INTERNATIONAL BUSINESS FORECASTING USING SYSTEM DYNAMICS WITH GENERATIONAL FLOWS

John J. Xenakis
jxenakis@csc.com

CSC

ABSTRACT

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The "butterfly effect" of Chaos Theory tells us that we won't ever be able to predict the weather more than a few days in advance, that election predictions can turn around overnight, and that there's no way to time the stock market. But there are SOME things that CAN be predicted. The power of computers over time, as predicted by Moore's law, is a famous example. It turns out that some political and sociological things CAN be predicted, because they follow trends that repeat at roughly equal intervals at all places and times in history. Each individual person has free will, and can do anything he wants, of course, but when you're talking about huge masses of people, entire generations of people, then certain attitudes and behaviors follow regular patterns over decades and centuries. The regular patterns occur in attitudes and behaviors related to things like gender and family issues, political attitudes, levels of xenophobia and levels of risk aversion. These attitudes and behaviors, when adopted by large masses of people, can have significant political consequences. Thus, once the patterns are understood, then it's possible to make certain kinds of specific predictions.

System Dynamics was developed at MIT in the 1950s by Jay Forrester as an approach to understanding complex systems by analyzing feedback loops within the system, and flows of resources into and out of the system. It's been used to model everything from the life of insurance companies to new product adoption in marketing campaigns. Generational Dynamics applies System Dynamics to generations and population systems within a country or the world. It shows, for example, the effect over several generations of a major war of extermination (called a "generational crisis war"). The first generation creates new institutions and austere rules designed to prevent anything like that from happening again. Subsequent generations rebel against the austere rules, causing them to unravel. At about the time that the survivors of the previous crisis war all disappear (retire or die), all at once, then a new crisis war is usually triggered, and the cycle repeats itself.

To prove the validity of generational theory, the web site http://GenerationalDynamics.com has been set up since 2002 to post specific analyses and predictions that could be tested. This web site has been an important part of the development, because it exposes these analyses and predictions to the general public, and allows individuals to make their own judgments. There are now

thousands of articles on this web site, most containing specific predictions and analyses that have been tested and shown to have turned out to be true. For example, it predicted in 2003 that there would be no civil war in Iraq or, if there was, that it would fizzle quickly, and that's what happened. In 2006, it also predicted that any war in Lebanon would fizzle quickly, and it did. It also predicted that the Sri Lanka violence WOULD spiral into full-scale civil war. In 2009, it predicted that the student riots in Iran would continue for years, just as they had in America in the 1960s–70s, and so far they have.

Once you know that you can make certain kinds of predictions, what good is it? This paper shows how the Generational Dynamics methodology can be used by governmental and commercial organizations for international business and political forecasting. Generational Dynamics does not replace traditional forecasting tools, of course; but it provides powerful additional tools that can be used in conjunction with traditional tools to provide much more accurate analyses and predictions in countries around the world. This paper describes the methodology and tools.

The 2010 documentary movie "Generational Zero" is based on the Generational Dynamics theory, and shows how the Boomers and Generation-X born after World War II ignored all the lessons that the survivors of the 1930s Great Depression had learned.

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1   INTRODUCTION

Companies that do business in other countries need as much information about those countries as possible. To get this information, they depend on media reports and commercial intelligence services. This produces large amounts of information, but very often it's just as biased and contradictory as such information is about the United States.

Generational theory, based on System Dynamics, does not replace "on the ground" intelligence. What it does provide is a methodology for determining which of the conflicting and biased conclusions from such intelligence are most likely to be correct.

Let's provide some examples, with brief analyses of Lebanon, Kenya, and Sri Lanka.

1.1   LEBANON

In February 2005, Lebanon's beloved former Prime Minister Rafiq Hariri was assassinated by an act of terrorism blamed on Syria. Much of the world was afraid that Lebanon and Syria would soon be at war. A generational historical analysis of Lebanon, especially since the 1982 Sabra and Shatila massacre, revealed that a war between Lebanon and Syria was impossible at that time; or, if some politicians forced the issue, then the war would have no popular support, and would not last long.[i]

Then, in July 2006, a war began between Israel and Hizbollah, resulting in the destruction of much of Lebanon's infrastructure. Based on separate generational analyses of Israelis and Hizbollah, I wrote that Israel would fight an aggressive "existential war," while Hizbollah would fight half-heartedly.[ii,iii] This turned out to be the case.

After the war ended, Lebanon appeared to be descending into chaos. Violence was increasing, and analysts and politicians around the world openly expressed fear of a major civil war in Lebanon between government (anti-Syrian) forces and (pro-Syrian) Hizbollah. I wrote that the generational analysis of Lebanon had not changed, and that a civil war at that time was impossible. I wrote that there would be a major political battle and that, at some point, "a political winner would be declared — either the current government or Hizbollah. But there won't be a civil war."[iv,v]

Late in 2008, I received the following e-mail message from a web site reader:

> I am very impressed with your site, especially when looking at some of your past predictions. I was trapped in Lebanon during the fighting in early May and everyone was in great fear that a civil war was in progress. You predicted that it would fizzle out, and it did.

My point in referencing this is that generational theory provides a great deal of information and intelligence that can't be obtained in any other way. Generational Dynamics does not replace "on the ground" intelligence, but it supplements and interprets such intelligence, making it far more useful.

Businesses who do business in Lebanon and who read (and believed) the numerous analyses on my web site could tailor their business strategy and benefit. A company that believed the probability of a major civil war in Lebanon was high

might either refuse to invest in Lebanon, or might abandon its assets there. A company that understands that a civil war is impossible has an enormous strategic advantage over its competitors.

1.2   KENYA

Immediately following the December 2007 election, Kenya experienced a large-scale ethnic violence for a few days. The fault line for this violence was mainly between the dominant Kikuyu tribe and the marginalized Luo tribe. Analysts and politicians universally expressed fear of a full-scale civil war in Kenya, but expressed surprise that it was happening at all because, "Kenya has been recognized for its stability since it became independent in 1963." [vi]

A historical generational analysis of Kenya since British colonial times, particularly since World War II and the Mau-Mau rebellion of the 1950s, indicated that Kenya was approaching a time when a civil war was extremely likely. I wrote, based on this generational analysis, that the new ethnic violence was unlikely to spiral into full-scale war right away, but that a major civil war was almost certain within ten years.[vii]

To analysts and politicians, this situation seemed very similar to the situation in Lebanon, with low-level violence occurring for a short time, and these people said pretty much the same thing about both situations. In the Generational Dynamics analysis, the two situations are completely different, producing completely different forecasts and predictions.

Furthermore, it would be possible to do a more greatly detailed analysis, focusing on the generational timelines of the individual tribes, to provide regional forecasts of Kenya. This information would be extremely valuable to a company doing business in Kenya.

1.3   SRI LANKA (FORMERLY CEYLON)

Sri Lanka is several years ahead of Kenya on the generational timeline, and so when a peace treaty broke down in 2005, leading to ethnic violence in May 2006, I wrote that "Sooner or later, and probably sooner, there will be a full-scale genocidal war between the government forces and the Tamil Tiger rebels."[viii],[ix]

Full-scale civil war broke out in January 2008, when the Sri Lanka government declared all out war against the rebels.[x]

The civil war between the dominant Sinhalese ethnic group and the marginalized Tamils began in 1976. Today, this war is extremely bloody, with dozens or even hundreds of civilians being killed on many days.

Once again, analysts and politicians are saying the same kinds of things they were saying in the case of Lebanon and Kenya. They see this kind of ethnic violence, they hope that it will end soon, and they expect terrorist activities to continue as they have for many years.[xi]

From the point of view of generational theory, what's happening in Sri Lanka is totally different from this view. This war is in the midst of the "explosive climax" of a "generational crisis war." It's expected that the Sinhalese will defeat the Tamil Tiger rebels within the next few weeks, but after that the war will not continue in another form, as analysts are predicting. The correct historical analogies are the collapse of Berlin in 1945 and the surrender of Japan after the nuclear bombing of Hiroshima and Nagasaki. Sri Lanka will transform into a new, non-violent society, at least for a while.

Thus, today there is a big opportunity for any company thinking of doing business in Sri Lanka. Competitors will be reluctant to commit resources to Sri Lanka because of the fear of an ongoing civil war. But a company that understands where Sri Lanka is going in the next few months has a big competitive advantage in doing business in that country.

2   INTRODUCTION TO SYSTEMS DYNAMICS

In 2002, when MIT Sloan School professor John D. Sterman accepted the Jay Wright Forrester Prize for his work on System Dynamics, he gave an acceptance speech titled "All Models are Wrong: reflections on becoming a systems scientist,"[xii] abstracted as follows:

> *"Thoughtful leaders increasingly recognize that we are not only failing to solve the persistent problems we face, but are in fact causing them. System dynamics is designed to help avoid such policy resistance and identify high-leverage policies for sustained improvement. What does it take to be an effective systems thinker, and to teach system dynamics fruitfully? Understanding complex systems requires mastery of concepts such as feedback, stocks and flows, time delays, and nonlinearity. Research shows that these concepts are highly counterintuitive and poorly understood. It also shows how they can be taught and learned. Doing so requires the use of formal models and simulations to test our mental models and develop our intuition about complex systems. Yet, though essential, these concepts and tools are not sufficient. Becoming an effective systems thinker also requires the rigorous and disciplined use of scientific inquiry skills so that we can uncover our hidden assumptions and biases. It requires respect and empathy for others and other viewpoints. Most important, and most difficult to learn, systems thinking requires understanding that all models are wrong and humility about the limitations of our knowledge. Such humility is essential in creating an environment in which we can learn about the complex systems in which we are embedded and work effectively to create the world we truly desire."*

Around the time that Sterman was giving this speech, I was struggling with trying to understand whether the foundational work on generational theory by two historians, Neil Howe and the late William A. Strauss, was an important theoretical development, or was just a fad on the level of astrology.

It was only in the years that followed that I understood that generational theory was actually a real life application of Sterman's System Dynamics. In Systems Dynamics terminology, the "stock" was population, the "inflows" were births, and the "outflows" were deaths.

2.1   FAILURE OF MACROECONOMIC MODELS

A simple financial example of Sterman's claim that "All models are wrong" illustrates the problem.

Nobody today would even dare to claim that macroeconomic models have been good for much of anything in the last 15 years. They couldn't predict or explain why the dot-com bubble occurred at all, or why it began in 1995, instead of 1985 or 2005. Macroeconomic models couldn't predict or explain the real estate bubble, the credit bubble, the credit crunch, the stock market plunge or the banking crisis. They certainly can't explain anything happening today.

Macroeconomics models could be vastly improved by incorporating Systems Dynamics concepts as applied to population changes. Briefly it would be done as follows: Note that survivors of the 1930s Great Depression were extremely risk-averse, very suspicious of credit, and very conservative in their investments. Model

the population "outflow" of survivors through death, and the "inflow" of younger generations through birth, and measure such things as risk-averseness of the different generations. It will turn out that the dot-com bubble occurred at precisely the time that the Great Depression survivors in senior management positions all disappeared (retired or died), all at once in the early 1990s.

Incorporating Systems Dynamics into macroeconomic models would not make the models perfect, but it would make them much more accurate than they've been so far.

2.2   BRIEF INTRODUCTION TO SYSTEM DYNAMICS CONCEPTS

Systems Dynamics was founded in the early 1960s by Jay W. Forrester of the MIT Sloan School of Management with the establishment of the MIT System Dynamics Group. The current Director is Prof. John Sterman, previously quoted.

Stocks and flows are the basic building blocks of a system.

A stock is some entity that you're keeping track of over time. An inward flow adds to the stock and increases it, and an outward flow depletes the stock and reduces it.

Here are some examples of stocks and flows:

Stock	Inward flow	Outward flow
Population	Births and immigration	Deaths and emigration
Inventory	Incoming goods	Outgoing goods
People in a store	People entering store	People leaving store
Water in a bathtub	Water pouring in from faucet	Water draining out
Bank balance	Deposits	Withdrawals
Generation	Births	Deaths
Businesses	Business opening	Business closing

A **feedback loop** occurs when the inward and outward flows interact.

2.3   LEMMINGS AND PREDATOR OWLS

Let's consider a slightly more complex example, involving two species of animal, a predator species (owls) and a prey species (lemmings).[xiii]

In this case, the lemmings population grows, and the lemmings get eaten by the owls. The owl population grows and kills off so many of the lemmings that they're almost extinct. That's when the owls die off with nothing to eat. Then the lemming population can start growing again.

Lemmings and Predator Owls

Source: Peter Turchin
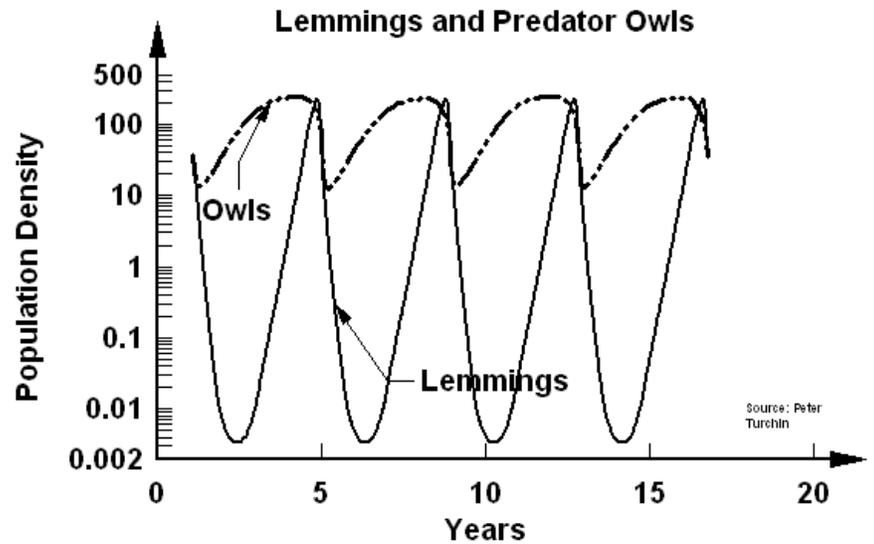
The above graph, developed by Peter Turchin[xiv] at University of Connecticut, shows stocks of lemmings (prey) and owls (predator) in a region

Here you have two different stocks (owls and lemmings) interacting with each other, with flows in each case controlled by births and deaths.

There's a "feedback loop" not just because the populations interact, but also because the flows interact: As the population of owls increases, the population of lemmings decreases, and vice-versa.

