, groups, and nations change over time and how those choices influence policy decisions. It is, then, an applied model, reflecting a balance between pure formalism and assumptions that ensure that the model can be estimated for a wide variety of real-world problems. This methodology represents an attempt to marry the invaluable expertise and nuanced knowledge of area specialists with the theoretical insights and tools developed by social choice theorists and game theorists. It is a linkage between substantive specialization and expertise in how people make decisions in an attempt to model complex adaptive systems and identify their likely evolution through time.

Policy making involves interests competing to influence choices. Political leaders, military officials, bureaucrats, businessmen, foreign governments, ethnic groups, other special interests, and ordinary people are among those who want to shape policy. These groups differ in the intensity and influence that they bring to decisions. They also differ in what they want. In the application in this study, the interested stakeholders

are identified as nation-states, but the methodology itself need not be restricted to this coarse a view of any polity. It is straightforward to break open each state and expand the analysis to include any number of domestic interests, as has been done in many other applications.

Influence depends on control over resources. Political influence is used to alter the policy wishes of other groups. The object of each stakeholder is to build a strong coalition in favor of the choice desired by that individual and his or her backers. Building such a coalition can involve some problems. First, people might disagree about what would be the best decision. If these disagreements exist, then it can be hard to find supporters. Second, some competitors are better at shaping decisions than are others. This is true because they control the right resources or muster more supporters. Third, everyone compares the costs and benefits of getting what he or she wants and of being seen as a deal maker. Politics is the art of the practical, but not everyone involved in politics is inclined to be practical. Some people believe so deeply in the policy they favor that they are not willing to compromise. They care only about getting what they want. I call getting what one wants *policy satisfaction*. Others care so much about being deal makers that they will support any decision that they think they can win. These people value being part of the winning side as being more important to them than what they actually win. I call the desire to be part of the winning side regardless of outcome *political satisfaction*. Most people fall in between these extremes. They are willing to make concessions to help forge a deal, but they are not willing to give up everything they believe in. Political bargaining depends on how willing people are to give up the policy they most prefer to make a deal. The essence of all politics is embodied in the willingness of competitors to trade between policy satisfaction and political satisfaction (Lamborn 1991).

Politics involves cooperation and competition. Groups, whether formal or informal, propose policy compromises or try to coerce opponents into doing what they want. When stakeholders decide on a course of action, they evaluate an elaborate array of choices. Among these is the option to do nothing. If they think their efforts at changing existing circumstances will fail, then they live with the current policy or status quo. The process is like a very complicated card game. The decision to live with the current policy is much like folding in the game of poker when one has been dealt a particularly poor hand.

In politics, it is as if each player is dealt a hand. The practical value of the hand when played depends on the influence, attentiveness, and policy objective of each player. Stronger players (or those with strong backing from others) draw better cards than do weaker players. Some players pay closer attention to their cards than do others. This influences their perceptions of the situation. Based on their influence, attentiveness, and policy objectives, each decision maker forms perceptions about each rival's hand. With that information, each player decides on a strategy of policy proposals to make to some or all of the other players. The content of each proposal is a specific suggestion about a policy that a stakeholder is willing to support or for which a stakeholder is seeking support. The proposed policy need not be the same as what the proposer currently supports.

After all the players submit their secret proposals to one another, each reviews the hand—the proposals—that holds. Some proposals are better for the recipient than are others. Indeed, some proposals are perceived as not credible; that is, the recipient does not believe that the proposer can mobilize a sufficiently powerful coalition to make the recipient accept the proposed positional change if the recipient does not want to. Other proposals seem sensible but fall by the wayside because a superior offer was made by a different stakeholder who has a strong enough coalition to fend off the coalitions that are backing rival proposals. Each player would like to choose the best offer made to him or her, and each proposer enforces his or her bids through the use of power to the extent that he or she can. Each actor selects the best offer he or she receives—or the least bad one.

At the end of a round of proposal making, players learn new information. By monitoring responses to their proposals, players learn how much leverage they (together with their coalition of supporters) can exert on other decision makers. If a proposal is accepted, then a player learns that he or she made the best offer to the recipient of the accepted bid. If a proposal is rejected, then the decision maker learns that an alternative proposal mustered a sufficiently powerful coalition to fend off the decision maker's efforts.

When the players finish sorting out their choices, each shifts to the position contained in the proposal he or she accepted (if any). Of course, when a decision maker agrees to a compromise with someone else, that player hopes that the other player also will live up to his or her end of the bargain. Alas, politics involves promises that are not binding. Proposals are enforced if a decision maker has the strength or support to make sure that others do what they promised to do. Decision makers in the model, as in reality, are free to renege on a proposed deal if they have a better alternative or so long as someone else forces an agreement on them.

To predict what proposals are made, which deals are accepted, and how decisions are really made, the expected utility model focuses on trade-offs between policy satisfaction and political satisfaction. Everyone cares about both, but to different degrees. Remember, policy satisfaction involves getting a decision that is consistent with the stakeholder's policy preference. Political satisfaction involves making deals and being part of the winning team. Policy satisfaction often comes at the expense of political satisfaction, and political satisfaction generally involves giving up some policy satisfaction. I model the trade-off between these two types of satisfaction by estimating the shape of each player's indifference curve with respect to its current political and policy satisfaction and the location, relative to that indifference curve, of proposed deals. Of course, deals that move players to higher indifference curves are preferred to those that leave them below or on their current indifference curve, although at different points on it.

Leaders pursue the biggest benefits at the lowest cost. Certainly, they do not make choices that are expected to leave them worse off than the status quo. In evaluating proposals, decision makers consider how much policy satisfaction and political satisfaction each provides. Ideally, any decision maker would like to have infinite policy satisfaction and infinite political satisfaction, but realistically, it is likely that some trade-off has to be made between the two. The problem is to figure out how much

of one the decision maker will sacrifice in exchange for more of the other. I briefly summarize that decision process by sketching the basic intuition behind the analytic approach. Of course, the actual analysis is quite a bit more complicated. The mathematical details of the model can be found in the works cited previously.

In the model, information about resources, salience, and policy preferences is used to calculate the perceived relationship between each stakeholder and every other stakeholder. The model estimates what proposal, if any, is best to make to the other participants in the decision process. Sometimes, it is best to live with the status quo and propose nothing. Other times, a compromise can be struck that makes each party to the deal better off. One stakeholder might gain policy satisfaction at the expense of political satisfaction, and another might gain political satisfaction at the expense of policy satisfaction. So long as both perceive a net gain, the deal can be made. At still other times, a stakeholder concludes that it has the ability, either on its own or with the help of others, to coerce an opponent into accepting its point of view. Sometimes efforts at coercion result in the desired outcome, but other times coercion leads to a fight, such as the Gulf War, in which both sides think they are strong enough to secure benefits from the other side at acceptable costs (Haselkorn 1998).

