

CHAPTER I. TECHNOLOGY, HISTORY, AND GAME THEORY

***Author's Prefatory Note:** In our last report (February 2003), we argued that the investment regime of the period 1981-2000 has morphed into an altogether new regime. In this and the following chapter below, we argue analogously that a new international world order is now emerging – a new global security regime, in effect. This is an epochal development not only for all of us as citizens, but also for global markets. In this regard, one need only note how the events of 9/11/2001 and the Iraq conflict have roiled both economies and markets around the world.*

Analyzing the transformation of investment regimes is much more straightforward than analyzing the transformation of global security regimes. This is because the existence of “mean reversion,” and hence of long-cycles, makes forecasting investment regimes relatively easy. In analyzing the evolution of global security regimes, however, no such unifying principle exists. We are thus pressed down to a more fundamental level of analysis.

In the past decade, several theories have been floated that attempt to make sense of the changes wrought by the end of the Cold War, and to sketch what is to come. The two most celebrated of these are Professor Samuel Huntington's 1993 “Clash of Civilizations” thesis, and Francis Fukuyama's 1989 “End of History” thesis. I personally do not believe that either of these properly captures what is really transpiring, although both make excellent points. The present essay is an effort to clarify this matter not only for SED clients, but also, frankly, for myself.

The origins of this research effort lie in a speech I delivered in January 1992 at the World Economic Forum in Davos on the implications for global security of the fall of the Iron Curtain. That original effort made explicit use of modern game theory, and this new essay draws upon game theory in a deeper way so as to provide a much expanded and clarified analysis of what is going on. In this regard, it should be remembered that modern game theory was developed during 1945-1970 explicitly to better understand the unique set of global security issues precipitated by the advent of the Cold War. Indeed, the first non-trivial application of John F. Nash's concept of the “Equilibrium Point” of a game was that of the doctrine of Mutual Assured Destruction (MAD) and the associated Cold War arms race – concepts that would become popularized in the movie “Dr. Strangelove”.

In undertaking this effort, my primary debt of gratitude is to the late John C. Harsanyi, with whom I discussed many of the issues involved during a fifteen year period between 1980 and 1995. It was Harsanyi who first demonstrated in 1963 how to measure the “relative power” of each player in a general n -person game (as in the international order), and who extended and completed the research programme inaugurated by John F. Nash in the 1950s. Nash and Harsanyi shared the 1994 Nobel Prize in Economics for their work.

– H. “Woody” Brock

1. Introduction

Between 1815 and 1945, the concepts of offense, defense, and national security remained largely unchanged, and conformed with the classical model codified by the German military strategist von Clausewitz. Thereafter, between 1945 and 1950, a radical change occurred as these traditional concepts were replaced by the doctrine of Mutual Assured Destruction (MAD) that originated in the outbreak of the Cold War between the US and the USSR. Prior to the late 1940s, the *concepts* underlying MAD were unimaginable for the simple reason that the nuclear *technologies* precipitating the new bipolar order were themselves unimaginable. Indeed, an instructor of strategy at the US military academy West Point was so flummoxed teaching MAD concepts that he apparently resigned his position. Given how little the pre- and post-regimes had in common, this is not surprising. Von Clausewitz versus Dr. Strangelove, anyone? An interesting seminar that would be!

We shall argue in this essay that a second such transformation of the international order is now underway. This new transformation is as profound as that which led to the Cold War, and it too is largely being driven by technological developments. But this time, the technologies involved go much deeper: They are transforming not only weaponry, but also *public attitudes* and *expectations* worldwide.

As a result of our analysis, it should be possible to better answer such questions as:

- Is the United States as powerful as many assume? Will we in fact live in a US-dominated unipolar world?

- If not, what powers will constitute the other poles in a multipolar world? Will their mutual interactions resemble the unstable and overlapping dynastic power structure of the 19th century? Or will they resemble the Balance of Terror of the Cold War? Or will something altogether different emerge?

- Has the United Nations surrendered its role as global peacemaker? Did it ever really play such a role? And what of NATO: Has it outlived its usefulness?

- Is Europe – the largest economic bloc in the world – breaking up into sub-blocs (“new” versus “old” Europe) just after it seemed to coalesce with the introduction of the euro in 2000?

- In dealing with rogue nations such as Iraq, should the greater powers be content with merely “containing” such threats? Or should such groups be forcibly disarmed? And will they be?