This is an example of System Dynamics applied to populations of animals. Some kind of cycle of this type MUST exist because the population of every animal always grows until the food supply is exceeded. Some animal populations exhibit simple sine wave cycles, while those which, like the above, involve the interactions of predator and prey, can be much more complex.

The most complex of all are human beings. Throughout history, humans have fought genocidal wars over resources such as food, land and water, as growing populations came into contact with one another. There are two things that make humans' population cycles more complex than those of animals: First, animals die quietly when they run out of food, while "intelligent" humans go to war; and second, humans fight each other, rather than other species.

What generational theory does, by applying Systems Dynamics to populations of humans, is to provide the mechanism for understanding humans' population cycles, and how they relate to human intelligence and social relationships.

2.4   A SYSTEMS DYNAMICS QUIZ

It turns out that systems reasoning is extremely counterintuitive, and understanding of it is completely lacking among politicians, journalists, analysts, and "experts" of all kinds, although Professor Sterman believes that it can be taught in school.

To show how difficult it is to understand systems thinking, try taking the quiz below, which I've taken from Prof. Sterman's paper.[xv]

This is a very simple problem, in a simple situation — a few people enter and leave a store. It requires no math, and nothing more than a little intuition.

Just to make it a little easier, we'll explain the graph below: In the first minute, 10 people leave the store, and 14 people enter; in the second minute, 11 people leave and 16 people enter.

The graph below shows the number of people **entering** and **leaving** a department store over a 30-minute period.
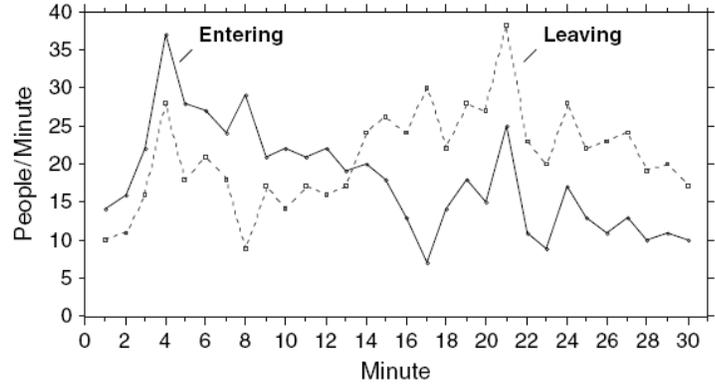
Please answer the following questions.

Check the box if the answer cannot be determined from the information provided.

1. During which minute did the most people enter the store?

    Minute _____   ☐ Can't be determined

2. During which minute did the most people leave the store?

    Minute _____   ☐ Can't be determined

3. During which minute were the most people in the store?

    Minute _____   ☐ Can't be determined

4. During which minute were the fewest people in the store?

    Minute _____   ☐ Can't be determined

If you did well on this test, you should be very proud of yourself. Among MIT students who took the test, most got the first two questions right, and most got the last two questions wrong. Many students were completely stumped. (See the Appendix for solutions.) Now, this is really a very simple problem, involving a few people going in and out of a store over a 30 minute period.When you move to economics, involving the habits of hundreds of millions of people and businesses, the concepts are abstract enough to be beyond the abilities of most economists who have not been trained in these concepts.

3   HISTORY OF GENERATIONAL THEORY

3.1   ANTHONY F. C. WALLACE

In 1956, Anthony F. C. Wallace published a paper called "Revitalization Movements"[xvi] to describe how cultures change themselves. A revitalization movement is a "deliberate, organized, conscious effort by members of a group to create a new culture," and Wallace describes at length the processes by which a revitalization movement takes place.

Wallace derived his theory from studies of so-called primitive peoples (preliterate and homogeneous), with particular attention to the Iroquois revitalization movement led by Seneca religious leader and "prophet" whose name was Handsome Lake (1735–1815). Wallace believed that his revitalization model applies to movements as broad and complex as the rise of Christianity, Islam, Buddhism, or Wesleyan Methodism.

3.2   WILLIAM G. MCLOUGHLIN

In his 1978 book, Revivals, Awakenings, and Reform,[xvii] senior history professor William G. McLoughlin took Wallace's work on Revitalization Movements and extended it to "the complex, pluralistic, and highly literate people of the United States." McLoughlin identifies five awakenings in Anglo-American history. He started with England's Puritan Awakening (1610–40) that began midway between the Spanish Armada crisis war and the English civil war. He then describes America's First, Second and Third Great Awakenings, and also includes a Fourth Awakening — beginning in the 1960s.

3.3   WILLIAM STRAUSS AND NEIL HOWE

In the 1980s, when historians William Strauss and Neil Howe did their research on Anglo-American generational patterns for their books Generations: The History of America's Future, 1584 to 2069[xviii], and The Fourth Turning: An American Prophecy[xix], they drew heavily on McLoughlin's work and filled in the detailed generational changes that lead from an awakening to a crisis war to another awakening to another crisis war.

Generational Dynamics in turn draws on Strauss and Howe's work, and extends the concepts of crisis wars and awakenings to all nations, societies and tribes at all times in history.

3.4   PROOFS OF EXISTENCE FOR GENERATIONAL PATTERNS

It is, of course, impossible to prove directly that any patterns exist throughout history, because complete information isn't available. Nonetheless, several indirect proofs are available.

When I first became aware of Strauss and Howe's book, shortly after 9/11, I was genuinely questioning its validity, especially since their theory was restricted to the Anglo-American period since the 1400s, and there were some anomalies that had to be explained. I sought to prove the validity of generational theory to whatever extent was possible, or to disprove it.

Since then, there are now various different proofs of generational patterns, using different methodologies:

- Strauss and Howe's original work identifies six cycles in Anglo-American history. This is a "constructionist" methodology, constructing the generational

archetypes and eras by examining individual histories and diaries from different eras.

- I've identified over 100 crisis wars throughout history, showing that these patterns exist at other places and times in history besides the Anglo-American timeline. As a practical matter, it's difficult to distinguish things like Awakening eras throughout history, because social movements aren't always clearly recorded by historians; but it's much easier to identify Crisis wars, since those are the historical events that are remembered for centuries.

- Any population will grow faster than the food supply grows, which means that the people will run out of food at regular intervals, requiring a genocidal war. This fact alone proves that some kind of genocidal cycle must exist.

- In the field of Population Dynamics, many species of animals have cyclic population cycles, particularly in interactions between prey and predator. These observations extend naturally to humans.

With regard to the last point, there is one significant point about the difference between animals and humans: Suppose that two sub-species compete for the same food, and one is (say) taller than the other. Then the shorter sub-species will run out of food first. Many shorter animals will die quietly, and the entire sub-species may become extinct quietly.

But that's not true of humans. If one group has an advantage over another, the second group won't "die quietly." Instead they'll have protests and demonstrations, as is typical of a generational Awakening era, and eventually they'll have genocidal crisis wars.

- It turns out that if you start with the above concepts, then you can prove mathematically that, under reasonable assumptions, ANY intelligence species in the universe must follow the same generational dynamics pattern.

- I've used my web site, http://GenerationalDynamics.com, for a specific purpose: To test the predictive value of Generational Dynamics forecasting, and thus indirectly prove the correctness of the underlying theory. My web site has now been up for over six years. I've posted over 1,500 articles containing generational analyses of dozens of countries around the world, most containing specific Generational Dynamics predictions. All of those predictions have proven to be true or trending true, and this would not be possible unless Generational Dynamics theory were valid.

4   CHAOS THEORY AND GENERATIONAL FORECASTING

Every human being is an individual with free will, and so it's never possible to predict what an individual will do. The same is true of a small group, say a group of politicians.

But when you're talking about huge masses of people, entire generations of people, then you CAN make predictions with certainty. I like to make the mathematical joke that China, with a population of 2.4 billion, has a population whose size is infinite, for all practical purposes. (No one ever seems to laugh at this joke.)

Thus, we can say at the outset that the "free will" argument does not apply to large masses of people. If generational theory can predict that an entire generation of people is inclined to have certain attitudes or behaviors, then the probability that all people in that generation will use free will to repudiate that inclination is effectively zero.

4.1   ISAAC ASIMOV AND "PSYCHOHISTORY"

In the 1950s, brilliant science fiction writer Isaac Asimov wrote the Foundation series of novels.[xx]

The premise of these novels was that a genius, Hari Seldon, develops a theory called "psychohistory", and is able to use it to predict the future many centuries in advance. Seldon also provides guidance to his followers on how to win wars through cunning, rather than violence. He even predicts the results of elections.

Asimov's concept of "psychohistory" was pretty much disproved in the 1960s and 1970s, with the development of Chaos Theory.

One of the most well-known concepts of Chaos Theory is known as the "butterfly effect": If a butterfly flaps its wings in China it might (or might not) cause a chain reaction that leads to a hurricane in North America. In other words, a tiny event can cause a chain reaction that leads to a huge outcome.

It's easy to see that the butterfly effect applies to other things — such as winning elections, or even starting a war. For example, someone in Washington or Tokyo or Taipei or Beijing might say something (or fail to say something) that causes some kind of chain reaction of events that leads to war.

So there are huge categories of things that generational theory cannot hope to predict. In fact, no one can possibly hope to predict them — which is why politicians, pundits, analysts and other "experts" are wrong at least as often as they're right.

So we know that Asimov's psychohistory cannot possible succeed. But Asimov's work raises an important question that needs answering: What can you predict, and what can't you predict? If crisis wars are like huge pulses of energy that ripple through history, how do we distinguish the pulse from the chaos? If Asimov had wanted to rewrite the Foundation trilogy with Chaos Theory in mind, what could he have allowed psychohistory to predict (like crisis wars), and what would he have to have left to chance (like election results)?

This is the question that Generational Dynamics forecasting attempts to answer by incorporating the concepts of Chaos Theory.

Incidentally, and this is beside the point, I believe that this is one of the most significant "real life" examples of Chaos Theory around. Most examples in textbooks are abstract models based on mathematical formulas.

### 4.2 AN INFORMAL DISCUSSION OF FORECASTING

Before getting to the Chaos Theory model, we start with a general description of the different kinds of forecasting. On its own, each of these kinds of forecasting has some value, but most of the power of Generational Dynamics come from combining the different types. With that background, the Chaos Theory model will make a lot more sense.

4.2.1 Description of Short-Term Forecasting

Short-term forecasting is what everybody uses. To use it, you examine recent previous trends and extrapolate them forward from the present time into the future to make a forecast. This usually works well for growth trends, but not for chaotic trends like weather and politics.

Example: During a November heat wave in New York City, the outside temperature increases every day for two straight weeks. You extrapolate forward and forecast that the temperature will continue to increase in December and January. Obviously, this forecast fails.

This example shows why the kind of political forecasting you want to do fails, and why it HAS to fail.
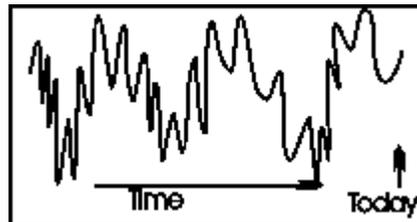
The above graph shows what happens. The value being analyzed shows an increase in the period just before "Today." In short-term forecasting, we extrapolate this increase forward, and predict that the value will continue to increase.

4.2.2 Description of Long-Term Forecasting

A long-term forecast uses a completely different technique, and one that is rarely used by analysts.

The technique is to examine previous trends far into the past to establish long term cycles and patterns, and extrapolate them into long-term trends in the future. To make short-term forecasts, you match current trends to the long-term trends.

Example: In the weather forecasting example, you begin by examining temperature records far into the past, and you discover that the weather is cold every 12 months (in winter). So you conclude that the November heat wave is an anomaly, and you forecast that the temperature is going to fall in December, because you've established long-term patterns with winter coming every year.

This shows why long-term forecasting is more accurate in many cases.

This graph shows what happens. This graph is the same as the preceding one, except that we've added a long-term trend line. Following the long-term trend line allows us to forecast that the value will fall, despite the recent increase.

Example: In May, 2003, President Bush announced a "Roadmap to Peace" plan for a two-state solution in the Mideast. Based on long-term cyclic trends, Generational Dynamics predicted that there will soon be a major regional war between the Jews and the Arabs in the Mideast, re-fighting the genocidal war between Arabs and Jews in 1948, following the partitioning of Palestine and the creation of the state of Israel. At the time of announcement of the "Roadmap to Peace," the Palestine region appeared to be headed for peace. Since that time, especially since the death of Yasser Arafat, hardly a day has gone by since the Mideast conflict level hasn't gotten worse.

We're at a unique time in history, over 60 years after the end of World War II, when every country is experiencing the same generational change at the same time: The leaders in government, education, business, labor unions, social organizations and other organizations are people from the generation that lived through WW II (the "Silent Generation"), and they're all disappearing (retiring or dying) all at once, and are being replaced by the people in the generation born after WW II (the "Baby Boomers"). Generational Dynamics gives a very clear picture, on a country by country basis, where each country is going. No standard short-term forecasting technique can produce that result.

4.2.3   Combining Short-Term and Long-Term Forecasting

Short-term and long-term forecasting have very different characteristics:

- Long-term forecasting produces predictions that are highly (near 100%) certain, but with no specified path or time frame, except within a window a decade or two long. That is, long-term forecasting tells you with certainty where you're going, but doesn't tell you how you'll get there, or how long it will take.

- Short-term forecasting produces predictions that are highly uncertain (often no better than chance or 50% probability), but are highly specific as to time.

By carefully combining the two techniques, we arrive at a prediction that's highly specific, with short or medium term timeframe.

The idea is that the long-term forecasting gives you your destination; then short-term forecasting techniques can be "advised" by the long-term predictions to arrive at a probabilistic short-term result.

Example: Generational Dynamics predicts that there will be a Clash of Civilizations world war in the next few years, probably sooner than later.

The two World Wars, I and II, have not yet been refought. The only questions are: when will the war begin, and who will be fighting against whom?

In 1945, when WW II ended, we could never have predicted with any certainty that we would be heading for a clash between Western and Muslim civilizations.

Today, Generational Dynamics tells us a great deal about how this world war will begin, and how soon.

4.2.4   Exponential Growth Trend Forecasting

Exponential growth trends are well understood, so here we only briefly discuss the subject.

Cyclic trends usually apply to values that remain relatively the same over long periods of time. Any increases or decreases are only temporary.

Growth trends apply to values that grow over long periods of time. In particular, when some value in nature grows, it almost always grows at an exponential growth rate, and so we'll restrict our discussion to exponential growth trends.