In the model, as in real life, I do not assume that people always make the best proposals they can. Rather, I assume that people can make mistakes but that they do so while trying to be as careful as possible with the limited information they have at the time when choices are made. In that sense, I try to take into account human frailties, differences in perception, and shortsightedness, each of which can lead to errors in judgment and to undesired or unanticipated outcomes. I focus on the strategic choices stakeholders make before they know how things will turn out. I assume that each stakeholder makes what it believes is the best choice given what it knows at the time a proposal or action must be taken. Hindsight cannot be allowed to color analytic judgments if predictions and explanations about future decisions are to be accurate.

APPLICATION OF THE MODEL TO PREDICTING THE COLD WAR'S EVOLUTION

To apply the expected utility model retrospectively to the cold war without taking advantage of ex post facto knowledge, I have undertaken numerous simulations, all based on the same initial data. The initial data, drawn from the Correlates of War project, include a list of the 36 most powerful sovereign countries as of 1948. For each country, there is an estimate of its 1948 national capabilities and its position on a security dimension scaled from -100 to 100.

The security dimension is measured in terms of the similarity in military alliance portfolios for each pair of countries as of 1948, using Correlates of War alliance data, as explained in Bueno de Mesquita (1975, 1981); that is, each state can have any possible mix of defense pacts, nonaggression pacts (or neutrality pacts), ententes, and no alliance relationship with each of the other states in the international system. A security portfolio or military alliance portfolio is defined as the array of military alliance agreements a state has with all other states. The degree of shared security

interests of any pair of states is evaluated as the correlation (using Kendall's tau *b*) of their security portfolios with one another. For instance, by the height of the cold war, the United States and the other members of NATO shared very similar security portfolios with one another. They tended to form mutual defense pacts with the same sets of states, and they also tended to avoid alliances altogether with the same set of states. Thus, if I were taking advantage of actual information about the similarity in alliance commitments in, say, 1965, then the measurement procedure I use would show a high degree of similarity of interests or correlation on the security dimension between, for instance, the United States and the United Kingdom or the Netherlands and between the Soviet Union and Bulgaria but would show a low level of similarity or correlation between Bulgaria and the United Kingdom or between the United States and the Soviet Union, and so forth.

The measure, as used here, reflects the focus in 1948 on security concerns while capturing the world before the clear emergence of a bipolar structure between the friends of the United States and the friends of the Soviet Union. This measure has been widely used in numerous studies in the literature on security and, although certainly imperfect, has been demonstrated to vary in theoretically predicted ways across a large array of security-related concerns. The initial security policy score for each simulation is calculated by examining the difference in the similarity of alliance portfolios for each country vis-à-vis the United States and the Soviet Union. A score of 100 indicates a security policy most like that of the United States. A score of -100 indicates a security policy most like that of the Soviet Union. A score of 0 indicates complete neutrality between the two sides, with negative values being increasingly pro-Soviet and positive values being increasingly pro-American. This normalized scale reflects policy preferences, not political or military power per se.

As of 1948, sides had not yet been clearly drawn in the cold war struggle so that, as the data reflect, the central tendency was toward neutrality in choosing between the United States and the Soviet Union. It is changes in these scores over time that I am interested in predicting, especially changes in the score that reflect the policy position at which power was balanced between the competing worldviews at any given time. Of course, I am equally interested in predicting changes in the policy preference scores for the United States and the Soviet Union. The balance of power policy position is defined here as the security policy position (between -100 and 100) for which it is true that as much aggregate power falls above that security position as falls below it; that is, the balance of power security position is the position of the state that is the median power, whether we sum power from below or from above on the security policy dimension.

Capabilities are measured using the Correlates of War composite capabilities index. This widely used indicator is the average of six components: share of the system's military expenditures, share of the system's military personnel, urban population, total population, steel production, and commercial fuel consumption. Capability scores are normalized so that they sum to 100.² It should be noted that because the starting date is 1948, neither Japan nor East or West Germany were sovereign states and so are not

2. They actually sum to 99.692 due to rounding.

included in the analysis. If anything, this introduces a pro-Soviet bias into the analysis because Japan and West Germany certainly emerged as more powerful states than did East Germany. The capabilities data are further biased against the finding here that the United States was especially likely to win the cold war because the Correlates of War composite capabilities index is known to overweight both the Soviet Union and China. This overweighting results from the fact that iron and steel production had diminished in importance as indicators of power in the post-World War II era and also because both had large but relatively poor populations.

Salience for national security policy is set equal to 100 for each country in 1948. This reflects the situation at that time when the early signs of the cold war were on us. The year 1948 is chosen because it is a key dividing year. The World War II alliance among the United States, Britain, and the Soviet Union was clearly shattered by the conflict over Iran in 1946, disagreements with the Soviet Union over the fate of Eastern Europe and over the governance of divided Germany, and so forth, but neither NATO nor the Warsaw Pact would emerge to define the central parameters of the international order for the next 40 or so years. Of course, by 1948 there were bilateral alliances between the Soviet Union and what became the membership of the Warsaw Pact, but no multilateral agreements were yet in place.

To be sure that the results of my analysis do not depend on the selection of 1948, I have replicated the process using 1946 and 1947 as base years and also have analyzed expanded and reduced sets of states as the stakeholders. The results are the same. The model being used predicts changes in policy positions—that is, supportiveness of the United States or the Soviet Union—in response to the pulls and tugs of competing coalitions of interest. In the simulations run for this study, the model was allowed to iterate over 25 periods (which we can think of as each being 2 years in duration, although the model is not instructive on calendar time), with the salience variable permitted to change randomly for each country during each round.³ The randomization of salience is intended to capture the range of possible fluctuations in the relative importance of security issues compared to other issues including, for instance, domestic political concerns, economic policy, humanitarian concerns, and the like from period to period and from country to country. It allows the possibility to test the model while controlling, in a sense, for the potential impact of exogenous random shocks that alter the relative importance of security issues from state to state and from time to time.