With answers to such questions in hand, it will be easier to understand the recent war against Iraq led by the “coalition of the willing”. Indeed, without a broader perspective on what is happening, it is hard to make much sense of the Iraqi venture.

Overview: In Section 2 of this chapter, we introduce a neo-Marxist perspective that stresses the role of technological change in driving history. We then identify eight ways in which new technologies are currently altering the “game” of international relations. In Section 3, we review the concept of the pursuit of self-interest as developed in modern game theory, and familiarize the reader with the concepts of Nash Equilibrium Point strategies, of cooperative versus non-cooperative games, and of the correct meaning of “power”.

Then in Chapter II, we draw on the analysis of Chapter I to flesh out the nature of the emergent tripolar regime that we foresee. Specifically, by utilizing a game theoretic approach, we are able to *deduce* the nature of this new international order from a set of very basic assumptions. Moreover, since game theory focuses squarely on who should do what and why, the issue of causality is forced to the fore in our analysis.

It is in this latter regard that the theories of both Huntington and Fukuyama are problematic. The root issues of who will do what and why get lost in fuzzy assertions about “power” (a concept neither author defines or apparently understands) and about post-Cold War “values” (a concept each fails to root in the incentive structure of the emerging global game).

2. The Regime-Altering Role of Technological Change

Any prediction of how the global security regime will change is in effect a prediction of the course of history itself. For this reason, we start off with a neo-Marxist characterization of history that stresses the role of technological change in driving it.

2.A. A Neo-Marxist Philosophy of Historical Development

One way of interpreting history is to imagine that the events that define it are the result of the interaction over time of two quite different stochastic processes.

First, there is the process whereby leaders and politicians of different “types” are chosen. It is important to note that the underlying distribution of possible types from which politicians are chosen is stationary, that is, non-time-varying. The proportion of good guys versus bad guys has never changed. [This is one way of affirming that “human nature never changes”.] It is from this invariant distribution that leaders are selected by the stochastic process: It might select King Ivan the Terrible at time t , and then select King Ivan the Good at time $t+1$, etc.¹

Second, there is the evolution of the stock of human knowledge and hence of the technological infrastructure at each point in time. It is *this* which determines at each point in time which actions are feasible, and what their consequences are. Whereas

¹ Some might argue that the recent rise of democracy in one-third of the world is gradually giving rise to a selection of more law-abiding types. If this is true, then the selection process can be modeled as “trend-stationary”. Yet the underlying *set* of “types” remains invariant.

the process governing the selection of “types” of leaders is basically stationary, the process governing technological change is highly non-stationary. It is also a *non-decreasing* and *time-irreversible* process: The stock of knowledge always grows (except for brief regimes of book-burning), and it is always possible at time t to recreate the technology of any antecedent regime – but not vice versa.

During a given time interval Δt , history can thus be interpreted in terms of the combination of the types of leaders selected by the stochastic process (the “politics” of the time) *and* of the technologies in place. But since the distribution of human types does not change, history can then be said to be *technologically determined* in the sense that the only thing that ever changes and thus creates the dynamic of history is the growth of knowledge and hence technology.

For example, the seemingly unchanging tribal warfare that dominated the village life of the highlands of New Guinea for one thousand years can be explained in terms of the types of chieftains competing with one another at each point of time – their courage, their leadership abilities, etc. Virtually no additional explanation is required *since there was virtually no technological change at all during this period*. At the other extreme, the emergence of the United States as today’s sole superpower can only be explained in terms of the type of its leaders (Presidents Reagan and “W” Bush in particular) *and* its dominance of Post-industrial technology (its “hard” technology) *and* the power of its growth-oriented entrepreneurial economic system (its “soft” technology).

It was Marx who most strongly argued for the view of history espoused here. In his view, the evolution of the “means of production” was the principal driver of history. Yet where Marx went astray was in his espousal of the “theory of the surplus value of labor”. His view of a perpetually impoverished workforce was wrong and prevented his theory from accommodating the real story of the past 150 years:

The sharing of the fruits of technological progress by owners of capital on the one hand and labor on the other (both wealth and living standards rise in sync) gave rise to a vast and enfranchised middle class. Its “wealth” is denominated not by the small share of the nation’s capital stock it owns, but by the ever-higher standard of living it enjoys. Indeed, what would Marx have thought of the experience of the US during the last three years, during which the “owners of capital” lost some \$8 trillion, whereas average real living standards rose by 4%?