- **Population growth.** Generally speaking, for any population of humans or animals, a certain percentage of the population will have offspring each year, and a certain percentage will die. These percentages tend to be roughly the same each year. The result is that the population tends to grow by the same fixed percentage each year, which is the formula for exponential growth.

However, it's a little more complicated: Most populations (including humans) will tend to grow faster than the amount of food available to feed that population. When the population grows to the point where not enough food is available, then a segment of the population is killed — by famine, by a disease epidemic, or by war. This is the "Malthus Effect."

- **Population-based trends**. Many growth trends are directly related to the size of the population, and exhibit exponential growth simply because the population exhibits exponential growth.

For example, how many shoes are manufactured each year? I don't have the figures, but I assume that it's one or two pairs per person around the world, and that's probably been true for centuries. Thus, the number of shoes manufactured each year grows exponentially because the population grows exponentially.

Here's a crucial fact: If there's a temporary perturbation in the size of the population, it will affect the shoe trend. For example, if a world war or an epidemic temporarily causes a 20% drop in the population, then the number of shoes manufactured annually will probably drop about 20% as well.

- **Technological growth trends.** This is the most fascinating — and mysterious — kind of exponential growth trend. It's completely independent of population.

An example is the power of calculating machines and computers, which has been growing at an exponential rate for over a century, but with no relationship to the population size.

Technological growth is not affected by perturbations in the size of the population. For example, if a world war or epidemic killed 20% of the population, the power of desktop computers would NOT drop 20%. It would stay the same. So the power of desktop computers is unrelated to population.

Actually, it wouldn't stay the same: It would continue growing at exactly the same rate. This is the fascinating thing about technological growth — that it's on a growth path entirely its own, completely independent of population, wars, politics or skirt lengths.

The mysterious thing about technological growth is the steadfastness with which exponential growth trends are maintained for decades or centuries, across wildly varying technologies. We just give one example here:
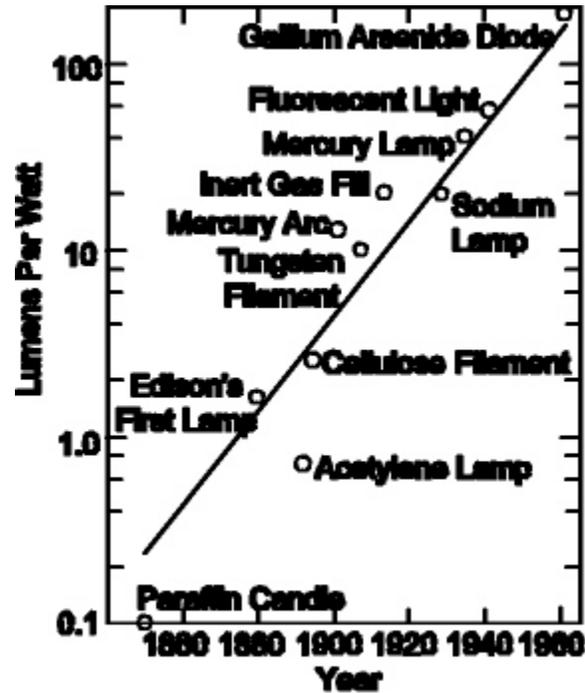
This diagram, by Joseph Paul Martino,[xxi] shows how numerous different technologies for artificial light have always been invented at almost exactly the right time.

Notice in the adjoining graph how new inventions have been improving the efficiency of artificial light sources over time, and how the efficiency has been growing exponentially. Also, notice how each new invention comes at exactly the right time to maintain the steadfast exponential growth.

This graph illustrates how mysterious technological growth is. Why should all these wildly different technologies produce light sources that increase efficiency according to a well-defined predictable growth curve?

Notice also that these technological advances have absolutely nothing to do with population.

- **"Doubly exponential" population trends.** Other growth trends might be described as "doubly exponential," because they depend on the population and in addition, they grow exponentially *PER PERSON*. For example, if you compute the total amount of energy used throughout the world, you would find that it increases exponentially, and you wouldn't be surprised because the population grows exponentially. But it turns out that the amount of energy used *per person* is also growing exponentially, giving a "doubly exponential" effect, combining population-based and technology-based exponential growth effects.

- **Technology-related growth trends.** There are many social trends that are exponential because they're technology related. For example, the divorce rate grew exponentially from 1850–1990 because technology provided labor-saving devices (washing machines, frozen foods, etc.) that freed women from the kitchen. Many financial values (stock market prices, gross domestic product, etc.) also grow exponentially, as we'll describe in the next chapter.

4.2.5   Summary of Generationally-Related Trends

Generational Dynamics combines a number of trends and techniques to obtain a predictive model that's more powerful than any single trend or technique used alone.

Here is a summary of the different trends:

- Generational political trends (long-term, cyclic, local). Trends are cyclic, with a cycle length of 70–90 years (roughly, the length of a human lifetime). Also, cycles are local to each region, although regions merge over time. In the 20th century, most regions of the world merged into two major timelines, which we refer to as the World War I timeline and World War II timeline.

- Generational financial trends (long-term, cyclic, global). These are cyclic, but unlike generational political trends, these are global. The major trend events have been financial crises that occur every 70 years or so (Tulipomania bubble (1637), South Sea Bubble (1721), French Monarchy bankruptcy (1789), Hamburg Crisis of 1857, and 1929 Wall Street crash). A new financial crash is forecast for the near future.

- Population growth trends (long-term, growth, local and global). The population grows exponentially.

- Technology growth trends (long-term, growth, global). These are exponential growth trends that are independent of population. The power of computers is an example.

- Day-to-day political events, daily stock market fluctuations (short-term, chaotic, local or global). These are short-term forecasting techniques.

Generational Dynamics uses all of these together to get a complete picture. In particular, analyzing short term chaotic events can provide information about how close we are, at any given time, to the final destination predicted by the long-term trends.

4.2.6   Attractors

Suppose I ask you to predict the temperature in New York City on January 15 of next year. You might guess something like 30 degrees F (-1 degree C). Why? Because you know it will be winter, and you know that the best guess is a colder temperature. Similarly, you might guess 70 degrees F (21 degrees C) for July 15.

In this example, winter is a long-term cyclic trend forecast, and the day-to-day temperature is a chaotic, random value. Even though the day-to-day temperature is chaotic, it's likely to be close to the trend value determined by the season.

In Chaos Theory, the season trend is called an "attractor," and the day-to-day temperatures are "attracted" to the trend values. This is one way of saying that the daily temperatures are permitted to vary, but are more likely to be hot in summer and cold in winter.

Now let's turn this example around the other way. Suppose you've been imprisoned in a closed room in NYC, and you're going to be freed on January 15. Suppose you have no idea what the date is, but each day you're given only one bit of information: Someone tells you the outside temperature at noon. How do you know when you're getting close to liberation day?

Obviously if the outside temperature is hot, then it must be summer, and so liberation day (January 15) must be very far off. As the temperature grows colder and colder, you can estimate how close you're getting to January 15.

In the first example, we used an attractor trend value (the season) to predict a chaotic value (the daily temperature).

In the second example, we used a chaotic value (the daily temperature) to predict where we were within the trend cycle (the attractor).

In the Generational Dynamics forecasting methodology, the chaotic values and attractor values reinforce each other. In other words, if you know it's winter, then you can predict cold temperatures; if the temperatures are cold, then you can predict it's winter.

Earlier, we said that an ordinary political prediction may have no better than a 50-50 chance of coming true. But if it's the right kind of chaotic political event, and it's "attracted" to the current generational era, then we may be able to say that the political prediction has a 70-30 chance of coming true, or even 90-10.

Thus, in 2002 we were locking up Muslims in jail without charges. This was a drastic change of behavior in the American people, and we've seen nothing of the sort since WW II, when we locked up Japanese without charges. This kind of behavioral shift is characteristic of a generational crisis period, and so I was able to "predict" that we were getting deeper and deeper into such a crisis period.

Once this trend value was established, I was able to "predict" other behaviors typical of crisis periods; for example, I predicted that there would be no antiwar movement of any consequence, since an antiwar movement is not characteristic of crisis periods. Sure enough, through the Afghan war, the Iraq war and its aftermath, and even two Presidential elections, there was no 1960s-style antiwar movement to speak of, except for an occasional brief spurt.

As a practical matter, this shows how to use Generational Dynamics to make predictions. WW II ended in 1945, meaning that the next crisis war could begin any time between 1990 and 2030. But by looking at short-term chaotic political values, we can pinpoint where we are in the generational cycle, and thus make very accurate and specific forecasts.

4.2.7   Some Techniques in Forecasting Methodology

Even with all its restrictions, the forecasting methodology can give you a great deal more information than you might think, mainly because you can firmly predict some negatives.

For example, once you know for certain that there will be a new Arab-Jewish crisis war in the next few years, we can predict with certainty that every peace plan will fail. Once we know that Iraq is in an Awakening period, then we can predict with near certainty that there won't be a Sunni-Shi'a civil war, or that it will fizzle quickly if

it begins. Once you know that a crisis war has begun in earnest in Darfur, then you can predict with certainty that it will run its course, and that the UN will fail to stop it.

Even though these examples are all negative predictions, they still contain a great deal of important information.

So here are some techniques in the forecasting methodology:

- For each society, region or nation under consideration, develop its history for several centuries back. Look for the "big picture" on major ethnic, religious and racial conflicts. This kind of information is not always easy to get, since many societies wish to hide these kinds of hatreds, but they're essential to understanding generational timelines.

- For each society, region or nation under consideration, identify all crisis and non-crisis wars. A crisis war is usually characterized by high genocidal energy, a willingness to exterminate the enemy, or to risk extermination of one's own army rather than retreat. Remember that you can't understand any war just by looking at one nation's point of view; you have to study each nation's treatment of the war to understand it. If you wish to try representing the situation graphically, you may wish to try something like the following:

Figure: Crisis (Generational) and non-crisis wars: United States, Western Europe, Russia, Mexico, Vietnam, China, Ottomans. Not all wars shown.
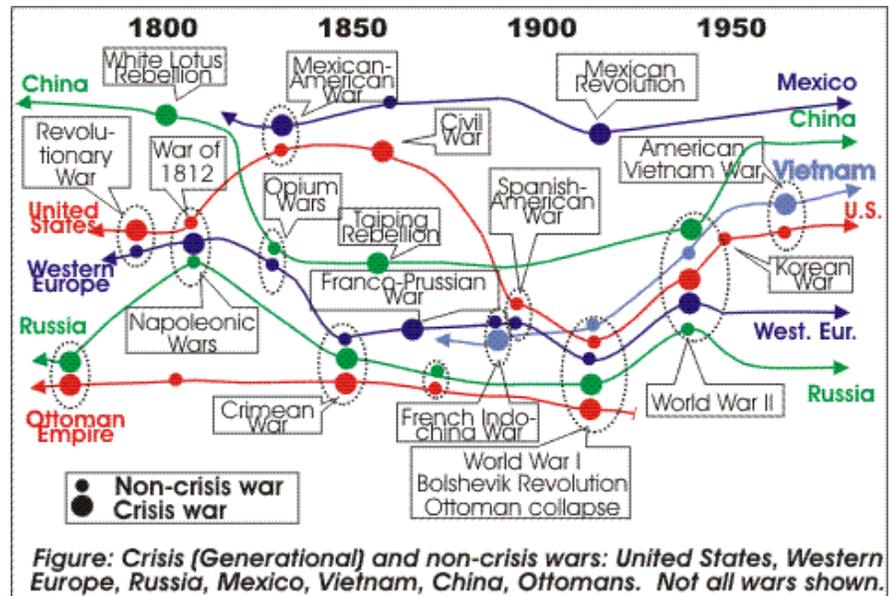
- If possible, do a financial analysis of each nation, to the extent of determining major financial crises. Generally speaking, the period after a crisis war is a time of great prosperity, since there is plenty of food, land and other resources for the reduced population, and a financial crisis indicates a generational crisis period.

- Familiarize yourself with all the characteristics of each of the generational periods — recovery, awakening, unraveling, crisis. These are described in this paper.

- For each society, region or nation under consideration, use the above to determine what generational period the country is in.

- Read the news of the nation on a daily basis to discern how the nation is changing. Important: Make sure that you look for changes in behaviors and

attitudes of large masses of population; changes in attitudes of politicians are irrelevant, except insofar as they reflect the will of the people.

- During awakening periods there'll be increasing social conflict — religious splits, labor unrest, demonstrations, riots, low-level violence, police crackdowns — but no major civil wars or uprisings.

- If a war begins between two nations both in a crisis period, then the war will spiral out of control into a major war.

- If a nation in an unraveling period begins a war, it will try to resolve the war quickly.

- If a nation in an awakening period begins a war, the war may grind on for a while, but it will not be genocidal.

- Be sensitive to "triggering" events that might cause political or low-level conflict to spiral out of control into a major war. However, this can only happen during a crisis period.

- Most important rule of all: Do not let politics influence your analysis. If you believe that the great events of our time could be caused or prevented by President Bush or President Obama, then you will not understand generational theory.

Don't expect this to be easy. Analyzing a single society at a given time may require many hours of study.

4.2.8 *Analyzing Political Events*
Political events are like crack cocaine. Commenting on political events is an obsession, but you're wrong as often as you're right.

Actually, it's easy to get a million political predictions right. All you have to do is make two million predictions. That's all the political forecasting is. You flip a coin to make your prediction, and half the time your prediction turns out right, and you forget about the other half of the time.

Generational Dynamics forecasts are right with nearly 100% certainty, provided that you follow the rules. So what are the rules for commenting on daily news and political events?

Here are some general rules to follow when looking to interpret political events:

- **Mass support rule** If there's a sudden shift in public opinion, and it appears to be lasting, then it should be significant. Hopefully, the change in public opinion will be consistent with standard long term trends identified by Generational Dynamics, such as attitudes toward gender roles or wars.

- **Civil unrest** If civil unrest occurs, make sure that it's being driven "by the people," rather than a few politicians. Civil unrest driven by politicians is sporadic and occasional; civil unrest from the people is continuous and flowing.

- **Cycle rule** When making historical comparisons, compare today's crisis era events with the last crisis period, which was WW II for America. Also, compare awakening periods only to awakening periods, such as by comparing Iraq today to Iraq's expulsion of the British troops in 1947.