The introduction of random salience is an innovation from earlier applications of this model. One problem in doing long-term analysis, whether it is postdiction or real-time prediction, is that the likelihood of an exogenous random shock to the initial data increases over time. A central problem in long-term assessments is anticipating the seemingly unpredictable. For instance, the assassination of President John Kennedy in 1963 certainly could not have been foreseen in 1948. Nor could one readily foresee, and so model, the effects of the launch of Sputnik in 1957, the sudden death of Prime Minister Lal Bahadur Shastri in India in 1965, Watergate, the Profumo

3. Given that the model does not attach calendar time to its rounds or iterations, this is one place where hindsight can be said to have been used. It is a convenience to speak of each round as if it were of 2 years duration, but the model is not informative on this. Given the nature of the data, we can be confident that a round reflects no less than 1 year but might reflect 2 or more years.

scandal in England, and so forth. Each of these events could potentially influence the attentiveness of a government toward security or domestic affairs. Such shocks arise more or less randomly in time and space. By randomizing salience across stakeholders (space) and iterations (time), the model allows us to estimate a wide array of such unanticipated events. In so doing, we can see whether there are strong pushes in the general configuration of the data that generally favored the continuation of the cold war or an American or a Soviet victory. Indeed, this innovation appears to be an important step in devising long-term counterfactual scenarios as a means to test alternative states of history, both past and future.

The methodology applied here does not attempt to replicate the actual history of the past 50 years. That would be subject to *ex post facto* biases based on knowing how things turned out. Instead, the model simulates alternative histories to see to what extent the actual end of the cold war was strictly path dependent and to what extent the peaceful collapse of the Soviet Union can be seen to have emerged from the starting conditions in 1948 given an array of alternative historical paths from 1948 forward. Each random distribution of salience scores, of course, represents a critical element in a different path that history could have taken. Indeed, we can see whether any of the 100 simulations I have run comes close to replicating the actual experience between 1948 and the present, and we can see whether the preponderance of paths led to an American victory, a Soviet victory, or the continuation of the cold war. Note that the objective is not to predict the precise details of the actual path of circumstances and choices that led to the end of the cold war but rather to determine whether that precise path was part of a preponderant set of paths favoring American victory. Specifically, through the randomization of salience, we can see whether the American victory depended on a unique array of circumstances, a small bundle of possible circumstances, or a very broad range of feasible conditions. As the evidence makes clear, the end of the cold war was one of a numerous and preponderant set of prospective paths that history could have traversed and that led to American victory. The paths leading to other outcomes are far less numerous and, in that sense, less probable.

It is important to recognize that none of these simulations takes advantage of any information that could not, in principle, have been known in 1948. The data certainly were readily knowable. The model, of course, did not exist in 1948, but it makes no use of information about international politics after that year. For instance, the simulations do not update the national capabilities each year because those changes are partially products of the cold war rather than its antecedents. The model predicts shifts in national positions on the pro-U.S./pro-Soviet scale from iteration to iteration based only on its internal logic, the 1948 data, and random fluctuations in the values of the salience variable. The initial data assumptions are displayed in Table 1.

PREDICTING THE COLD WAR'S END

Before turning to the analysis, let me say a word about how the results are to be interpreted. Each of the 100 simulations that were run develops an alternative plausible scenario or counterfactual history of the post-1948 years. The method I use does not

TABLE 1
Initial Data Conditions, 1948: Pro-American or Pro-Soviet Policy Preferences

<i>Country</i>	<i>Capabilities</i>	<i>Position</i>
Argentina	0.972	89.6
Australia	0.889	1.3
Belgium	1.182	2.8
Brazil	0.993	89.6
Bulgaria	0.345	-100.0
Canada	1.610	56.2
China	11.941	1.3
Czechoslovakia	1.401	-91.0
Denmark	0.240	1.3
Egypt	0.408	3.2
England	7.863	3.6
France	3.597	2.8
Greece	0.418	1.3
Hungary	0.450	-91.0
India	2.468	1.3
Iran	0.491	2.4
Iraq	0.157	3.7
Israel	0.125	1.3
Italy	2.426	1.3
Mexico	0.774	89.6
Norway	0.230	1.3
The Netherlands	0.836	2.8
Pakistan	1.485	1.3
The Philippines	0.408	1.3
Poland	3.273	-91.0
Romania	0.606	-91.0
Saudi Arabia	0.125	2.8
South Africa	0.680	1.3
Soviet Union	18.256	-100.0
Spain	1.683	1.3
Sweden	0.648	1.3
Syria	0.104	2.8
Thailand	0.414	1.3
Turkey	1.347	2.4
United States	29.956	100.0
Yugoslavia	0.891	-100.0

NOTE: Salience initially is set at 100 to reflect security concerns and then varies randomly from country to country and from model round to model round.

provide an *ex ante* factio way to choose one scenario over another or say that the chosen scenario is the predicted path of the cold war. Of course, we can, *ex post facto*, find scenarios that look very much like actual history, and I will point to such scenarios (and others that do not look like actual history) as I go through the analysis. These are interesting cases that suggest a variety of alternative ways in which the cold war could have ended or been prolonged. They are instructive about foreign policy making for the future, but they are not central to the predictions of interest.

The central predictions are about the likelihood that the cold war would continue or would end with an American or a Soviet victory. Predictions about these likelihoods can be made with confidence by examining the relative probability of each of these three core possible outcomes. If the distribution of simulation outcomes that support, for instance, an American victory and a Soviet victory are about equal, then the model will have failed to predict the central feature of the end of the cold war, that is, a peaceful victory by the United States. Such an approximately equal distribution would falsify my claim that this model could predict the end of the cold war, as would a preponderance of predictions favoring a Soviet victory. If, however, the vast majority of simulations support the claim for a peaceful American victory in the cold war, then the model will have succeeded in showing that the outcome of the cold war was a predictable emergent property of the initial conditions reflected in the data in Table 1, with the actual path taken reflecting "noise" or a small perturbation around the preponderant central tendency of the predictions.

I begin the analysis, then, with some summary statistics that speak to the model's predictions regarding the likely evolution of the cold war. Then, I examine selected simulations to illustrate the characteristic paths the model suggests for the evolution of the cold war. These suggest the main alternative histories that the model indicates were likely. The 100 simulations allow us to estimate the probability of alternative outcomes. The simulations also allow us to see the extent to which the end of the cold war was attained optimally or might have been achieved earlier with the same or fewer costs. The simulations also allow us to speak of counterfactual strategies for ending the cold war and to compare them to the course actually followed.

The 1948 data reflect a system of nations highly centralized around neutrality, uncertain of whether to invest their futures with the Soviet Union or the United States. The initial locus of power was centered at 2.4 on the policy scale. This locus reflects the position of greatest national security in the sense that at position 2.4, power was evenly balanced between those more pro-American and those more pro-Soviet. From a structural realist perspective, this can be described as the policy that maximized security; it reflects a decision to balance one side against the other. From a spatial modeling perspective, 2.4 represents the location of the median power unit on the security issue dimension in 1948 and is analogous to Black's (1958) median voter. The 1948 structure reflects a stable system in which neither the United States nor the Soviet Union had enough support to defeat the neutral center so long as everyone remained focused exclusively on security. Thus, a neorealist view, in which security remains the focus, could not predict the end of the cold war. The cold war's end depended on at least some states being diverted from security concerns by other issues, whether domestic or foreign.