Marx’s blinkers in this regard also prevented his apprehending the *feedback effect* whereby the rise of the values and expectations of the middle class coupled with its enfranchisement would radically alter the incentive structure that constrains politicians, and would thus redirect the course of history. Today, what OECD politician dare run afoul of the “entitlements” mentality of today’s aging electorate? And what of citizens’ inalienable rights to Internet access, cell phones, and sex-change therapy? The theory we shall set forth accommodates these realities by incorporating the downstream societal consequences of technological change as an integral part of history, indeed as a key driver of history.

2.B. The Incentive Structure of the New International Order – The Impact of *Eight* Current Technological Developments –

In assessing the impact of today's rapid rate of technological change on the new international order, keep in mind that the import of technology lies not only in its role of changing the strategy sets available to the players, but also of altering the payoffs (net costs/benefits) associated with implementing strategies, and in transforming societal values and expectations, as just discussed.

By the time we have completed our analysis (at the end of Chapter II), we will have shown how technology has directly or indirectly transformed the incentive structures of the following three types of games: (i) the game being played between the great powers themselves, (ii) the game being played within any nation between politicians and their citizens (whether or not the polity is a "democracy"), and (iii) the two regional subgames being played between the neighboring states of central and Eastern Asia – subgames in which Russia and China will respectively be enmeshed.

What follows is a list of the principal consequences of technological change that we foresee. We shall draw upon these in Chapter II, where our principal theses are developed.

1. Accelerating Technological Progress in Matters Military: In his new book *The New Face of War*, Bruce Berkowitz makes a compelling case that an outright revolution is taking place in military affairs everywhere, a revolution based solely upon technology. The essence of the "new warfare" rests on the interplay of new information technologies with the concepts of mobility, flexibility, connectivity, and modularity.

To appreciate the truth of this contention, just consider the following critical technologies used in the Iraq campaign, technologies still unfamiliar to all but a handful of analysts: J-Stars, JDAMs, B-2s with reduced electromagnetic signatures, digital terrain-scanning systems, laser-guided bombs, and fast-clotting "synthetic skin" bandages that deploy positively charged chitosan molecules, and to top it off, astonishing RQ-1A/B pilotless Predators:

"A Predator is an entire system of warfare consisting of four aircraft (with sensors), a ground control system (GCS), a Predator Primary Satellite Link (PPSL), and 55 personnel for continuous above-ground 24-hour operation. The basic crew flies the entire system from inside the GCS via a C-Band line-of-sight data link or a Ku-Band satellite link."

– US Air Force Communique, March 14, 2003

2. Reordering of Established Military Powers: Military power will increasingly be based upon commanding these expensive and rapidly-evolving technologies. Nations able and willing to invest in them will become differentially more powerful than those

who do not – at an accelerating rate. Those that don't will be out of the game. This is one of the principal lessons to be drawn from military events in the Middle East since the time of the first Gulf War in 1991.

3. Increasing Threat Power of Rogue Groups: Rogue groups will continue to command cheaper, more portable, and easier-to-deploy weapons that they can use against civilian populations. And the established powers will continue to confront a Herculean task in identifying and forestalling such strikes ahead of time. This implies that the relative threat power of rogue groups will continue to increase, per John F. Nash's theory of threat power that is briefly reviewed in Section 3 below.

4. Rise of Youth-Oriented Global Consumerism: The proliferation of modern communications technologies – the Internet in particular – is creating a globalized world of consumer-driven demand. This demand is characterized by surprisingly homogeneous tastes, especially on the part of today's young people. Indeed, a recent GOOGLE survey showed an astonishing level of "homogeneous savvy" on the part of young subscribers from virtually all parts of the world: The search requests entered by youngsters were surprisingly similar, whether they originated in the US, in Russia, in Denmark, in Columbia, or in Chad. The appeal of sports heroes like UK footballer David Beckham is increasingly global, as is the popularity and use of cell phones and the Internet. And it seems to matter little whether the family income of those entering search requests is \$600 or \$600,000.

5. Rising Appreciation of Market Capitalism: Given this rise in global consumerism, politicians everywhere are scrambling to jump on board the Market Capitalism Express, even if certain variants of capitalism are not democracy-friendly to date (e.g., China's version). The reason for the ascendancy of market capitalism is that it is the only system that produces the consumer goods increasingly demanded by populations worldwide. In this sense, Francis Fukuyama's forecast of the end of classical ideology (capitalism versus communism) is largely correct.