- **Non-volatile rule** Day to day stock prices are so volatile that they're meaningless. However, there are some financial measures that are far less volatile, and so can indicate trends; these are things like inflation rates and long-term price/earnings ratios.

If you're like most people, then you'll recoil from some of these conclusions. "Of course politicians count. They run the world!" No, they don't. They may do what they want for a while, but in the end they have to do what's demanded of them by the great masses of people, even in dictatorships.

4.3   INTRODUCTION TO CHAOS THEORY CONCEPTS

With that lengthy introduction to forecasting techniques, we now turn to the use of Chaos Theory concepts to provide the theory support for Generational Dynamics.

Chaos Theory is a new branch of mathematics that was born in the 1960s and has only become seriously studied since the late 1970s.

We give here a brief introduction to Chaos Theory and its sister, Complex Systems Theory (also called Complexity Theory).

If you wish to become a "Generational Dynamics forecasting guru," then you have to have a good feeling about the difference between linear and non-linear systems, chaotic and non-chaotic events. For that reason, you're encouraged to read any of a number of popular books on Chaos Theory that go well beyond this brief introduction.

4.3.1   *Weather Forecasts and the Butterfly Effect*

Chaos Theory is mostly unknown to the public except for one concept, the "Butterfly Effect."

The popular understanding of the Butterfly Effect is as follows:

> *If a butterfly in China flaps its wings, it can cause a hurricane in America.*

This statement of the butterfly effect contains a grain of truth, but it's technically incorrect in important ways. Furthermore, the nature of the technical error is similar to the kinds of errors that journalists, pundits and analysts make on a daily basis in their own forecasting. So it's worthwhile to explore exactly what the butterfly effect really means.

The bottom line is that it is not possible, and will never be possible, to forecast the weather more than a few days in advance. This flies in the face of many people's expectations. People believe that, as time goes on, we'll figure out how to do the science and engineering that will let us predict the weather precisely, as far in advance as we want. But Chaos Theory in general, and the Butterfly Effect in particular, tell us that it's actually mathematically impossible to predict the weather more than a few days in advance.

In fact, Chaos Theory was first conceptualized in the 1960s because of the difficulty in developing software models for weather forecasting.

What causes a hurricane? More prosaically, what causes a sunny day, a cloudy day, or a rainy day? What are the conditions that give rise to each of these weather patterns?

Attempts to develop computer models to address exactly that question ran into an impenetrable roadblock in the form of the following observation:

Suppose you have a computer program that forecasts the weather, based on inputs like air temperature, wind speed, barometric pressure, and so forth. Then you can run your program and get a forecast for the next few days.

Now suppose you rerun the program, but change the inputs only slightly. For example, if you initialized it the first time with a temperature of 39 degrees, then change the temperature to 39.001 degrees. Or change the wind speed from 2 mph to 1.9999 mph.

You might think that such a tiny change in initial conditions would not affect the final weather forecast, but in fact, if your weather forecasting program is realistic, then you'll find that even these tiny changes can have enormous changes in weather forecasts.

So that's why the above statement of the Butterfly Effect is technically incorrect. If a butterfly in China flaps its wings, that doesn't cause a hurricane; rather, it changes the initial conditions enough so that there might be an extra hurricane, or one less hurricane, or a later or earlier hurricane, or it may make a sunny day rainy or a rainy day sunny.

Let's restate the Butterfly Effect in a slightly different manner:

If a butterfly flaps its wings in China, it creates a chain reaction that can change the weather around the world, possibly even resulting in a hurricane in North America.

Here's another way of looking at it: Suppose you could make a second copy of the earth which was identical to the original except for one thing: In one earth, the Chinese butterfly flaps its wings, and in the other earth, the butterfly sits still.

Now, suppose you could watch both earths and see what happens.

What you'd see is that the two earths would not remain identical for long. Thanks to that one tiny initial difference (butterfly flapping wings versus sitting still), the weather on the two earths would quickly begin to differ. The tiny breeze caused by the butterfly in one world would move enough air molecules to make a small breeze somewhere to blow a very tiny bit faster, just enough faster to feed into a stronger breeze somewhere else which, in turn, causes clouds to move in one direction instead of another, which changes a sunny day to a cloudy day, or vice versa.

So the point is this: when the Chinese butterfly flaps its wings, then things change in an unpredictable way.

But is it really unpredictable? Can't a powerful computer compute exactly what would happen?

No, that's impossible, because the computer would have to be too big. True weather forecasting would require simulating the actions of every molecule on the earth, and no computer smaller than the earth itself could perform such a simulation.

There's another reason, too. Computers cannot do precise computations, but can only approximate such things as position and speed. These approximations

themselves amount to changes in initial conditions that would have the same explosive effect as the flapping of a butterfly's wings.

So precise weather forecasting is literally impossible, and even predicting the effect of a butterfly flapping its wings in China is also literally impossible.

Again: The butterfly flapping its wings doesn't cause a hurricane; it causes a tiny change in initial conditions which may or may not cause small or large weather changes which are entirely unpredictable.

4.3.2 Chaotic Behavior and the Double Pendulum

You might think that the reason that weather forecasting is chaotic is because it's so complex. After all, weather involves the entire earth.

So let's look at a much simpler example, a double pendulum. Spend a few minutes playing around with the double pendulum simulation[xxii] on the following web page: http://www.mathstat.dal.ca/~selinger/lagrange/doublependulum.html (This example requires that your browser support Java.)

As you play with the double pendulum, notice the following:

- Each time you restart the pendulum, it appears to work the same for about a second, but then it acts differently each time. In this case, the "butterfly" is tiny little differences in timings on your computer, each time you run the simulator. These tiny little differences multiply and grow, to become major differences.

- You can watch the pendulum all day, and it won't ever settle down to a repeating pattern. It always acts "chaotically," bouncing around every which way, and a different way each time around.

The double pendulum is a great example because you can actually see chaotic behavior in action. In the case of weather forecasting, you have no way of starting the earth over and over again on the same day to see different weather patterns develop each time, but with the double pendulum simulator, you can do exactly that.

Make sure that you get a feel for why the chaotic behavior double pendulum is important, because understanding that behavior, and applying your understanding, is crucial to understanding the Generational Dynamics forecasting methodology.

Here's a particular experiment you should try: Click on the "Parameters" button to open the control box. Notice the "Total energy (in J)" field reads 289.7. (In physics, a single unit of energy is 1 joule, and so this field indicates 289.7 joules.) Now go back to the moving pendulum, and click on the top center of the square. You'll see that this drags the inner pendulum to the top of the screen, and you'll see that it also changes the value of the total energy field. If you play around with clicking in the square at different times, you'll see that you can either reduce or substantially increase the total energy in the system, to as much as several thousand joules.

Now here's the experiment: Click at the right time so that you get the energy above 800 joules, and watch what happens to the double pendulum. You'll see that it exhibits its usual chaotic behavior at first, but then something very strange happens: After a while, it settles into a large, very non-chaotic circle.

The large circle configuration is call a "cyclical attractor." This exhibits a phenomenon of chaotic systems: That sometimes the elements of the system are "attracted" to an ordered pattern. This is an example of another phenomenon: That

sometimes, chaotic systems exhibit an ordered pattern described by such an attractor.

The "attractor" concept is important to our discussion, since later we're going to show that the Generational Dynamics cycles represent a cyclical attractor within the chaos of societal politics.

4.3.3 Linear and Non-linear Systems

Here are two more terms you should be familiar with: linear and non-linear systems.

Suppose a basketball is sitting on the rug on your floor, and suppose you push the ball lightly. Then the ball moves a few inches. Now suppose you push the ball hard. Then the ball moves a lot farther.

You and the ball form a "linear system," which means that a small push gets a small reaction, and a large push gets a large reaction. That's what you would expect, right?

But that's not what happens in the double pendulum. Even the tiniest of perturbations completely changes the behavior in a wild, unpredictable way. It's not a linear system.

Neither is the weather. A tiny butterfly's wings can result in major changes.

So a linear system is one in which the size of the reaction to a perturbation is proportional to the size of the perturbation; a non-linear system is one in which the size of the reaction to the perturbation is independent of the size of the perturbation.

A mathematical consequence of this distinction is that a non-linear system cannot be controlled by perturbations. In real-life, this means that political events cannot be controlled by politicians.

4.3.4 The Chaos of Day to Day Politics

Like weather events, political events are completely chaotic. Election polls are like weather forecasts — they're only good for a few days.

Almost anything has the potential to sway public opinion. A dumb remark by a politician, an affair or a long-forgotten sex scandal, an erratic husband or wife, an endorsement by an outsider, a drunken admission, even a change in the weather — any of these can turn the public for or against a politician or an issue.

Day to day political events are completely chaotic. A political forecast of almost any kind has less longevity than a weather forecast. And once you accept that, here's a consequence that you may not have thought of: The acts of politicians have little or no impact in the long run. How could they, if any political policy can be easily derailed by the smallest "butterfly"?

It's worth thinking about this for a while, because it's important. All the bitching and moaning about President Bush's policies and/or President Obama's policies is for naught, since their policies are for naught.

Before I ever heard of generational studies, even before 9/11, I saw a television interview with Supreme Court Chief Justice Rehnquist, and he said one thing so remarkable that I made a note of it. It was on July 4, 2001, and he was asked to describe which of his Court opinions would have the greatest effect on the country and history. He said (paraphrasing): "The opinions that I thought would be most

harmful haven't been as harmful as I thought; likewise, the opinions that I thought would be most beneficial haven't been as beneficial as I thought. So the opinions of the Supreme Court perhaps make much less of a difference than we'd like to think they do."

This relates to some important points. If Thomas Edison had never been born, does that mean we'd still be using candles today? No, of course not, because someone else would have invented the electric light bulb. If Martin Luther King had never been born, does that mean that the civil rights laws would never have passed? No, of course not. Someone else would have stepped up and led the fight for civil rights.

The same sort of thing is true for crisis wars. Julius Caesar may have started a brief and inconsequential civil war by crossing the Rubicon, but no one person could have started the highly emotional and genocidal civil war in Rwanda in 1994. Assassinations of one kind or another happen all the time, but no one could have known that one particular assassination in 1914 would have triggered World War I. The great crisis wars are huge pulses of energy that ripple through history like tidal waves (tsunamis).

As Leo Tolstoy said in *War and Peace*,

> *In historic events, the so-called great men are labels giving names to events, and like labels they have but the smallest connection with the event itself.*

Here's one more quote: These are Tony Blair's words when he addressed a joint session of Congress on July 17, 2003, explaining the need for the Iraqi war:

> *I know it's hard on America. And in some small corner of this vast country, in Nevada or Idaho, these places I've never been but always wanted to go, there's a guy getting on with his life, perfectly happily, minding his own business, saying to you the political leaders of this nation: Why me? Why us? Why America?*
>
> *And the only answer is: because destiny put you in this place in history, in this moment in time and the task is yours to do.*

In each case, the message is the same: Great events are driven by powerful historical forces. History may recognize a particular politician as the agent of change, but the great event will occur irrespective of anything that any politician does or does not do.

4.4   INTRODUCTION TO CHAOTIC ATTRACTORS

The discovery in the 1960s that weather forecasting more than a few days in advance is impossible, and always will be impossible, was a shock to mathematicians and scientists alike. That's because weather is a non-linear system, meaning that the tiniest perturbation (like the flapping of a butterfly's wing) can have wild, chaotic effects on the weather that would invalidate any forecasting attempt.

Not being able to forecast weather was bad enough, but they realized that the same conclusion applied to all sorts of other nonlinear systems, things as varied as a dripping faucet, the stock market, politics, gypsy moth populations, the flight of an airplane, and the movement of human heart muscles. If something as simple as the double pendulum (discussed above) was a nonlinear, chaotic system, then almost anything else could be.

As Chaos Theory was developed in the 1970s, a sister theory was born, Complex Systems theory. (Some people call it "Complexity Theory," but I reserve that name for the study of the complexity of computer algorithms.)

If the purpose of Chaos Theory is to find chaotic, nonlinear patterns throughout nature, then the purpose of Complex Systems theory is to bring order out of the chaos.

> "But in the 1970s a few scientists in the United States and Europe began to find a way through disorder. They were mathematicians, physicists, biologists, chemists, all seeking connections between different kinds of irregularity. Physiologists found a surprising order in the chaos that develops in the human heart, the prime cause of sudden, unexplained death. Ecologists explored the rise and fall of gypsy moth populations. Economists dug out old stock price data and tried a new kind of analysis. The insights that emerged led directly to the natural world — the shapes of clouds, the paths of lightning, the microscopic intertwining of blood vessels, the galactic clustering of stars.[xxiii]

The idea is this: Most chaotic systems of interest have many, many interacting objects, all of which act and interact in a chaotic manner. But suppose that you can step back, and look at the chaotic system at a distance. Very often you see that the innumerable chaotic objects, when viewed from that distance, form patterns that you're unable to see when you're looking at the objects up close.

Think of it this way: If you're scuba diving, and you're underwater, watching the ocean water swirl around you, then the movements of the water molecules around you are totally chaotic. But now, swim to the surface and climb into the boat, and you can see that all those tiny water molecules are forming gentle waves that move across the water's surface. How is that possible? How can a mass of individual water molecules, swirling in individual random, chaotic directions, possibly get organized enough to form waves? That's the kind of question that Complex Systems theory seeks to answer.

And the mathematical answer is called "attractors." You start with thousands or millions or billions of individual air molecules or water molecules or other objects. Each of the individual objects acts independently in a chaotic matter. However, even though the tiny individual objects act independently, they're still "attracted" to act in a certain way that gives rise to recognizable patterns, such as the waves in the ocean.

The concept of attractors has solved many problems in physics and mathematics in the last few decades.

If you wanted to apply precise physical formulas to individual air or water molecules, you'd soon be lost. In fact, it's been long known that the "three body problem" cannot be solved in a meaningful, closed manner. That is, physicists can give you formulas for two interacting bodies, such as the motion of the earth around the sun. But as soon as you have three objects interacting with each other, then physicists can't give you an answer any more. So hey, if you can't give formulas for three interacting objects, then you won't get answers for millions or billions of interacting objects.

But the mathematics of Complex Systems and attractors solves many of the problems. You can't get formulas for each of the individual air or water molecules,

but you can get formulas for the attractors, which describe how the system works as a whole.

4.4.1   Attractors in Generational Systems

As we discussed previously, any political system is non-linear and chaotic. Any small "perturbation," can change the results of an election, or of public opinion, within a few days. When pundits say, "A week is an eternity in politics," they're saying that politics is a non-linear system.