The randomization of the salience variable in the 100 simulations was used exactly to see what happens to the powerful neutral center as the security concerns of states waned and waxed in response to fluctuating hypothetical domestic or other pressures. By allowing salience to vary on the security dimension, my analysis departs from neorealist or structural realist precepts. In that view of the world, which is tested as a separate simulation (the 101st), security always is the paramount concern of states, so

that domestic, economic, humanitarian, or other concerns could never become more salient than security.

We can see how the waning and waxing of security concerns might have influenced the unfolding cold war by looking at changes in the locus of the balance of power at different times across the simulations. By the end of the fifth iteration of the 100 random simulations of the model, for instance, the policy stance that represented the average point of maximal security against defeat by either extreme was 19.6. Remembering that positive values reflect a pro-American stance, this indicates a decidedly more pro-American world by about 1958 than was true on average in 1948. The average, however, can be misleading. The 100 simulations include examples at this stage for which the balance of power position is as pro-Soviet as -91.0 and as pro-American as 99.7; that is, a broad range of system evolutions away from neutrality was feasible, including quick American victory over the Soviet Union and quick Soviet victory over the United States.

By the 15th iteration of the model, roughly equivalent to the year 1978, the position that balanced power on average across all of the simulations was located at 12.5, still considerably more pro-American than at the outset but not quite so much as in the simulated world of 1958. This fits nicely with the emergence in the 1970s of *détente*, including the recognition of the Soviet Union as a more-or-less equal superpower. By the hypothetical average world of 1978, the variation in possible outcomes had decreased, both in the sense that the most pro-Soviet outcome was now -84.9 instead of -91.0 and the most pro-American outcome was 86.5 instead of 99.7 and in the sense that the standard deviation around the average policy outcome had dropped from 44 to 33 and continued to drop thereafter.

Table 2 summarizes the overall pattern of evolution of the emerging cold war. The columns define four generic outcomes: a strong pro-Soviet outcome, a weak pro-Soviet outcome, a weak pro-American victory, and a strong pro-American victory. The weak outcomes are defined to reflect balances of power within 10 points on the policy scale of the original situation (i.e., a weak pro-Soviet outcome ranges from -7.6 to 2.4, and a weak pro-American outcome ranges from 2.4 to 12.4), with strong outcomes more than 10 points above or below the initial condition.

Table 2 makes clear several important generalizations about the likelihood of American victory in the cold war. It is evident that, although the system started out as neutral (100% of first round balance of power positions are at 2.4 on the policy scale), it strongly tips in the pro-American position in the vast majority of cases. More than two thirds of outcomes in the simulations are favorable to the United States compared to the initial condition. The Soviet Union was engaged in an uphill struggle from the outset. Furthermore, the simulations indicate that the United States had a very good prospect of emerging victorious fairly early on—much earlier than it ultimately did. This suggests that the policies followed during the cold war by the United States might have slowed its end or that the policies followed by the Soviet Union might have prolonged the Soviet quest while ultimately proving futile. Interestingly, Gaddis (1997) recently came to a similar conclusion. He noted that the United States, by focusing on presumed (and knowingly exaggerated) Soviet military power over, for

TABLE 2
Distribution of Policy Outcomes: The Emergent End of the Cold War

<i>Round/Approximate Year States</i>	<i>Pro- Soviet Union</i>	<i>Weakly Pro-Soviet Union</i>	<i>Weakly Pro-United States</i>	<i>Pro- United</i>
Round 5/1958	14	15	29	42
Round 15/1978	24	5	20	51

instance, economic might, might have unintentionally prolonged the cold war. The long peace, then, might have been due to poor strategizing rather than any stabilizing effects of bipolarity. In this regard, it is interesting to note that already by the fifth iteration of the model, the United States is predicted to gain a strong victory over the Soviet Union in 42% of the cases. How these more rapid victories might have been achieved and how the Soviet Union might have won are topics discussed in the next section.

Table 2 depicts a coarse view of the distribution of likely outcomes of the cold war as estimated through simulation. Now we may consider a somewhat more refined view, particularly with regard to defining what constitutes a U.S. victory. The model simulations lead to five generic sets of predictions: a slow American victory, a quick American victory, a continuation of the cold war, a quick Soviet victory, and a slow Soviet victory. Victory is defined for these purposes as arising when the policy stance of the United States, the Soviet Union, and the majority of the remaining powers in the world converge (to, of course, a pro-American or a pro-Soviet position). The cold war is said to continue if such convergence does not take place, with the two superpowers remaining on opposite sides of the neutral position of zero on the security policy scale. Another view of victory is that the preponderance of global powers endorse the American or Soviet perspective. Here, the notion is that even if the Soviet Union and the United States failed to converge, if enough powers favored one or the other viewpoint, then the remaining superpower could be viewed as marginalized and isolated. Figure 1 depicts such a perspective. It shows the cumulative probability distribution for the policy stance of the balance of power in the global setting across the 100 simulations. Figure 1 displays the likelihood of a pro-American or a pro-Soviet world by the final iteration of each simulation.

Figure 1 shows quite dramatically that the cumulative probability of a pro-American worldview or of American hegemony was extremely high. Only 22% of the simulations lead to predicted pro-Soviet cold war resolutions by this definition, whereas 78% yield a pro-American world outlook by the end of the simulations. This is a key view of the emergent property of American hegemony. It is ironic that the simulations capture this—which certainly has been echoed in the real world—whereas much of the academic community in the 1980s focused on the apparent decline of American hegemony (Gilpin 1981; Keohane 1984; Krasner 1981; but for a view consistent with the finding here, see Russett 1985; Kugler and Organski 1989).