It is easy to overlook the point that the rise of the theory of Invisible Hand capitalism is *itself* a major technological advance. Indeed, rulers for millennia have attempted to increase their nation's wealth and output, but they had no understanding of how to do so – even in environments of technological change. Specifically, they lacked an understanding of such "soft technologies" as the role of the price systems in resource allocation; the role of securities markets; the need for flexible product, capital, and labor markets; the proper role of fiscal and monetary policy; and the need for mechanisms for reallocating risk. Today, the need for such institutions is increasingly acknowledged.

6. Increased Regionalism: During the height of the Cold War, the noun "regionalism" was rarely used. Nor was there much evidence of the regional religious and cultural factions that are now so salient in the Middle East and central Asia. The situation today is very different for two main reasons. *First*, the Cold War ended. The gravity of this global zero-sum Balance of Terror game had suppressed long-standing regional differences (e.g., Balkan tensions). The post-Cold War geostrategic power vacuum has now permitted these differences to flare back up. *Second*, technology is

playing a critical role in exacerbating regional and religious differences. Specifically, it is ever easier and cheaper for leaders of dissident factions to obtain the terrorist weapons required in order to be taken seriously.

Additionally, to the extent that the politicians of a given state deprive their citizens of the Rule of Law and adhere to discredited economic systems that cause living standards to fall, public anger will grow. This is particularly true today since universal access to global media now apprises citizens of the extent of their deprivation – for the first time in history. As a result, politicians will increasingly need *scapegoats* for their own miscreance. It will thus suit their purpose to dredge up ancient rivalries and hatreds to prop up their failing regimes. Increased regional conflict will be one result of this state of affairs.

7. Proliferating Coalitions and Increased Coalitional Instability: The juxtaposition of the power vacuum caused by the end of the Cold War with increased regionalism is giving rise to a proliferation of tentative coalitions and to increased coalitional instability. We see this everywhere: Who will be in the next coalition of the willing? Whose side is Russia really on? Can Germany in fact coalesce with France? Which Arab states will work with (or betray) which others? This point about coalitional instability will be further clarified in our review of game theory just below.

8. Heightened Need for Decisiveness and ‘Pre-emption’: As perceived terrorist threats proliferate, and as nations feel increasingly vulnerable, politicians will have an incentive to respond more rapidly and decisively than ever before. While the US was willing to wait six months for the UN Security Council’s approval of the invasion of Iraq, Russia certainly did not await anyone’s permission to go after the terrorists who blew up apartment buildings in Moscow. It proceeded directly to Chechnya and ruthlessly hunted them down. The US did not request anyone’s permission to go after the 9/11 terrorists hidden by the Taliban, and to destroy the Taliban regime in the process. And the Chinese will not seek consensus approval to go after neo-Maoists or whoever else might stir up trouble in its borderlands.

In this sense, President Bush’s September 2002 Doctrine of Pre-emption was technologically pre-ordained. For today’s terrorist technologies make it extremely costly for a nation at risk to delay action while awaiting consensus approval of its own self-defense. In this regard, President Bush is quite correct in stating that waiting for terrorists to strike helpless civilians can be suicidal.

3. Some Preliminary Concepts from Game Theory

Note: The following three-page review can be skipped by readers with familiarity with game theory. We have included it because many readers in the past have requested a “brief overview”, and because it will clarify the analysis in Chapter II. The concepts reviewed are *very* important, and they are subtle. Most of them stem from the work of John F. Nash and John Harsanyi. They are not taught in courses in financial economics.

The most basic assumption needed in analytical social theory is the axiom of simple self-interest maximization. This implies that actors select their strategies so as to maximize their risk-adjusted expected payoffs. In doing so, no assumption is made that the probabilities they attach to the outcomes of their choices are "correct". That is, they act on their current beliefs, but these beliefs are often *wrong* and mistakes thus result. In a global security context, mistakes can prove very important and can even lead to war (the case of the Serbian crisis of 1913 and the consequent outbreak of World War I, and the near miss in the case of the Cuban missile crisis). Properly understood, irrationality is not necessarily the culprit here. Mistakes are. This distinction is critically important.