From the point of view of Chaos Theory, the principal discovery of Generational Dynamics is that the generational cycle is an attractor for the chaos of political events.

It's more like the ocean wave example, where you can zoom in and see individual water molecules zooming around chaotically, but then zoom out and see them form a cyclical attractor pattern of ocean waves.

When you zoom into the political system, all you see are individuals making individual political decisions every minute of every day. If a politician says something dumb, then the system is perturbed, and people's politics change. If there's an "event," such as a major fire, an earthquake, a terrorist attack, a crime, or even a love affair, how a politician reacts can change many political views.

But the generational cycle is not affected by these perturbations.

During a generational Awakening era, a country or society is typically "attracted away from" war. This is like America in the 1960s, where young people, who knew nothing of the horrors of World War II, rioted and demonstrated against the Vietnam war.

During a generational Crisis era, a country or society is "attracted toward" war. Thus, in 2003, Americans overwhelmingly favored the Iraq war, though they turned against it when it started going badly. Even so, it's not the young college students who have objected to the Iraq war; it's the old Boomers who led the protests — the exact same people who were protesting in the 1960s.

5 SUMMARY OF THE GENERATIONAL DYNAMICS FORECASTING METHODOLOGY

The Generational Dynamics forecasting methodology requires a great deal of historical analysis of any country's situation, and uses a number of tools in an interdisciplinary approach.There is no single forecasting method. Rather, the forecasting methodology is a set of tools united by a common theme: Identify a long-term trend, relate current events to the long-term trend, and infer a forecasting result with a very high probability of being correct.

There is a generational component to this methodology because people are highly resistant to believing the relevance of any events that occurred before they were born, or even before their 20th birthday. Thus, if someone is discussing the current financial situation, you can usually guess what generation he's in by how far back his historical analysis goes. Thus, if a financial analyst mentions the recession of 1961 or 1974, then he's probably a Boomer; if he only mentions the recession of 1980–82 or 1990–91, then he's probably a Generation-Xer; and if he only refers to the recession of 2001, then he's probably a young Millennial.

It's this refusal to believe the relevance of pre-birth events that means that people don't learn anything from history. For example, from the point of view of Generational Dynamics, such events as the Tulipomania crash of 1637 and the South Sea Bubble crash of 1720 are extremely relevant to today, but until recently almost no one even believed that the 1929 Wall Street crash was relevant to today.

However, the relevance of these events to today is not in the technology that was used or the details of the transactions; those things obviously change. The irrelevance is "the insanity of crowds," how entire populations panic and do stupid things that lead to financial catastrophes or genocidal wars.

> *"Insanity in individuals is something rare – but in groups, parties, nations and epochs, it is the rule." — Friedrich Nietzsche*

One way to think of Generational Dynamics forecasting is that it predicts the most likely causes, kinds and times of generational panic, although there's a lot more to it than that.

5.1 LONG-TERM AND SHORT-TERM FORECASTING

There are many kinds of "trends" that can be examined by generational forecasting. In all cases, the trend data has to be available for at least 100 years, and preferably much longer.

In the financial arena, most of the trends are numeric trends, and in many ways they're the easiest to analyze.

For geopolitical events, such as wars, the trend analysis is more informal, using a variety of tools. We'll discuss these tools in this article.

In all cases, extrapolating the trend forward from the present time into the future usually produces a prediction or forecast that's 100% certain (a war, a stock market crash), but provides no clue as to what the scenario will be for arriving at that conclusion. Furthermore, the timing is usually within a window that's years and sometimes decades long.

We refer to this as "long-term forecasting," because it provides a certain forecast, but with a very long time window.

Once a long-term forecast is established, we match up day-to-day news events to the long-term forecast to narrow the window and establish a scenario. This leads to probabilistic "short-term forecasts." These forecasts have a much shorter time window, usually months or a couple of years, and have an 80-90% probability of correctness.

I first began developing this methodology in 2003, and I've accomplished things that, ten years ago, I would have insisted were mathematically impossible. I've been working on this obsessively now for six years, and it's a large complex subject. If I were to teach a college course on it, it would take a couple of semesters to go through all the basics, and then there would be all kinds of possibilities for further research at the undergraduate or graduate level. It's also an interdisciplinary subject, involving history, mathematics, economics, macroeconomics, system dynamics, chaos theory, complexity theory, and even the theory of evolution. I just wish that the news weren't so bad.

(See the appendix listing the major Generational Dynamics predictions since 2003.)

5.2   FINANCIAL AND TECHNOLOGICAL FORECASTING

Financial and technological trends are usually numeric, usually exhibiting linearity or exponential growth.

Here I'll just give one example from my August, 2007, article, "How to compute the 'real value' of the stock market."[xxiv]

The following graph shows the S&P 500 Price/Earnings index for 1871–2007. For each company, it takes the stock price and divides by the company's earnings for the previous year per share of stock. The term "P/E1" means "price divided by previous year's earnings."

S&P 500 Price/Earnings Ratio (P/E1) 1871-2007

P/E1 Average (1871-1995): 13.91 (blue line)
P/E1 Average (1995-2007): 24.98
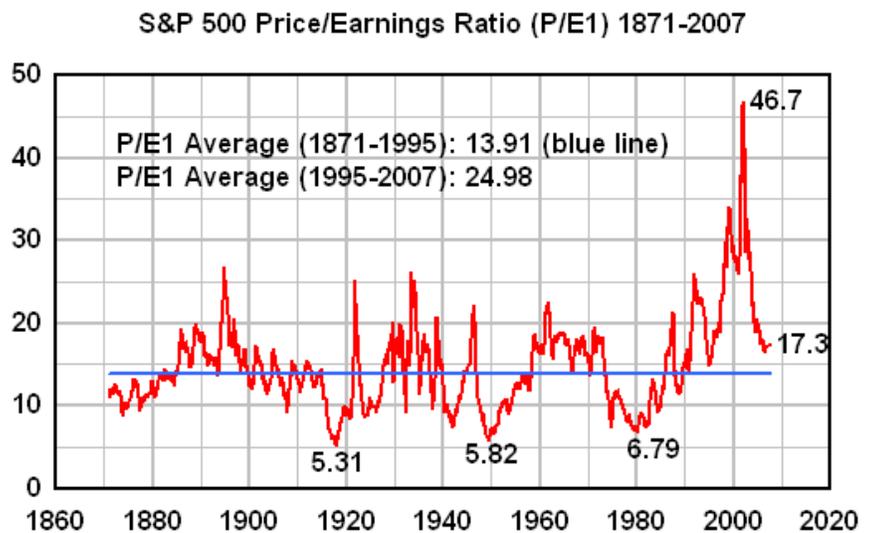
The blue line is the trend line — in this case, it's the average of the P/E values from 1871–1995, or around 14. From 1995 to 2007, it's averaged around 25, indicating a huge bubble. Since 2007, it's increased even further, and is currently around 60. [xxv]

By the Law of Mean Reversion, the price/earnings ratio will fall well below 10 for a dozen years or so. You can see that it's poised to fall quickly in the near future, leading to a stock market crash.

The Law of Mean Reversion is based on an assumption: That when a data series establishes a long-term average value, then it will maintain that average in the future.

In this case, the assumption is that if the P/E ratio average was 14 for over a century, then it will continue to be 14 in the future.

For someone who claims that this assumption is wrong, the burden of proof is on him to explain why. Just saying "We have better technology," or "We're so much smarter than before," or "It's different this time" is not sufficient.

Even if an argument can be made that the average should be higher — say 15 or even 16 — and this would be a highly dubious argument — the Law of Mean Reversion would still apply, since the average was 25 since 1995.

Furthermore, if you look at the above graph, you can see that P/E ratios have fallen to the 5-6 level several times in the last century, most recently in 1982. In fact, if you look at that above graph, you'll see that the bottoms, labeled with 5.31, 5.82 and 6.79 on the graph, occurred at roughly 31-year intervals. The next bottom would thus be in 2012, if this pattern continues.

From the point of view of Generational Dynamics, the conclusions drawn from the Law of Mean Reversion in this case are almost mathematically certain. These are the kinds of forecasts and predictions that I've been posting on my web site since 2003, and the results have been overwhelmingly successful.

When I describe these predictions in an article on my web site, a problem arises in specifying time frames. It's always been a problem to decide on effective wording. I experimented with different types of wording, and usually settle on something like, "The exact time can't be predicted. It might happen next week, next month, next year or thereafter, but it will happen sooner rather than later."

5.3   GEOPOLITICAL FORECASTING — EXAMPLE

For geopolitical trends, including many of the trends that are at the heart of generational forecasting, there are no easy numeric measurements, and you have to use informal methods based on an extensive historical analysis. This is much more complex than financial forecasting.

As an example, let's apply generational forecasting principles to the US and Japan, starting from the end of WW II in 1945.

If we had understood generational theory in 1945, then we could have predicted that the US and Japan would have to go through some sort of new crisis some time during the period 1995 to 2025. We could not have predicted whether the US would be enemies in a new war, or allies in a new war, or whether they would even be at war with each other.

In fact, at the end of the 1940s, the expectation was a war with Communism — Russia and China. This concern led to non-crisis wars in Korea and Vietnam. As the decades passed, it became increasingly clear that the US and Japan were allies, and that the possibility of a new war against each other was increasingly unlikely.

On the other hand, during the 60s, 70s and 80s, the possibility of war with the Soviet Union or China loomed large.

Skip ahead to the 2000s and the post-9/11 world.

I doubt that anyone over the age of 40 would doubt that the mood today is far more tense and anxious than it was in the 1980s and 1990s. Although many people attribute the change to politicians, generational theory shows that it always happens when the survivors of the previous crisis war disappear (retire or die), all at once, taking with them the wisdom that they learned in surviving that war.

The younger generations have no personal memory of World War II, and its horrors, and when something goes wrong, they often overreact.

It's easy to imagine a situation where the 9/11 attacks might have led to a world war. Since al-Qaeda was being protected by the Taliban in Afghanistan, we went to war with Afghanistan. But suppose al-Qaeda had been protected by a group of radical Islamist Uighurs in northwest China? Then things might be very different today.

Today we know a lot more about the coming crisis that we did in 1945. We know that we won't be fighting Japan. Or Russia. It looks like we'll be fighting China. And a lot of radical Muslims. And the time frame is sure to be much sooner than 2025.

There's a great deal that we can predict about the next few years, as I have done in the hundreds of articles on my web site. A lot of analysis, especially historical analysis, is required to make these predictions, and this article describes some of it.

5.4   PÓLYA'S URN

Pólya's Urn[xxvi] is not so much a tool as a conceptual model for understanding how to choose among possible alternative forecasts. As a mathematical model, it's widely used in statistical applications. In social sciences, it explains (or models) why groups sometimes act in certain ways, and sometimes others.

In the example of the last section, generational theory experts in 1945 could have predicted a distant crisis with few details. As time goes on, it's possible to use news events to narrow the choices and provide the details. Pólya's Urn provides a conceptual model for doing that.

Pólya's Urn starts out with one red ball and one green ball.

(In more complex situations, there may be more than one ball of each color, or they may be more than two colors.)

A "move" consists of removing one ball at random, and then replacing it with two balls of the same color. When the Urn contains 1000 balls, the game stops.

Pólya's Urn
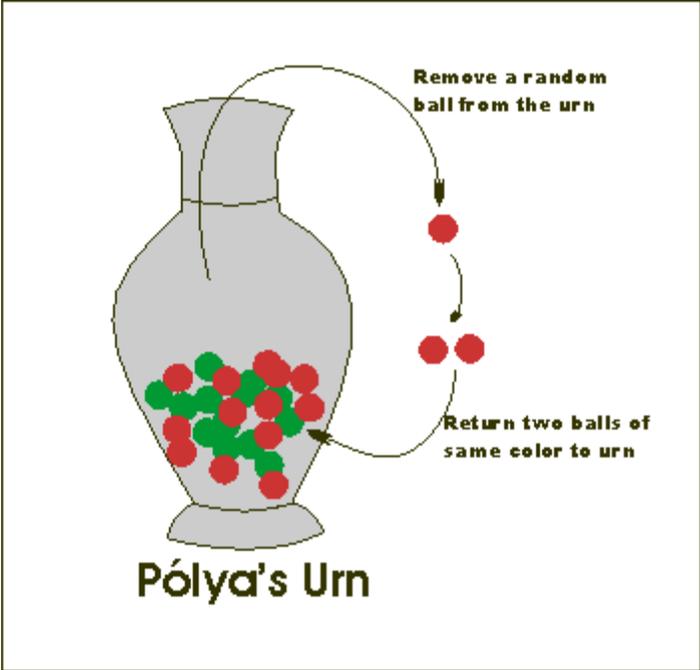
Example: Suppose the urn starts out with one ball of each color. Suppose the first move selects a green ball and replaces it with two green balls. At that point, the urn contains two green balls and one red ball. On the next move, there is a 67% chance that the ball selected will be green, and each time a green ball is selected, the probability of a green ball on the next turn is even higher.

Thus, if a green ball is chosen on the first move, then there may quickly be so many green balls that a red ball is rarely selected. Thus, the color of the ball selected on the FIRST move may well determine the final outcome when the ball contains 1000 balls.

The analogy is that the "destiny" of two countries after a crisis war may be determined by the first few acts that each side performs.

For example, after the Japanese surrender in 1945, we proceeded to provide aid and help to the Japanese, much to their surprise. This was a lot of "green balls," right at the beginning.

Suppose, instead, that a few renegade American soldiers had conducted hate crimes and acts of terrorism in Japan. Or suppose that a renegade Japanese soldier had shot and killed General Douglas MacArthur. Those would have been "red balls," and they may have multiplied, and we might be close to another war with Japan right now.

So Pólya's Urn doesn't predict what's going to happen in sixty years, but it does provide a model that helps you understand it, and what you can do about it.

For example, in the case of the renegade soldiers just given, you have to find a way to toss a whole bunch of green balls into the urn to offset the red balls that the renegade soldiers provided. That might mean extra aid or money or whatever.

Here's another example: Some Chinese claim that North America would be Chinese if a Chinese sailors had "discovered" America, rather than a Europeans.

That may or may not be true. If a Chinese sailors had landed in America first (one red ball), China would have had to follow up with aggressive program of exploitation (more red balls), in the same way that Portugal and other European countries exploited North America (green balls). Without that, there would still have been a preponderance of "green balls," and North America would still have been mostly ethnically European.