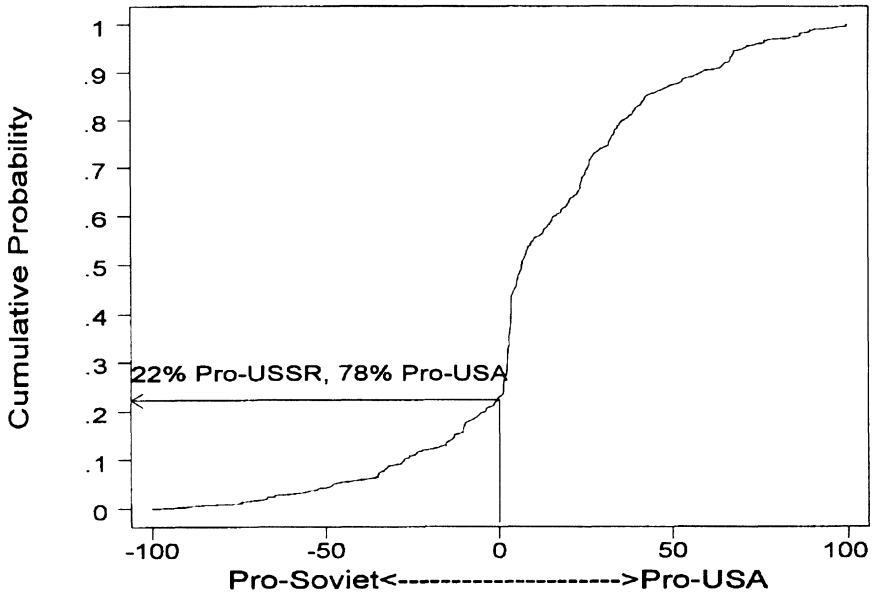


Figure 1: The Evolution of the Balance of Power

Another viewpoint can be attained by looking at examples of each of the five generic evolutions of the cold war. In one such generic outcome—the dominant one—the policy stances of the United States, the Soviet Union, and the majority of the remaining powers in the world rapidly converge (say in fewer than 10 model rounds or about 20 years) to a pro-American outcome. Figure 2 illustrates an example of such a case, which I identify as simulation 8. Figure 3 (simulation 19) illustrates the second generic outcome, which most closely mirrors what actually happened. The United States and the Soviet Union remained far apart for a long time, ultimately converging, along with much of the rest of the world, to a decidedly pro-American posture after about 20 iterations or 40 years. This is the next most common outcome in the simulations. Figures 4 and 5 reflect mirror image outcomes in which the United States relatively quickly (simulation 38) or slowly (simulation 58) adopts a pro-Soviet position along with the majority of the rest of the world. Each of these occurs infrequently. Finally, Figure 6 (simulation 96) shows a decidedly pro-American world in which, nevertheless, the Soviet Union and many of its predicted allies (essentially the Warsaw Pact countries) remain aloof from the pro-American system. Figure 6, then, illustrates an example in which the cold war continues and reminds us that American victory was not at all inevitable (see also Greenstein 1996; Zelikow and

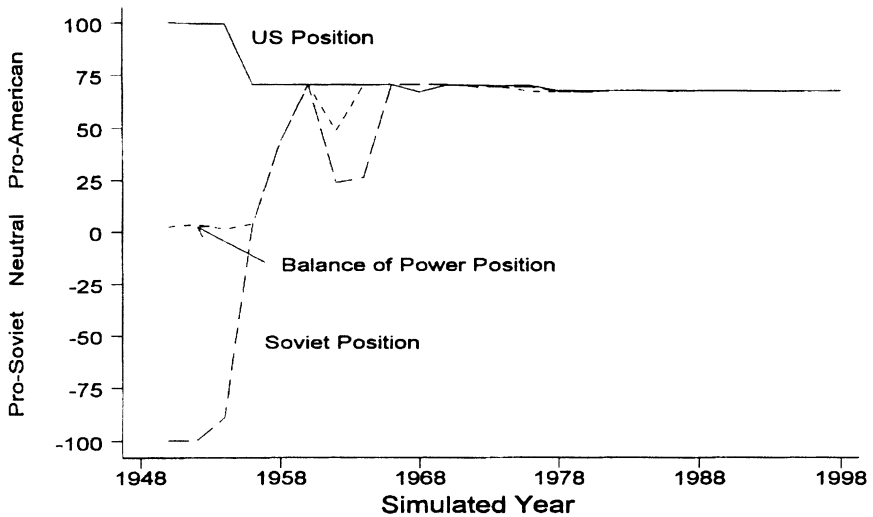


Figure 2: A Quick American Victory: Simulation 8

Rice 1995). The predicted histories undergirding these figures are explained in the next section.

These five generic cases remind us that the balance of power could shift to a pro-American or pro-Soviet position without Soviet-American convergence. This is important because the simulations indicate that there were significant opportunities for the Soviet Union to hang on in not-so-splendid isolation even after the United States won the support of the vast majority of states and the vast majority of global powers. The simulations include 16 instances in which the Soviet position remains below -50 on the scale even though the forecast is for a pro-American balance of power. There are no instances in the simulations in which the United States maintains a position above 50, and yet the predicted outcome is for a pro-Soviet balance of power. Apparently, the Soviet Union was vastly more likely to hold out in ideological or political isolation against all odds than was the United States. Put differently, the United States manifests more policy flexibility than does the Soviet Union or manifests a greater preparedness to accept even an unfavorable resolution to the cold war in those instances in which the Soviet Union remains firm. The United States, however, more often remains firm than does the Soviet Union so that the number of instances in which the United States might have faced the choice of giving in to Soviet preferences or remaining firm is only a small minority of cases. We must not lose sight of the fact that 68% of the simulations end with the Soviet Union accepting an American victory and 78% end with the vast majority of the world's powers sharing in a pro-American victory, whether the Soviet Union participated or not.