Self-interest Pursuit in "Game" Contexts: When one decision-maker interacts with another so that their strategies become interdependent, we have a so-called "game". In such contexts, the notion of simple self-interest pursuit must be extended to deal with the fact that all players are *symmetrically* trying to maximize their self-interest while in partial conflict with one another. The fundamental solution concept for such situations is that of an "Equilibrium Point" (henceforth EP) of a game. Specifically, in an *n*-person game, an Equilibrium Point refers to a set of *n* strategies – one for each player – possessing the optimality property that each strategy is a "best reply" to all the other (*n-1*) strategies taken as given. At least one such EP set of strategies will exist in any game, as was proved in 1950 by John F. Nash, Jr. who introduced this concept in his brilliant Princeton Ph.D. thesis.

The importance in analytical social science of the concept of an EP cannot be overstated. Suppose, for example, that you observe behavior that seems "highly irrational" or "unfortunate", e.g., today's mutually destructive Palestinian-Israeli standoff. A game theorist will then urge you as follows:

"You are probably witnessing EP behavior in the game as it stands. That is, given his own values and information, Sharon is acting optimally against Arafat – and given his values and information, Arafat is acting rationally against Sharon. Yet, while the players may not be irrational, they are stuck with playing a "bad" game whose outcome is most unfortunate.

If the world community wishes to change this pathological behavior, then it must alter the incentive structure of the given game (by altering the schedule of rewards and penalties) in such a way that the EP strategies of the new game that results yield a socially more desirable outcome than the EP strategies of the original game yielded."

It is very important to understand this paragraph. Please reread it!

Quality of the Outcomes of EP Strategies: In assessing how good the outcome of a given game is from society's standpoint, two criteria are invoked: *efficiency* and *stability*. The outcome resulting from the play of Nash EP strategies is said to be efficient if it would be impossible for any one player to receive more without some other player receiving less. [In economics, this criterion is known as Pareto

optimality.] Stability refers to the likelihood that players will stick to their EP strategies, as opposed to defecting from them. More instability implies more chaos.

In analyzing the EP of games, and their social welfare implications, it turns out that there are two fundamentally different types of games to be considered:

- **Non-Cooperative Games:** Here, players may or may not be able to communicate with one another, but they are *not* able to make "binding agreements" with one another. Almost always, in games like this, the outcome is inefficient. Everyone could in principle end up better off than they do.

The classic example here is the arms race of the Cold War era: There was no God or Global Court that could enforce arms limitation agreements that the US and the USSR might wish to enter into. The result: a bankrupting arms race that no one could stop until the USSR putatively ran out of money. Another well-known example of a non-cooperative game is the celebrated Prisoners' Dilemma game of sociology and economics textbooks. The EP strategies are for each prisoner to tattle on the other. Both thus end up serving long prison sentences that could have been avoided had both prisoners selected the individually irrational (non-EP) "Don't tattle" strategies.

- **Cooperative Games, and Coalitions:** Conflict situations in which players *can* communicate and make binding agreements are called cooperative games. The outcome is almost always efficient. The classic example here is the textbook bargaining game where some "pie" (e.g., money) must be divided between competing parties such as labor and management. The rules of the game specify that, if some binding agreement is not reached by the players, then they both walk away empty-handed. Thus there is a strong incentive for both parties to compromise their differences and reach an agreement. The Nash EP of this game turns out to be the particular allocation of pie (money) that is inversely proportional to the players' risk aversion levels: the *more* risk averse a player is, then the *less* pie he ends up with.

Where $n > 2$, coalitions typically form and oppose one another during the bargaining process. In this more general case, the EP outcome will still be an efficient outcome. But it will now reflect the *net* strategic differences between the players in the following sense: Player *i* will get more pie if he is less risk averse than *j* and *still more pie* if the coalitions of which he is a member possess more bargaining muscle and threat power than do the coalitions including player *j*.

In an *n*-person game, up to $2^n - 2$ non-empty coalitions can form and oppose each other. As *n* gets large, this rapidly becomes a huge number. Game theory confirms our intuition that, the more numerous the coalitions, the more difficult it is to forge a cooperative outcome, and the more unstable the outcome tends to be. The reason why is fascinating, but is complex and thus relegated to a footnote.²

²Essentially, the problem lies in a double-equilibrium condition that must be satisfied if a mutually satisfactory agreement is to be arrived at between all *n* players. First, all $2^n - 2$ non-empty coalitions must be in agreement with each other. Second, all $n \cdot (n-1)/2$ pairs of individuals

• **Mixed Games:** In the context of international relations, the relevant games are mixed: Binding agreements are possible as regards certain strategy options, but not possible as regards others. The result is a composition of cooperative and non-cooperative games.