Another example: Ever since Yasser Arafat died, there was a brief period when the "peace process" seemed to be working, especially when Mahmoud Abbas was elected Palestinian President. Since that time, things have gotten worse almost every day.

On the web site I explained this in terms of chaotic "attractors" (from Chaos Theory). Day to day political events are chaotic events that fall like snowflakes in random ways. But just as millions of snowflakes get "attracted" to large snow drifts, millions of individual political events get attracted to the impending Mideast war. War is a "chaotic attractor" at this time, 60 years after the end of the 1940s genocidal war between Arabs and Jews.

The theoretical concept of "attractor" comes true on a day to day basis. It's been happening every since Yasser Arafat died, and has evidently accelerated ever since Ariel Sharon became incapacitated.

Look at the day to day political events as they've occurred since Arafat died. Pick almost any day and look at the headlines for that day, and you'll see that it most likely moves the Mideast in the direction of war. There are a few exceptions of course, like the period when Mahmoud Abbas was elected and took office, and hopes were raised at that time.

But those brief intervals are like a heat wave in New York City in November — just because the weather gets warm for a few days doesn't mean that winter isn't coming. Once the heat wave is over, the weather starts getting much colder again. Similarly, there are brief periods when things seem to get better, but they pass quickly, and then political events move back towards war.

That's what "attractor" means in Chaos Theory. It doesn't mean that every political event brings the Mideast closer to war; it means that political events float around in all directions, at random, but most of them, not necessarily all of them, are attracted to Mideast war.

So now, another way of looking at this whole phenomenon is with Pólya's Urn. After many years, the Urn is filled with "red balls" (political events that move the Mideast toward war), with few "green balls" (political events that move the Mideast away from war, such as the 1994 Oslo treaty, or the 2003 Mideast Roadmap to Peace). Today there are so many red balls in the Urn that almost everything turns out badly, and the region moves closely to war.

Making a probabilistic prediction using a "Pólya's Urn" technique requires an analysis of news events over a period of years, and mentally estimating the number of red balls and green balls. It's very rare to find a situation where it isn't completely obvious whether red or green balls predominate. This technique has worked very well.

We'll close this section with one more example: Iran. As I've written many times, Iran is almost a schizophrenic nation.[xxvii] It's in a generational Awakening era, with a

population that's mostly pro-American and a leadership that's virulently anti-American. In this case, the Pólya's Urn analysis doesn't give you a clear result, because there are too many balls of both colors.

5.5   GENERATIONAL ERAS AND ARCHETYPES

In this discussion, we wish to focus on how generational flow creates a feedback loop, generating historical cycles. The historical feedback loop is illustrated by the following "diagonal flow" diagram:

GD Generational Diagonal

	Crisis Era	Recovery (Outer-driven) Era	Awakening Era	Unraveling (Inner-driven) Era
ELDERHOOD	PROPHET (Idealist) visionary	NOMAD (Reactive) reclusive (Austerity)	HERO (Civic) busy	ARTIST (Adaptive) sensitive
MIDLIFE	NOMAD (Reactive) pragmatic	HERO (Civic) powerful (Austerity)	ARTIST (Adaptive) indecisive	PROPHET (Idealist) moralistic
RISING ADULTHOOD	HERO (Civic) heroic	ARTIST (Adaptive) conformist	PROPHET (Idealist) narcissitic	NOMAD (Reactive) alienated
YOUTH	ARTIST (Adaptive) suffocated	PROPHET (Idealist) indulged (High)	NOMAD (Reactive) criticized	HERO (Civic) protected

Time ⟶

The feedback loop is initially launched by a special kind of war called a "crisis war." These are the worst, most genocidal kinds of wars, when the value of an individual human life becomes so close to zero that almost any means is used to win the war. America has had two such wars since the nation's founding: The Civil War, in which Northern General Sherman marched through the South, and conducted the world's first "scorched earth" war campaign, burning buildings and crops to the ground; and World War II, in which we firebombed Dresden and Tokyo, killing millions of civilians, and dropped nuclear weapons on two other Japanese cities. (I'm not blaming America for this, only stating that it occurred.)

The Crisis Era launches three following "eras," each approximately 20 years long — Recovery, Awakening and Unraveling. There are four generations of people, designated as Heroes, Artists, Prophets and Nomads, according to the generation in which they're born. Strauss and Howe showed, through study of contemporary diaries and histories of six centuries of Anglo-American history, that people of different generational archetypes are quite dissimilar, but that people in the same archetype, even when they lived centuries apart, are remarkably similar in attitudes towards everything from gender issues to political activism to war.

Briefly, the feedback loop works as follows: the survivors of the crisis war (Civil War, WW II) are so traumatized that they spend the rest of their lives making sure that nothing like that ever happens again. During the Recovery Period that follows the

crisis war, they implement austere rules to guarantee that result. This period is an "Austerity era" to the survivors of the war, but it's a "High era" to those born after the war, the Prophet generation (our Baby Boomer generation), who have no personal memory of the war, and who rebel against the austere rules. This results in a political conflict and a "generation gap" in the Awakening Era (our 1960s–70s), leading to an Unraveling Era (our 1980s–90s), during which all the austere rules completely unravel. After that, the Prophet generation leads the society into a new crisis war.

It's not specific events or specific times that determine the generational era. What Strauss and Howe showed was that, no matter what the century, each Anglo-American since the 1400s was characterized by a specific public mood:

- A Recovery era is characterized by the public's need for order and stability.

- An Awakening era is characterized by a generational conflict and social upheaval.

- An Unraveling era is characterized by institutional and societal decay.

- A Crisis era is characterized by social unification, institutional renewal, and the climax tendencies described above.

Generational Dynamics has shown that these same characterizations apply to all countries at all times in history.

5.6   DETERMINING GENERATIONAL ERAS AND CRISIS WARS

Determining whether a war is a crisis war or non-crisis war, and determining whether a country is in a Recovery, Awakening, Unraveling or Crisis era is the heart of generational theory. People frequently ask me for some kind of numerical scoring method for making these determinations, but that's not possible. In particular, the number of war deaths does not determine whether a war is a crisis war, although it serves as one of many indicators.

I've now evaluated hundreds of wars over the seven years I've been working on this project. Some wars are easy to evaluate — for example, the 1994 Rwanda genocide is a pretty easy call as a genocidal crisis war.

But most evaluations require a study of the country's history, to get a feel for how they got where they are. Actually, it's a lot more than that because you usually have to figure out the histories of the various ethnic and religious groups.

When I first started out in 2002, the first war I had a lot of trouble with was the War of the Spanish Succession (1701–09). I think I must have spent 150–200 hours on that war, spending hours at the bookstore reading various histories, etc. Today it would take me a lot less time, since I know what to look for, but in 2002 the evaluations were completely new to me.

And you can't understand a country or society just by evaluating its crisis wars. You really can't understand a Crisis era unless you also understand the Recovery, Awakening and Unraveling eras, and how they create a constellation of generations that bring about the next crisis war. Generational theory is potentially a major field of study, and a simple numeric measure doesn't make sense.

You can't understand the mood of the American people today unless you understand the Revolutionary War, the Civil war, and their effects on attitudes towards freedom.

You can't understand the relationships between England, Scotland and France unless you understand the War of the Spanish Succession and the Napoleonic Wars.

You can't understand Iraq today unless you understand the 1920 Great Iraqi Revolution, and its aftermath, as well as the 1980s Iran/Iraq war. And yet, I doubt that even Boomer analysts, politicians, journalists and policy makers in Washington know anything at all about these wars, and most younger people (Gen-Xers and Millennials) would consider knowing anything about them to be worse than a waste of time.

This is a major contribution that Generational Dynamics can make to public policy. Generational theory provides a structured methodology and framework for analyzing a country's history, and showing how it applies to today's world. This methodology can provide very useful guidance to international corporations and government agencies trying to decide whether to do business in a country, or whether to start a war.

5.6.1   Guidelines

With that introduction, here's a bare bones outline of the guidelines that I use in determining generational eras (or turnings). These guidelines seem to work in all the cases I've seen.It's important to remember, when reading these guidelines, that generational eras are determined not by specific events, but by the "mood" of the great masses of people.

It's worthwhile pointing out that there are two distinct methods for determining where a particular country is at a particular time: (1) By number of years since the last crisis war; or (2) By turning-specific events. In practice, it's easiest to use the two methods together, especially for historical periods in countries where little information is available.

In Generational Dynamics, here are some guidelines for estimating turnings and turning boundaries:

- The Recovery/Austerity/High period (first turning) begins just after the smoke clears from the explosive climax of the crisis war. It's "Austerity" for the survivors, who are still traumatized and will devote their lives to keep it from happening again, and it's a "High" for those in the new the Prophet generation, born right after the war, who feel contempt for the austere rules.

- The Awakening period (second turning) begins 15–18 years later, when the Prophets begin to make themselves felt. An Awakening can be identified by "Awakening-type" events that are caused by a political struggle between the war survivors and the Prophet generation. Typical Awakening-type events are: Riots and demonstrations for individual rights; greater prominence for gender issues; pro-war or anti-war demonstrations — whichever is the opposite of what their parents prescribe. If there is violence in this period, it's "low-level violence," punished by police action in specific cases.

- "Awakening crisis": The Awakening seems almost always to climax with an event that defines a winner between the older and younger generations. This is

sometimes called a "bloodless coup" or a "velvet revolution" or an "internal revolution." Examples where the younger generation won are: resignation of Richard Nixon; replacement of Second Reich with Weimar Republic. Example where the older generation won: Tiananmen Square massacre. I believe that the victory of the older generation is a bad thing for a country, and foreshadows a civil war in the crisis period.

- The transition from Awakening to Unraveling (third turning) to Crisis (fourth turning) is a gradual one, without clear boundaries. Basically, the austere rules set down in the first turning begin to unravel almost as soon as they're enunciated. The Unraveling officially begins 40 years after the end of the last crisis war. The "Awakening crisis," which can occur before or after the Unraveling period begins, is a much more important marker than the Unraveling era itself. After the Awakening crisis, the austere rules that were set down during the first turning really begin to unravel, and total craziness sets in. Typical unraveling type events are: willingness to compromise to the point of appeasement; economic bubble.

- The Crisis Era (fourth turning) is in two parts that have to be separated: before and after the regeneracy (where the real crisis war begins).

- The Crisis Era – Part I — the "post-unraveling period." This begins when the survivors of the last crisis war all disappear (retire or die), all at the same time. This is about 55–60 years after the end of the last crisis war. This would be amended if the crisis war begins earlier than 55 years after. Typical Crisis Era - Part I events are immigration laws, signs of xenophobia including maltreatment of foreigners, emphasis on stereotypical gender roles.

- The Crisis Era – Part II — begins with the regeneracy, when the new crisis era really begins. The "regeneracy" is a series of events (think of the 9/11 attack) that unify the people, and "regenerate" civic unity for the first time since the end of the last Crisis War. Typical Crisis Era – Part II events are: financial crisis, total war.

- A fifth turning occurs if the Crisis Era goes by with no crisis war. This is a distinctly different era from the others. Typical fifth turning events today: Suicide bombers.

- From the point of view of determining long-term (multi-saecular) generational timelines, the only important date is the date on which the first turning begins.

- It's impossible to enter a fifth turning except from a fourth; or a fourth turning except from a third; or a third turning except from a second; or a second turning except from a first. Thus an Awakening era country that experiences an unexpected genocidal invasion will still fight the war as an Awakening war; the country will NOT transition into a Crisis era.

- However, it is possible to enter a first turning from another turning when a massive population relocation occurs, destroying the generational relationships that existed prior to the relocation. This sometimes happens to a country with a huge unexpected invasion by another country. This is called a "first turning reset," and it's quite rare.

Every society and nation experiences a genocidal crisis war every 70–90 years, with a new one starting just around the time that the generations of survivors of the

previous one all disappear (retire or die), all at once. This is a basic component of generational theory.

5.6.2 Peace and Prosperity

An interesting question is this: How can a government lead the people to peace and prosperity in the 50–70 years between such crisis wars? In other words, if you have to have a miserable 20-year crisis era out of roughly every 80 years, then how, at least, can you make the remaining 60 years as pleasant as possible?

Research indicates that the key to this question is the nature of the crisis war itself. In particular, if a country's crisis war is a civil war, then the government will be extremely oppressive in the decades that follow; but if the country's crisis war is against an external foe, then the chances are that the following governing style will be more open and free.

That rule isn't ironclad, of course. But when exceptions exist, it seems that they're determined within the first few years after the crisis war ends. Thus, America's civil war ended with a relatively generous Reconstruction period, while China's civil war ended with the split with Formosa (Taiwan).

England's civil war is interesting — Oliver Cromwell held the country together until the monarchy could be restored. Only Scotland was left out in the cold, and that issue was settled during the following crisis war, the War of the Spanish Succession.

So when evaluating a country's generational timeline, look at the 2–3 years that follow the end of a crisis war, and that will set the pattern for how the country is governed for the next six decades or so. Once the pattern is set, it will never change, until the next generational crisis war.

5.7 FALSE PANICS AND THE 58 YEAR HYPOTHESIS

Panics and mass insanity are the stuff of history. There's no other way to describe the South's attack on Fort Sumter, or Japan's attack on Pearl Harbor. In each case, the attacker had zero chance of winning the war, but the state of denial was so massive that each went ahead.

Mass insanity also describes the lead-up to the current financial crisis, characterized by ordinary people taking "liar loan" mortgages that they had zero chance of repaying, and investment bankers who repackaged liar loans into structured securities that had zero chance of paying off as promised.

The other side of mass insanity is panic — the panic that occurs when the mass insanity is understood.

Generational Dynamics distinguishes between two kinds of panics: Real panics are based on real concerns, like the panic of 1929 that occurred after the massive 1920s stock market bubble. False panics are based on anxiety and fear, but are not based on real concerns, such as the "false panic of 1987" in the stock market, at a time when the stock market was actually underpriced.

It's worth noting at the outset that whether a panic is "false" or "real" may not be known, except in hindsight. The most prominent example of recent years was the 2003 ground invasion of Iraq, which occurred because of massive nationwide panic over weapons of mass destruction. It turned out to be a "false panic," because no

such weapons were found; if they had been found, then it might well have been a "real panic."

Generational Dynamics research shows that false panics almost always occur exactly 58 years after a real catastrophe. Many real panics also occur 58 years after a catastrophe as well. This has led to the "58 year hypothesis," which is now supported by many examples.