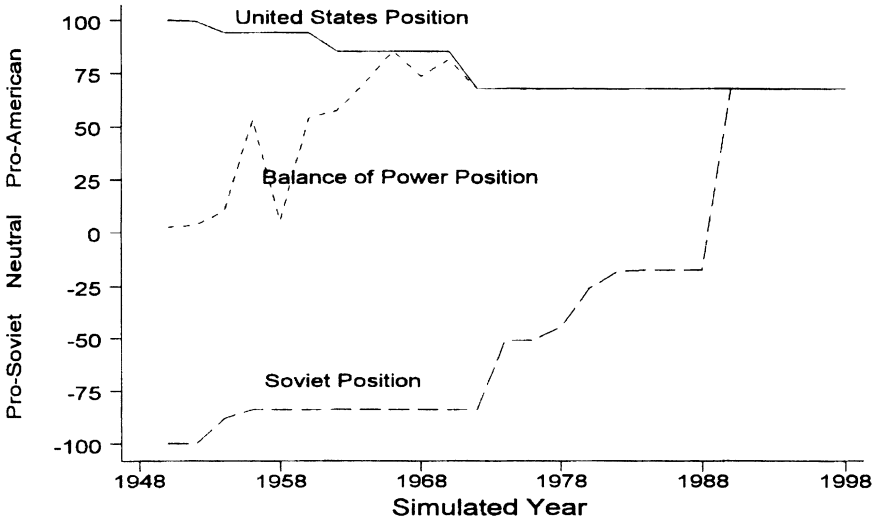


Figure 3: An American Victory: Simulation 19

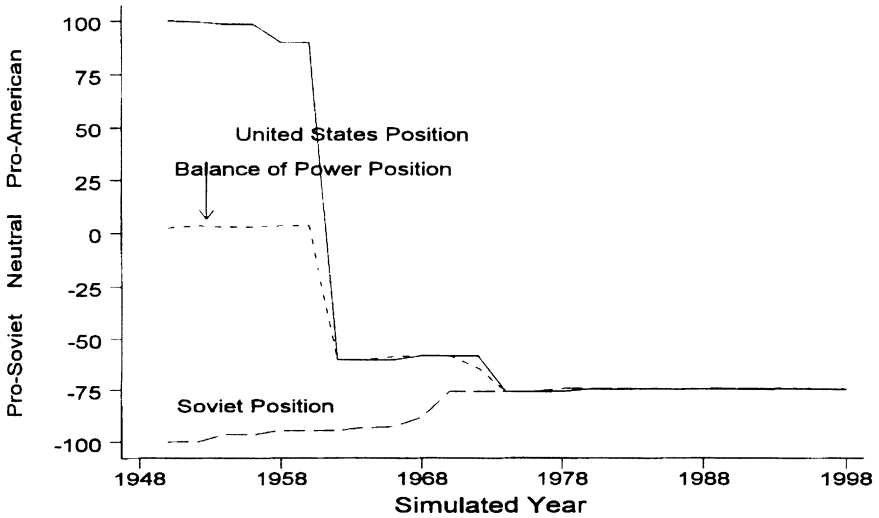


Figure 4: A Quick Soviet Victory: Simulation 38

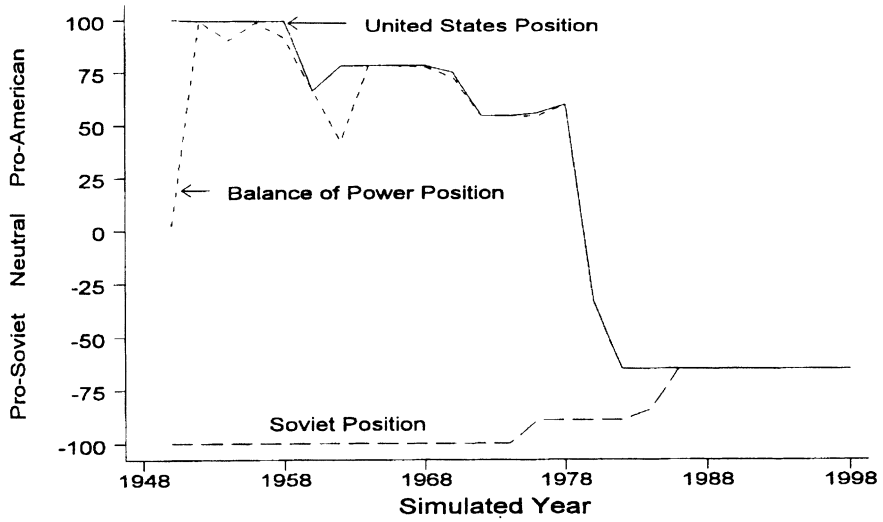


Figure 5: A Soviet Victory: Simulation 58

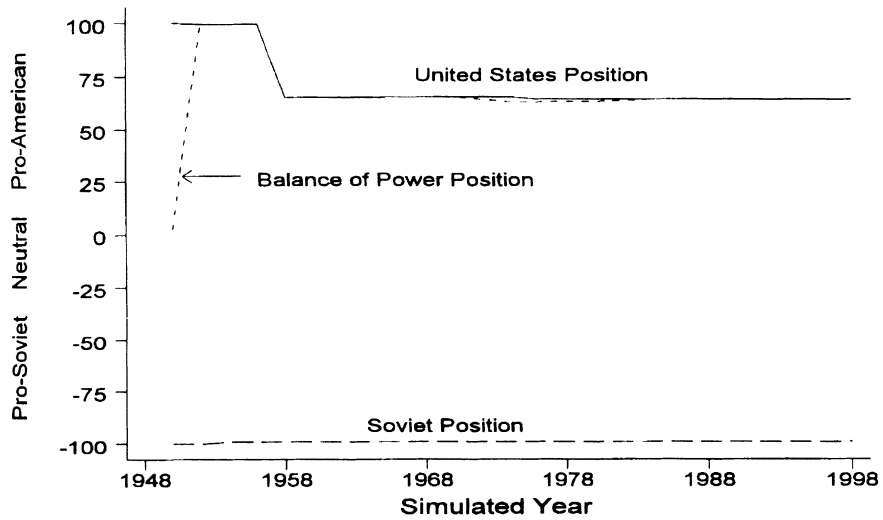


Figure 6: Cold War Continues: Simulation 96

So far, we have seen that the simulations show that the United States had a better than two thirds chance of winning the cold war. They also highlight the observation that the actual path to victory was not the only possible route. Many policies could have helped foster the end of the cold war and the establishment of a pro-American balance of power. I turn now to an examination of the five hypothetical worlds depicted in the figures. In so doing, I provide additional details of the politics and policies that support the counterfactual histories represented by these simulations. These are useful to compare to the actual history of events between 1948 and the fall of the Berlin Wall in 1989 or the collapse of the Soviet Union in 1991.

COUNTERFACTUAL HISTORIES

I begin with the history that produces Figure 3, the circumstance most like the actual events of the cold war. Then I turn to the histories associated with the other figures. A comparison between Figures 2 and 3 helps suggest alternative strategies for ending the cold war.

As noted earlier, NATO was not yet in existence in 1948. In the sequence of events that makes up Figure 3 (simulation 19), we can see that NATO begins to take clear shape by the third iteration (approximating 1954). During that iteration, Italy and France are predicted to shift positions from 3.6, or essentially from neutrality, to 90, or to a strongly pro-American stance. Great Britain also moves in this round from a relatively neutral position to 53, adopting a position clearly favoring the United States (currently at 94 on the scale) over the Soviet Union (which is at -84 at this juncture).