Threat Strategies and Threat Power: In addition to defining and proving in 1950 the existence of equilibrium points in all games, John F. Nash also solved the problem of determining the relative threat power of different players during bargaining. In 1953 he showed that there will always exist an optimal set of threat strategies in any bargaining game – “credible” threat strategies. As we have shown in past reports, the threat power of player *i* relative to *j* is proportional to the degree to which *i* can damage *j* more/less than *j* can damage *i*. Here, the “damage” *i* does to *j* refers to the *net damage*, i.e., to the spread between the damage *i* does to *j* minus the cost to *i* of hurting *j*.³

Meaning of “Power”: One of the most important accomplishments of game theory has been to clarify for the first time the concept of the net power of player *i* relative to player *j* in an *n*-person game. Briefly, the relative power of player *i* is the *ex ante* probability that he will prevail in achieving his ends during multilateral bargaining. Thus the ratio p_i/p_j defines the power of *i* relative to *j*. A player’s net power is a highly complex function of his threat power, his risk aversion, his ability to join powerful coalitions, his relative intensity of desire for what is at stake, etc.

Upon simplifying all this, a player’s relative power coefficient will reflect three interrelated dimensions of power: (i) How able is he to project power in order to achieve his goals, assuming that he wishes to do so (e.g., does a leader possess a strong military)? (ii) How willing is he to do so in general (e.g., does his country generally shy away from conflict, due to embedded pacifism, or is it bellicose)?, and (iii) How incentivized is he to utilize such power as he has in the context of a particular conflict situation (e.g., to what extent are his nation’s interests at stake in a particular game)?

To see how subtle the concept of power is even in a simple two-person game, consider John Harsanyi’s “Blackmailer’s Paradox”. Assume that player 1 obtains some damaging information about player 2, and demands a payment of \$100,000 from 2. Player 2 on the other hand has no offsetting information about 1. Assume also that both players have identical utility functions, i.e., identical risk attitudes. Most people assume that player 1 possesses all the power here, and that 2 will end up paying the full \$100,000. But this is incorrect. Player 2 will end up paying only \$50,000. His

must be in agreement with each other. Harsanyi’s 1963 bargaining model showed how these double-equilibrium conditions can be simultaneously met.

³ In choosing his optimal threat strategy, player *i* will attempt to *maximize* the value of this net damage entity, whereas *j* will pick his threat so as to *minimize* its value. The solution to this so-called MAXMIN problem is the pair of optimal threats that Nash first characterized.

power over player 1 lies in his ability to *withhold* from 1 the money that player 1 so clearly needs. When bargaining, they will end up agreeing to “split the difference”.⁴

Information Structure, Mistakes, and Instability: While the relative efficiency of a Nash EP in a given game depends upon whether the game is cooperative or non-cooperative in nature, its stability depends upon the nature of the information that the players possess about each other’s strategy sets and payoffs. Classical game theory assumed *complete* information about the game, that is, each player knew the strategy sets and the strategic “types” of all other players. When this is the case, the EP strategies are usually stable.

But when players lack such information about each other – the case of *incomplete* information – then mistakes occur and the result is strategic instability. One reason why is that players will “probe” one another in an effort to determine each other’s true “type” (“Know thy enemy before disarming him!”), and the result of this probe-and-learn process can be chaotic.

“Dummy Players”: In game theory, so-called dummy players are strategically inert players that, when added to a game, do not change its outcome. Intuitively, dummies are players that have no strategic relevance because they have no bargaining power, even if they have the power of palaver. Hint: Think France in the future.

4. Conclusion

This completes our review of some elementary concepts in game theory. We shall now draw on these as well as on our analysis of technological change to characterize the emergent global security regime as we see it. Specifically, we will deduce in Chapter II the nature of today’s emergent international order from the concept of self-interest pursuit in a global game whose incentive structure has been profoundly altered by technology.

⁴ Mathematically, the Nash solution to this two-person bargaining game will be a payment by player 2 of \$50,000 to player 1.