5.7.1   Intuitive Explanation of 58 Year Hypothesis

Unless you've been studying generational theory for a while, this hypothesis it almost seems fantastical. So instead of simply stating it, I'm going to try to present it in a way that (I hope) will be credible to most readers. This is in the form of a thought experiment, a mental challenge.

First, suppose that you're a child, between 5 and 10 years old. You're living a happy life, playing with your trucks and dolls and your playmates, learning to read, write and compute percentages.

You have a happy, idyllic life, with nice parents, living in a nice house. Everyone is happy. You're happy, your little friends are happy. Your parents are happy. This is the way life is supposed to be — because you've never seen it any other way. Remember, you're only 5 to 10 years old.

Then something horrible happens — a national event that's so terrible and so unexpected that it changes your life completely. It causes deaths around you or starvation around you. Your parents talk about it all the time. Your teachers talk about it all the time. It's an event that's SO TRAUMATIC to you that you will remember it vividly for the rest of your life. You'll even have nightmares about it for decades. It affects everything and all your relationships for all time.

And not just you. This is an important point: it's not just you. EVERY person around your age goes through the same trauma. It's a national event, and so EVERY child was affected by it in the same way, and EVERYBODY in that age group suffers the same trauma throughout their lives.

5.7.2   Examples

What are examples of these horrible events? We'll consider four of them. In each case, imagine that you're a child experiencing these:

1. The Spanish flu epidemic of 1918 that killed tens of millions of people. Imagine that you're a child, and that some of your friends and perhaps people in your family are killed.

2. The stock market crash of 1929, leading to the Great Depression and the horrors of massive unemployment, massive bankruptcies, massive homelessness and massive starvation, perhaps affecting your own family.

3. The genocidal war between Jews and Arabs in Palestine in 1948. For this example, we'll assume that you're a young Jewish child, 5 to 10 years old, and that you experienced the massive deaths and destruction all around you at that time.

4. The use of nuclear weapons on Hiroshima and Nagasaki in 1945. Not exactly a traumatic event for you (unless you're Japanese), but in the context of the horrors of WW II, enough to cause you to fear nuclear weapons for the rest of your life.

So now let's go back. You're a young child, 5 to 10 years old, when something so horrible happens that it traumatizes you for life. You never forget it, and you never want it to happen again.

And so, you go through life, from one adventure to another, getting older and older. And so do all the other people who were kids at the same time that you were.

There's one more characteristic of the traumatic event that we have to mention. It's a commonly used phrase in generational theory. The traumatic event must have been one that was "foreseeable but poorly foreseen."

This means that there will be "lessons learned" for the survivors of the event. As you go through your life, you take steps to apply these lessons, so that the same kind of event will never happen again. All the people in your age group will feel the same, and as long as your generation is in control of society, you will always feel confident that the traumatic event will never happen again.

Now let's move ahead to the time 58 years after the traumatic event. When the original event occurred, you were 5 to 10 years old. Now, 58 years later, you're 63–68 years old.

Something strange happens. You have conversations with other people around the same age, in your generation. That might include your wife, or your pals on the golf range or board room. But you really begin to wonder: Can it happen again?

There's the realization that all the people younger than you and your friends don't even care. They don't think about it at all. They're oblivious to the danger. They were born after it happened, or were too young to know what was going on. It's your group of 63–68 year olds that even realize that there's a danger, and can even do anything about it; younger people don't.

This is when panic sets in. Something happens to make you fear that the event is going to happen again. The same anxiety grips all the other 63–68 year olds across the country.

Maybe the anxiety is well-founded, maybe it isn't, but the people in your age group panic, and the panic spreads to younger people who are influenced by your concerns.

That's the 58-year hypothesis: That 58 years after a traumatic national event such as we've described, the 63–68 year olds, fearing a recurrence, cause a panic to occur. If the danger isn't real, then we refer to it as a "false panic." Whether or not a panic is "false" may not be known for several years, until the danger can be fully analyzed.

Now let's return to each of the four examples above, and look at what happened in each case, 58 years later:

1. The Spanish Flu epidemic occurred in 1918. In 1976, 58 years later, the "swine flu" panic occurred. The public became hysterical over the possibility of a new flu pandemic. Responding to public demands, the government prepared millions of doses of swine flu vaccine. The pandemic amounted to nothing, and the whole thing was a political fiasco.

2. The stock market crash occurred in 1929. In 1987, 58 years later, the "false panic of 1987" occurred. The market fell 25% in one day, but recovered quickly, because the market was underpriced at that time.

3. The genocidal Jewish/Arab war occurred in 1948. In 2006, 58 years later, the kidnapping of two Israeli soldiers near the Lebanon border caused the Israelis to panic and launch the war against Hizbollah within four hours, with no plan and no objectives.

4. America used weapons of mass destruction on Hiroshima and Nagasaki in 1945, bringing WW II to an immediate end, and causing widespread fear that weapons of mass destruction would one day be used on Americans. In 2003, 58 years later, Americans panicked over weapons of mass destruction in Iraq, and launched a ground invasion.

Today, the younger generations have no fear of weapons of mass destruction, and have turned against the war.

Most people, including myself, have assumed that the 2003 ground invasion of Iraq was triggered by 9/11. The 58-year hypothesis provides an alternate explanation, indicating that it would have occurred anyway, even if the 9/11 attacks hadn't occurred.

The 58 year hypothesis can't be understood unless you can go into the minds of a specific set of people — the 63–68 year olds who experienced a national disaster in their youth. Anyone younger would have no emotional connection to the event, other than dry historical facts and a contagious sense of panic urged by their elders.

It's still a hypothesis, although the body of evidence supporting it in the form of additional examples is growing. I now have almost a dozen solid examples.

For college students who are interested in historical research, there's plenty to be done here — determining additional examples.

5.7.3 Methodological Warning
However, I have to indicate a HUGE METHODOLOGICAL WARNING: Beware of cherry-picking.

Take the first example above — the 1918 Spanish Flu epidemic causing the false swine flu panic in 1976. That's 58 years later, so it appears to support the hypothesis — but more has to be proven.

Suppose that false flu panics happened in other years, say 1960, 1965, 1971, 1976, 1981 and 1985. They you can't just pick the 1976 date because it appears 58 years later, and claim that it supports the hypothesis, because it doesn't in that case. You can't ignore similar cases in other years. You can't "cherry pick" the years and events that make the hypothesis work.

In this case, there were no such other false flu panics. The only major flu fiasco of this kind that occurred in the last century, as far as I know, was the swine flu panic of 1976. Since there are no other similar dates around, it's fair to claim that you're not cherry-picking, and the 1976 date provides genuine support for the 58-year hypothesis.

Incidentally, as of this writing in early 2009, there's a great deal of concern about a swine flu pandemic this year. But there's almost no panic, in sharp contrast to the massive panic that occurred in 1976.

Similarly, there was no other false stock market panic like the false panic of 1987, and there was no other panicked war like Israel's attack on Hizbollah in 2006, and so that isn't cherry picking either. (In the latter case, you'd have to do more research to verify that other Israeli wars were much better planned than the 2006 war, something that few people would doubt anyway.)

With regard to the 2003 ground invasion of Iraq, were there similar events in other years? The Afghan invasion had nothing to do with WMDs. Neither did the original Iraq war in 1991.

The only previous war that appears to be similar was the 1962 Cuban missile crisis. That crisis was based on a panic that was remarkably similar to the panic that led to the 2003 Iraq invasion. The previous Bay of Pigs disaster had been based on faulty intelligence from the CIA, and the Cuban missiles probably could not even have reached American soil at that time.

However, the Cuban missile crisis occurred 41 years prior to the 2003 invasion of Iraq, and those events were far enough apart so that there's really no danger of cherry-picking.

The 58-year hypothesis, if it can be verified, adds a very powerful tool to the Generational Dynamics forecasting toolbox. It's particularly interesting that it can be applied to explain the ground invasion of Iraq.

5.7.4   Lengths of Periods Between Crisis Wars

There's also an interesting set of data that provide statistical support for the 58 year hypothesis.

The table below shows the length of time from the end of one crisis war to the beginning of the next, based on an analysis of over 100 crisis wars around the world, throughout history.

Length Of Inter-Crisis Period		
# Years	**Fraction of Total**	**Turning**
0–40	0%	1T, 2T
41–49	11%	first half of 3T
50–59	33%	second half of 3T
60–69	25%	first half of 4T
70–79	16%	second half of 4T
80–89	4%	fifth turning
90–99	6%	
100–117	5%	

As you can see from this table, there's a fair amount of variation in the length of time between crisis wars. However, there are NO crisis wars during the first and second turning (Recovery and Awakening eras), simply because there are too many survivors of the last crisis war, and they will not tolerate their kids making the same stupid mistakes that they made. By the time of the third turning (Unraveling era), enough war survivors have disappeared, replaced by kids with no memory of the

war, that a crisis war can recur. In fact, 44% of all crisis wars actually begin during the Unraveling era, rather than the Crisis era (fourth turning).

If we go back to my original figures, and we focus on the range of years from 40–79, then here's the distribution table:

	0	1	2	3	4	5	6	7	8	9
40–49	0	1	0	1	1	1	1	2	2	2
50–59	2	2	3	3	3	3	4	4	5	4
60–69	4	4	3	3	2	2	2	2	2	1
70–79	2	2	2	2	1	1	1	1	1	1

As you can see, of the 100+ wars that I looked at, 5 of them began in year 58, with 5 being the highest count. The counts drop off rapidly before and after 58, indicating that 58 really is a special year in generational theory.

I interpret this result as follows: Year 58 is a transitional year because it's just about the last time that survivors of the last crisis war climax have the ability to influence events. They realize that society is unraveling, because younger generations have no knowledge of the wisdom learned from the previous crisis war, and they panic, leading to either a false panic or a new crisis war.

I now have plenty of anecdotal and circumstantial evidence to support the "58 year hypothesis," so much so that it may now be fair enough to say that it's no longer just a hypothesis. Still, a great deal more research is needed, combining disciplines of psychology, sociology, historical analysis, and even pediatrics, to provide solid theoretical and experimental support.

5.8 THE 'WAR SCENARIO TEST'

Generational Dynamics tells us that we're headed for a "Clash of Civilizations world war," but the question always is, who will be fighting whom? Who will be the new "Allies," and who will be the new "Axis"?

I've commented several times in the past that, based on current trends, we can expect the following: China will be aligned with Pakistan and Sunni Muslims against India; Russia will be aligned with India and Shia Muslims; and India will be aligned with Britain and the west. Japan will be aligned with the West against China.

The "War Scenario Test" is a new test that will provide an additional analytical tool for making such forecasts.

Here's the test: For any given country, is there any realistic scenario that would propel the US immediately into a war with that country?

For China, the answer is obvious: China is spending massively on military spending to recover Taiwan, and a Chinese attack on Taiwan would bring us to war within just a few hours.

For North Korea, any move by their army across the border towards Seoul would require us to retaliate immediately.

What about Russia? I can't think of any realistic scenario that would bring us to war with Russia. In fact, the 2008 war in Georgia almost proves it — there was never any consideration whatsoever that we would go to war with Russia over Georgia the way we would go to war with China over Taiwan.

India is the same — no chance of war. But Pakistan? There are two realistic possible war scenarios. One is that a war with India would bring us in on the side of India. Another is if Islamist extremists gain control of Pakistan's nuclear arsenal.

Iran is an interesting case. As I've written many times, Iran is a schizophrenic nation, with people who are pro-American, and a government that's anti-American. There is a possible war scenario — if Iran develops a nuclear weapon, and the EU, Israel or the US decides that their nuclear capability must be destroyed. But that's far in the future, and my expectation is that in the meantime the pro-West attitudes of the people will diffuse Iran's nuclear threat against the West.

So the idea is that if you can think of realistic war scenario, then we're likely to be enemies in the Clash of Civilizations world war. It makes sense, because if such a scenario CAN occur, then sooner or later it probably WILL occur.

The "War Scenario Test" is an analytical tool, and like all tools, it has to be used carefully and appropriately. When used this way, it provides us additional views of the future that we'll all share.

5.9   SUMMARY

There is no single Generational Dynamics forecasting "method." Rather, it's a methodology consisting of a growing and evolving set of tools, always following the theme of analyzing current events in the context of long-term trends.

I've tried to make it clear in this paper that generational forecasting is a complex subject involving multiple disciplines. If it were taught in college, I estimate that a beginning course would require two semesters, with plenty of analytical homework. There would be plenty of opportunity for follow-on research at the undergraduate and graduate levels.

The GenerationalDynamics.com web site has always been a live, dynamic experiment. Since 2003, over 1500 articles have been posted, containing hundreds of predictions. The purpose was to test Generational Dynamics predictions in a verifiable way. Every article and every prediction is still available on the web site, and can be checked by anyone with the time and inclination to do so.

It's also been a chronicle of new developments in Generational Dynamics. As each new analysis and method was developed, it was posted on this web site. Thus, anyone wishing to understand Generational Dynamics forecasting on his own, without benefit of a college course, can do so by studying this web site. Hopefully, this article provides a useful summary.

6   THE WORLD MODEL: APPLICATIONS OF GENERATIONAL DYNAMICS

The long-range goal of Generational Dynamics is to create a computerized "world model," a database incorporating the generational timelines of every country, clan, and tribe in the world into a single model. It's known exactly how to do it. It would have very powerful analytical and predictive capabilities, and it would be a significant tool in historical analysis. It would have applications in government, education and business. I estimate that I need a budget of $2–5 million over a period of several years to get it fully implemented.

6.1   ALGORITHMIC DEVELOPMENT

There are two sides to this project — algorithmic development and data collection.

Today, there are few people who fully understand the generational algorithms. So the first major task will be finding people and training them to do the other tasks. The second major task will be computer implementation of the algorithms. These algorithms are already described throughout the GenerationalDynamics.com web site, so the task will be to formalize them in software.

6.2   DATA COLLECTION

Now let's turn to the data collection side.

For a World Model that models all the countries of the world, it will be necessary to collect and analyze huge amounts of data on a continuing basis. Access to government intelligence data would be extremely valuable for this, if the project is funded by the government. For purely commercial use, data will have to be collected from online sources — newspapers, blogs, etc. — and from polling.

With regard to polling, I would like to have polling done continuously in dozens or perhaps hundreds of cities and towns around the world. This polling need not be expensive; if I could identify a few hundred high-school students in cities around the world who would be able to receive e-mail questions and spend a day at the mall or the local farm stand, getting answers to the questions, then I would have the information that I need. A web site like guru.com is good for handling problems of this kind.