By the next iteration, NATO becomes quite solid, adding Turkey, Greece, Canada, and Spain. Israel, Iran, Egypt, Iraq, Pakistan, Argentina, Mexico, and Brazil also adopt pro-American policies. Meanwhile, the model estimates that the Soviet camp includes Hungary, Romania, Poland, Czechoslovakia, Bulgaria, and Yugoslavia. The system is now clearly bipolar. The pro-U.S. nations control 56% of the power in the system, whereas the pro-Soviet forces are favored by 44%. Many states continue to remain neutral, with India being the most powerful in that category.

As the system continues to evolve, the bipolar character becomes emphasized further. By the fifth iteration (roughly 1958), Greece moves away from its pro-American posture to a more neutral position, whereas Sweden, the Netherlands, Denmark, the Philippines, and Australia adopt an America viewpoint, further strengthening the American bloc. China, which had been pro-American—recall that the 1948 data precede the Communist Chinese victory over the Kuomintang—moves now to a decidedly more neutral stance. The Soviet bloc, looking much like the actual Warsaw Pact, continues to hold firmly at positions between -80 and -100.

During the next several iterations in the simulation, the system becomes increasingly polarized. The two main power blocs tighten while, in the neutral range, China becomes a major player. By the 10th iteration (roughly 1968), however, the neutral bloc begins to drift toward the American position. China moves in this period to position 35 on the scale. By round 12 (approximating 1972), the Soviet Union moves from -84 (it shifted early on to -84 from -100) to -51. The Soviet Union still is

obviously strongly anti-American, but this movement indicates cracks in the solidarity of the Soviet bloc. This Soviet shift occurs at a time when American salience for security is rather high (79), whereas the Soviet Union is more preoccupied with domestic problems (its salience for security is 24). The shift in the Soviet position takes place in an environment of remarkably low tension. The model estimates what percentages of dyadic relationships involve significant tension. Although a value of about 30% is normal, at this point the model indicates that only about 2% of relationships are sufficiently tense to impose real political costs; that is, the softening of the Soviet position (which is accompanied by a smaller softening in the American policy stance) is roughly equivalent to the policy of *détente* pursued during the 1970s.

After the Soviet Union adjusts its position to -51, the system stabilizes for the next eight rounds (or about 16 years). In the 20th iteration, however, corresponding roughly to 1988, there is a sudden and dramatic turn of events. The United States and its NATO and other allies have occupied position 68 for eight or so rounds. The Soviet Union has hovered around -51, whereas its allies have remained even more staunchly anti-American, keeping themselves around -81. Now, however, the Soviet Union suddenly alters its posture, moving to 68; that is, it suddenly adopts a policy outlook in line with that of the United States.⁴

It is striking to note that this simulation produces an end to the cold war, culminating in an American victory, in 1988. It was just then, of course, that Mikhail Gorbachev signaled his preparedness to allow the East European states to pursue their own destinies. As Margaret Thatcher observed in 1988 during her final official visit to Washington, D.C., during the Reagan years, "We're not in a cold war now" (Shultz 1993, 1131).

Just prior to Soviet acceptance of America's policy posture in the simulation, all of the world has subscribed to the American outlook except for the Soviet Union and its East European allies. Shortly after the Soviet Union signals the end of the Brezhnev Doctrine—or, in the model's terms, shortly after the Soviet move to 68—the East European states abandon their stance and join in the new world order. The cold war is over. The Soviet collapse does not occur because of a disparity in salience for security concerns. Both the United States and the Soviet Union have salience scores in the low 30s range at this point in the simulation. What has happened seems to be that the preponderance of power on the American side ultimately makes the Soviet Union susceptible to accepting a deal at 68 rather than risk an outcome even more like the original American policy at 100. The Soviet leadership seems to have run out of the energy to resist the growing concentration of power in favor of the American perspective. In this instance, then, low salience for the security dimension (of about 33) supports the liberal hypothesis that internal problems (especially economic ones) broke the Soviet Union. The power concentration backing the United States supports the conservative claim that Reagan's military buildup and aggressive foreign policy posture made it clear to Gorbachev that the Soviet Union could not compete successfully. Of course, still others contend that Reagan's soft-line policies in his later years,

4. I again remind readers that the 2-year interval associated with each round is *ex post facto*; the model does not specify how long a round lasts in calendar time. The use of 2 years is a convenience that corresponds remarkably well with actual events.

coupled with the Helsinki Accords, were the real key to the Soviet collapse (Deudney and Ikenberry 1991; Risse-Kappen 1991). The simulation reinforces both strands of current arguments for the end of the cold war: the Soviet Union imploded because of internal failings, and it collapsed because of external pressure. The simulation, then, may help to reframe what seems to be a fruitless debate between advocates of alternative points of view. Kegley (1994), for instance, cast the debate in a seemingly either/or context while favoring the liberal, internal implosion explanation. Yet, there is no compelling logical reason to view these as competing explanations. Quite the contrary, with the Soviet Union facing two sources of high costs for continuing the cold war, the pressure to alter its behavior is greater than if it faced only one source. This is a point reinforced by analyses of others, including a prescient perspective expressed by Zbigniew Brzezinski as early as 1963 (Brzezinski 1963; George 1991; Greenstein 1996; Leggold, Bueno de Mesquita, and Morrow 1996).

Simulation 19, of course, is not a replica of the actual events that ended the cold war. Yet, in many details, it provides a history rather close to actual events. NATO's formation is clearly evident early on, as is its growing strength as the system polarizes. The Warsaw Pact emerges as a resilient alliance that is resistant to external pressure but ultimately doomed by the superior capabilities of the United States to attract and hold allies and to isolate the Soviet bloc as well as by the prospects of an internal crisis in the Soviet Union. The simulation produces a history in which Soviet-American relations are distant but stable for a long period, followed by a sudden and dramatic collapse of the Soviet bloc, much as actually occurred. In many other details, simulation 19 reproduces important features of the cold war, including the emergence of India as a leader of neutral states and the large swings in policy position of China. Again, remember that the base year for the data, 1948, is before the Communist victory over the Nationalist forces in China, so that the model was not informed of actual changes in China.

Figure 2 (simulation 8) depicts a much faster transition from the cold war to American success. In this simulation, the Soviet Union accepts the American approach to policy within three iterations or, roughly, by the end of 1954. The key to the rapid American success is that the Soviet Union early on is torn by domestic considerations that suggest internal instability. For instance, in round 2 of this simulation, even before a NATO-like alliance forms, Czechoslovakia, Romania, and Hungary shift from their adamantly pro-Soviet position to neutrality (1.3 on the scale). This happens because the Soviet Union is not committed to holding its allies because it is distracted by domestic politics or some issue other than security. The salience score for security in round 2 for the Soviet Union is only 13, leaving about 87% of its effort turned elsewhere, such as to domestic issues. This contrasts with America's 65 salience for security at this stage in the simulation.