The next major data collection task is translating, assimilating and collating the data. This will require a bunch of people, and they'll require a moderate amount of training to understand what to look for, and how to handle it. The collated data must then be fed into the computerized World Model, which will perform automated analysis and make predictions as required. The methodology for doing this is the same as has been illustrated on my web site for the last five years. The intent will be to identify specific generational archetypes and sub-archetypes and turnings and sub-turnings in each region.

6.3   SHORT-TERM PROJECTS

The foundations and feasibility of the World Model have already been established by the GenerationalDynamics.com web site, where generational analyses of dozens of countries have been posted.

Thus, suitable goals for a short-term project would be to take one or two specific countries and evaluate them for some specific purpose, such as developing a business plan for marketing a new product or service.

7   APPENDIX: SOLUTION TO SYSTEM DYNAMICS PROBLEM

Even though this is a simple test in a simple situation, very few people get all four questions right, or even grasp how to solve the problems. Here are the solutions:

1. During which minute did the most people enter the store?
    The number of people entering the store each minute is shown by the solid line graph, which peaks at minute 4.
2. During which minute did the most people leave the store?
    The number of people leaving the store each minute is shown by the dotted line graph, which peaks at minute 21.
3. During which minute were the most people in the store?
    During the first thirteen minutes, the solid line graph (number of people entering) is above the dotted line graph (number of people leaving), and so more and more people entered the store during that period. After minute 13, more people are leaving than entering, so after minute 13 the number of people in the store goes down. So the most people are in the store at minute 13.
4. During which minute were the fewest people in the store?
    The number of people in the store goes up until minute 13, and down until minute 30. So there are two possible answers: Minute 0 (the beginning) or minute 30 (the end).
    Prof. Sterman gives the answer: "To determine which, you must judge whether more people enter up to minute 13 than leave afterwards, that is, whether the area between the rate of entering and rate of leaving up to minute 13 is greater or smaller than the area between the two curves from minute 14 on. Inspection of the graph readily reveals that the area between the curves from minute 14 on is larger than the area between the curves through minute 13 (in fact it is twice as large). More people left after minute 13 than were added up to that point. The fewest people are therefore in the store at minute 30."

8 APPENDIX: SUMMARY OF AMERICAN GENERATIONS SINCE WORLD WAR II

8.1 BORN 1901–24: GI GENERATION (HERO ARCHETYPE)

* Beat the Great Depression, fought and won WW II * The "greatest generation" — marched off to war with no hesitation * Determined to prevent a new WW from ever happening again * Did great things to rebuild the world * Created the United Nations, World Bank, Green Revolution, World Health Organization, International Monetary Fund, and so forth. * Fought Communism in Korea, Cuba and Vietnam * Determined to give their children a prosperous world at peace

8.2 BORN 1925–42: SILENT GENERATION (ARTIST ARCHETYPE)

* Grew up amid the horrors of Depression and WW II — Suffered a kind of "generational child abuse" * Called the "Silent Generation" by Time Magazine because they never complained about anything * Grew up to be conformist, indecisive, and sensitive. * Worked with GI Generation to rebuild the world and stop Communism * In the workplace (Diane Piktialis[xxviii]): * They are dedicated, and not just to doing a good job or making themselves look good, but to helping the organization succeed and getting customers what they need. * They are great team players, carry their weight and don't let others down.

8.3 BORN 1943–59: BABY BOOMER GENERATION (PROPHET ARCHETYPE)

* Enjoyed the "American High" — the benefits of beating the Depression and the Nazis without having suffered the horrors * Indulged by their war-weary parents — "got their way" * Grew up to be narcissistic, arrogant, and moralistic. * View younger generations as misguided and lazy. * In the workplace (Diane Piktialis[xxix]): * They tend to be optimistic, idealistic and good team players. * They are driven, love challenges and are focused on building stellar careers. * They can be highly competitive.

8.4 BORN 1960–81: GENERATION-X (NOMAD ARCHETYPE)

* Grew up in the shadow of the Boomers. * Gen-Xer Paul Begala: Boomers are "the most self-centered, self-seeking, self-interested, self-absorbed, self-indulgent, self-aggrandizing generation in American history." * Alienated, disaffected as youth, they will become the pragmatic middle managers that lead the nation through the Crisis era. * In the workplace (Diane Piktialis[xxx]): * They value flexibility, work-life balance and autonomy on the job, and appreciate a fun, informal work environment. * They are constantly assessing how their careers are progressing and place a premium on learning opportunities. * They are technologically savvy, eager to learn new skills and comfortable with change at work.

8.5 BORN 1982–2000: MILLENNIAL GENERATION (HERO ARCHETYPE)

* Dislike the political bickering of Boomers and Gen-Xers * Will be the new "Greatest Generation" * In the workplace (Diane Piktialis[xxxi]): * Well organized, confident, resilient and achievement oriented. * They are excellent team players, like collaboration and use sophisticated technology with ease. * They are comfortable with and respectful of authority and relate well to people who are older. * They want to work in an environment where differences are respected and valued, where people are judged by their contributions and where talent matters.

9 APPENDIX: BRIEF LIST OF GENERATIONAL DYNAMICS PREDICTIONS

Hundreds of articles have been posted on the web site since 2003, most containing specific Generational Dynamics predictions. All of those predictions have come true, or are trending true. None has been shown to be false. There is no analyst, journalist, politician or web site in the world with anything close to the predictive success of this web site.

Note that generational theory does not predict actual events. What it predicts is the public reactions to shocks and surprises. It predicts the attitudes and behaviors of large masses of people, entire generations of people.

For reference, here's a brief list of the major predictions that have appeared on this web site since 2003, and the year of first appearance. This list will be updated from time to time. For more details about any specific prediction, refer to web log for the latest articles on the subject.

9.1 FIRST APPEARANCE IN 2003

- **Macro economy (2003):** We're entering a new 1930s style Great Depression, and the stock market will fall to Dow 4000 or lower. The disappearance (death or retirement) of the Great Depression survivors has left us with generations of people with no memory of its horrors, and no fear of repeating the credit abuses that brought it about. The stock market is overpriced by a factor of close to 250%.

- **Macro economy (2003):** We're in a deflationary spiral, not a hyperinflationary period, and prices will fall significantly.

- **Palestine/Israel (2003):** The "Roadmap to Peace" would fail. Once Yasser Arafat and Ariel Sharon disappeared, the region would descend into chaos, leading to a new genocidal war between Jews and Arabs. Jews and Arabs will re-fight the genocidal war that was triggered in 1948 by the partitioning of Palestine and the creation of the state of Israel. The disappearance of Yasser Arafat and Ariel Sharon signals a major generational change leading to that war.

- **Iraq (2003):** There would be no civil war and no anti-American uprising, and any that start would fizzle quickly. Iraq is in a "generational Awakening era," just one generation past the genocidal Iran/Iraq war of the 1980s. A crisis civil war in Iraq is thus impossible; if any civil war occurs, then it will fizzle quickly.

  Contrast the "Iraq civil war" prediction with the "Darfur civil war" prediction (below). I gave opposite predictions for these two wars, and both predictions have come true, because the two wars occur at different points on the generational timeline.

- **Iran (2003):** Pro-American and pro-Western student demonstrations (like America in the 60s) would continue. Like Iraq, Iran is in a generational Awakening era, leading to a "generation gap," and widespread demonstrations by the college-age generation against the older generations.

- **America (2003):** Unlike the 60s, there would be almost no student antiwar demonstrations, and any that start would fizzle quickly. For years, people have been predicting massive student demonstrations against the Iraq war, as in the Vietnam war. But that's impossible today, because America is in a generational

Crisis era, and these student demonstrations only during generational Awakening eras, America in the 1960s.

9.2 FIRST APPEARANCE IN 2004

- **America (2004):** Men and women would return to stereotypical gender roles, with women focused increasingly on the children. People misunderstand the 1950s if they think that women were "oppressed" at that time. Actually, they had survived the horrors of WW II, and considered it their right to stay at home with the kids, and not be forced to work at distasteful "Rosie the Riveter" jobs. Feminism changed that attitude, and moved women into the workplace. But now, young college-educated women are massively deciding they'd rather stay home with the kids.

- **America (2004):** Politicians will resort to bitter fighting, and become less and less able to get anything done. This happens during generational Crisis eras. The American government has been almost paralyzed into inaction since 2004, and the same is true of "France, Israel, Japan, China, and other countries.

  The reason for this paralysis is that the generations that survived WWII are gone now. Those people did some great things — they created the United Nations, World Bank, Green Revolution, World Health Organization, International Monetary Fund, and so forth. They created these organizations and managed them for decades with one purpose in mind: That their children and grandchildren would never have to go through anything so horrible as World War II. Now all those people are gone, and the people left behind have no idea what's going on or what to do. They're unable to lead or govern. All they know how to do is whine and complain, and wait until the next disaster, the next world war, forces them to do great things as well.

- **Darfur (2004):** The UN would be completely irrelevant, and would have no effect on the Darfur civil war. It will continue until it's run its course. After the 1994 Rwanda genocide, the UN promised "never again." But in fact it's impossible for politicians to stop a Crisis war, any more than politicians can stop a tsunami.

  Contrast the "Iraq civil war" prediction (above) with the "Darfur civil war" prediction. I gave opposite predictions for these two wars, and both predictions have come true, because the two wars occur at different points on the generational timeline.

- **China (2004):** China is headed for a major internal civil war, as well as a war with the U.S. over Taiwan with absolute certainty. China has repeatedly threatened the US with war over Taiwan.

9.3 FIRST APPEARANCE IN 2005

- **Europe (2005):** The proposed Constitution would NOT be approved. There will be a new European war, one component of which will probably be France versus Britain. Of all the predictions I've made, this is the one that surprises most people. My response is this: England and France have had regular wars at least since 1066, and there's absolutely nothing new this time that would change that. Many were surprised. The War of the Spanish Succession was a great shock to everyone, and its climaxing battle, the 1709 battle of Malplaquet, was a great shock to everyone for its genocidal ferocity. The French Revolution and subsequent Napoleonic wars were a surprise. The 1871 Paris Commune was a

civil war, but it was such a shock that I think a lot of people today still don't believe it could have happened.

- **Lebanon (2005):** Despite widespread fear following many assassinations, there will be NO new civil war in Lebanon. After Lebanon's brutal 1980s civil war, including the bloody Sabra and Shatila massacre, the Lebanese people have been terrified that something might trigger another civil war. It was feared that the assassination of Hafiq Hariri would be that trigger. However, Generational Dynamics says that a new civil war at this time is impossible.

9.4 FIRST APPEARANCE SINCE 2006

- **Lebanon (2006, as war began):** Israel would fight an aggressive "existential war," while Hizbollah would fight half-heartedly. The summer 2006 Israeli/Hizbollah war in Lebanon was FASCINATING from the point of view of generational theory. Israel, in a generational Crisis era, panicked and fought the war in a "hot" fashion, with maximum force. Hizbollah warriors, in a generational Awakening era, fought the war in a "cool" fashion, launching missiles and returning home to the arms of their wives.

- **Sri Lanka (2006):** In contrast to Burma, Kenya and Tibet (below), the new violence WILL spiral into a genocidal crisis war between Tamils and Sinhalese. Formerly known as Ceylon, Sri Lanka's last crisis war was World War II and the 1947 Partition, so the country is in a generational Crisis era.

- **Burma/Myanmar (2007):** The new burst of violence would fizzle soon, and would not spiral into a civil war. Burma's last crisis war was the civil war that began in 1948 and climaxed in 1958.

- **Kenya (2008):** The new burst of violence is UNLIKELY to spiral into war right away, although a major civil war is almost certain within ten years. Kenya's last crisis war was the Mau-Mau rebellion that began in 1952 and climaxed in 1956.

- **Tibet (2008):** Anti-China violence in Lhasa will fizzle, but there could be explosive violence between Han and Tibetans in the provinces east of Tibet. The Tibet situation is very interesting for generational theory because Tibet and eastern China are on different generational timelines. And so the places where the two groups meet, in the provinces east of Tibet, are worth close examination.

9.5 CLASH OF CIVILIZATIONS

- **World (2003):** A new "Clash of Civilizations" world war. The Clash of Civilizations world war will be fought between big powerful adversaries — a new "axis" most likely consisting of China, Pakistan, Bangladesh, North Korea and their allies, versus America, India, Russia, Japan, and the UK and their allies.

10   SUMMARY

The predictive value of generational theory was established by Neil Howe and the late William A. Strauss, the founding fathers of generational theory. In their 1997 book, *The Fourth Turning*, they write, "Sometime around the year *2005*, perhaps a few years before or after, America will enter the Fourth Turning. ... A spark will ignite a new mood. Today, that same spark would flame briefly but then extinguish.... This time, though, it will catalyze a Crisis." Thus, they didn't predict the 9/11 attacks, but they did predict that some event, some spark, would change the mood of the American public into a Crisis mood. It's not the event that can be predicted; it's the attitude of the public to unpleasant shocks and surprises that can be predicted.

Strauss and Howe developed and established generational theory for the Anglo-American timeline since the War of the Roses in the late 1400s. Generational Dynamics extends generational theory to be valid for all places and times in history. This involves major theoretical extensions of the generational model, to the point where it's now a very sophisticated scholarly subject that could serve as a college undergraduate or graduate major. It's also an interdisciplinary subject, involving history, comparative history, mathematics, chaos theory, sociology, population dynamics, economics, macroeconomics, system dynamics, and even the theory of evolution.

In 2003, when the Generational Dynamics forecasting methodology was developed, the web site was set up as a testing ground. Since 2003, over 1,500 articles have appeared on the web site, most containing specific predictions. All of those articles are still available on the web site, so anyone who wishes can go back and find the original predictions.

Note that it's easy to get a million predictions right: Just make two million predictions. That's why it's important to note that no Generational Dynamics prediction has turned out to be wrong.

The generational methodology can be used to make very accurate predictions, but only for certain types of predictions.

The reason for this success is because the concepts of Chaos Theory and System Dynamics, both well-established disciplines, have been applied to determine what kinds of predictions can be made. Thus, all these predictions are "trend predictions," not "chaotic event" predictions.

It's impossible to predict the attitudes or behaviors of any person or any group of politicians, but it IS possible to predict the attitudes and behaviors of large masses of people, entire generations of people, and how they react to events. The success of this web site since 2003 indicates that this claim is true.

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