Why might Soviet salience have been so low in the early 1950s, as reflected by simulation 8? Stalin's death could easily have precipitated an internal political crisis. Indeed, in important respects, it did. Following his death, a power struggle ensued that took several years to resolve. During this period, the United States played a fairly quiescent role by not taking any bold steps to exacerbate the internal problems in the

Soviet Union. Presumably, America's caution was out of fear of a war that might result or because the United States was preoccupied with its own problems in Korea.

Had the United States done more at that time to encourage internal turmoil in the Soviet Union and to support separatist movements, of which there were plenty, in Warsaw Pact countries, in this simulation, at least, war would not have resulted. Rather, the simulation suggests that the Soviet system, weakened internally and not yet recovered from World War II, would have collapsed and the cold war would have been nipped in the bud. This is broadly consistent with views expressed by members of the Committee on the Present Danger in the early 1950s. Simulation 8 highlights the benefits that American firmness might have produced early on. It also reminds us that although NATO greatly facilitates the defeat of the Soviet Union by coordinating the capabilities of a large and powerful bloc, NATO was not essential in the early days. Certainly, this does not remain true by the late 1950s. No simulation that ends in American success after 10 rounds fails to produce a NATO-like European alliance. So, we can infer that NATO was critical to the Soviet defeat once the cold war became well entrenched but that its entrenchment might have been averted by a more aggressive American foreign policy in the early 1950s even without resort to NATO. The generalization that NATO was instrumental in bringing about a successful, pro-American end of the cold war once it was well under way holds true in the simulations regardless of whether NATO just coordinated a powerful bloc, NATO deterred the Soviet Union, or the leaders of the Soviet Union never intended to attack the West (Vasquez 1991).

The important role that NATO played and the dangers that might have plagued the United States without NATO are evident from Figure 4 (simulation 38). In this simulation, the European states fail to band together to form a NATO-like alliance. The United States seems to be pursuing an isolationist foreign policy.

By the sixth iteration of the model, roughly equivalent to 1960, the United States alone can no longer forestall a Soviet victory. Although American salience for security is high, so is that of the Soviet Union and its Warsaw Pact allies. Furthermore, the leaders of the Soviet Union perceive themselves in a highly conflict-prone, tense environment. More than 96% of their relationships are seen as conflict prone by iteration 6. This suggests that a war was likely and that the war, without European assistance for the United States, would have ended in victory for the Soviet bloc. Failure to stop the Soviet Union early on and failure to form NATO by the mid-1950s apparently could have been a disastrous recipe. The isolationist posture argued for by some after World War II seems to have promised to produce a Soviet-dominated world order, violently imposed.

Figure 5 (simulation 58) tells a somewhat different story. NATO does form in this case by the end of iteration 3. In this instance, the NATO alliance, rather than tightening over time, unravels during round 6 (roughly equivalent to 1960), whereas the Warsaw Pact countries remain staunch in their support of the Soviet Union's foreign policy. Despite the unraveling of NATO, the United States holds steadily at 78 on the scale, indicating a strongly anti-Soviet viewpoint. The stress level is very high, with nearly 70% of American relationships being tense and strained, whereas 100% of Soviet relationships have the same characteristic.

Despite the tension, no sudden shifts in policy occur. Rather, the system languishes in a heated up state for another four rounds, equivalent to about 8 years. At that point, a small crack occurs in the Warsaw Pact as Poland and Czechoslovakia distance themselves a bit from the Soviet Union, moving to -33 on the scale. With NATO having come apart and with tensions very high, the United States seeks new partnerships. It links up with Czechoslovakia and Poland in an effort to redirect the system. However, American salience then drops markedly, suggesting an internal political crisis around 1972 (round 12). The internal distraction, combined with the loss of NATO, leads the United States down a gradual path of rapprochement with the Soviet Union on its terms. By round 17 (approximating 1982), the United States is in a new world order dominated by Soviet policy. The new balance of power is located at -66 on the scale. Of course, it is important to remember that the simulations indicate that such a scenario, although possible, was very unlikely to arise in reality. Recall that the vast majority of randomly selected scenarios yield a peaceful American victory, not a Soviet one.

Figure 6 (simulation 96) reinforces the view that the end of the cold war was not inevitable. We can already see NATO emerging by round 2 in this simulation. By then, Canada, the Netherlands, France, Britain, Turkey, Norway, and others have shifted to a strongly pro-American position. The Warsaw Pact also is well formed. NATO continues to consolidate, adding Italy in the third iteration and Greece in the fourth. Most Asian and Middle Eastern states also shift to a pro-American posture, whereas the Soviet Union and its Warsaw Pact allies (and a few other states) remain anti-American and pro-Soviet. Although small jockeying back and forth takes place after round 5, the system is essentially stabilized in a long-term, unchanging bipolar structure.

Interestingly, there is another scenario in which the cold war, bipolar structure persists. If the salience variable is not permitted to change but is fixed across all iterations at 100, indicating that security remains the paramount concern, then the model emulates the structural, neorealist view of the world. Under those conditions, the cold war persists in a highly stable environment; that is, the neorealist simulation fails to predict the end of the cold war. It is consistent with Gaddis's claim that neorealism failed to anticipate this critical event. Indeed, neorealism's prediction of bipolar stability is borne out by the simulation, whereas reality showed us quite a different outcome. Fluctuations in the relative importance of nonsecurity issues (such as domestic politics and economic or humanitarian concerns) and security issues were an essential part of the actual end of the cold war.

CONCLUSION

The end of the cold war did not depend on going down one unique path. Consequently, it is not important to establish that any one simulation was more likely to arise than any other. What is important is to see to what the preponderance of possible paths lead. Depending on how we define victory, between 67% and 78% of the simulated histories or paths from 1948 forward produced predictions that the cold war would end on pro-American terms. The specific path might have been unique, but many paths

or mixes of policies yield the same conclusion. This means that the end of the cold war certainly was predictable. Predicting the particular details of the history that culminated in the American victory in the cold war would, of course, require considerably more data. But, the model also has pointed out that *ex ante* there were superior histories to the one that actually played out; that is, there were alternative policies that could have led to a quicker, peaceful end to the cold war on terms favorable to the United States. The few cases of Soviet victory, by contrast, were considerably more likely to arise through violence than through peaceful transition. The counterfactual histories simulated here give us insight into how we might plan the resolution of future policy disputes.

The end of World War II appears to have planted the seeds of a cold war termination that took time to germinate. The ultimate end of the cold war appears to have been an emergent property whose essential antecedents could already be detected in the world structure at least as of 1948.

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