

Introduction

“So Peace Brings Warre and Warre Brings Peace”

The Empire has unified all the civilizations at last. After generations of battles the last enemies have been defeated. Citizens of the Empire can, it seems, look forward to permanent peace and prosperity. But a maverick mathematician named Hari Seldon has disturbing news. His new science of psychohistory, built from equations that integrate the actions of myriads of individuals, predicts large-scale social trends. When the equations are run forward, they foretell the decay and eventual collapse of the central power, rebellions by regional barons and rogue generals, and finally a bitter civil war that will transform the capital of the Empire from a teeming metropolis of hundreds of billions into a ghost town with a few thousand survivors eking out a miserable living among the ruins. The decline and fall of the Empire over the ensuing centuries unfolds precisely as the humble mathematician said it would.

This scenario from the *Foundation* trilogy of Isaac Asimov begins in the future on the planet Trantor, the capital of a mighty galactic empire. In Asimov’s fantasy human history can be understood and predicted in the same way that physicists understand and predict the trajectories of planets, or biologists the expression of the gene. The key to the prediction of human societies is psychohistory, the “branch of mathematics which deals with the reactions of human conglomerates to fixed social and economic stimuli.” The ability of psychohistorians to make accurate forecasts, however, is not absolute. Psychohistory cannot accurately predict actions of a single individual. Furthermore, the knowledge of the prediction must be withheld from the people whose collective behavior was predicted. As Hari Seldon explains, “by knowledge your freedom of action would be expanded and the number of additional variables introduced would become greater than our psychology could handle.” There is another reason why prediction of human societies should be impossible—complex dynamical systems are inherently unpredictable in the long run due to “the butterfly effect.” Small causes may have large effects, so that a butterfly fluttering its wings in Australia could cause a hurricane in the Atlantic. Or, as a children’s rhyme has it, “for want of a nail . . . the kingdom was lost.” Asimov, though, could not know about it because he wrote the trilogy in the early 1950s, before the discovery of mathematical chaos and the butterfly effect.

Asimov’s trilogy captured the imagination of millions of readers, among them quite a few scientists and historians. Yet his vision flies in the face of the view held by most professional historians and scientists, and which is indeed generally accepted in our culture. For centuries philosophers have mulled over the prospects of a scientific study of history. Despite some dissenting voices, the consensus has been that human societies are just too different from physical and biological systems. They are too complex. They consist not of simple identical particles like atoms and molecules, but of human individuals, each unique, endowed with free will, and capable of purposeful action. The verdict has been that any sort of scientific history must remain science fiction rather than a real science. And some may feel that this is to the best.

A science of history sounds cold and hard—wouldn’t it destroy our enjoyment of the wonderfully rich tapestry of the past? On a darker side, might not such a science enable some shadowy cabal to manipulate societies to a nefarious purpose? But have we ceased to enjoy the blue sky of a brilliant summer day, or the play of colors in a glorious sunset? After all, the physicists, beginning with Newton and ending with Einstein, worked out exactly how colors of the sky result from the interaction of sunlight with the atmosphere. As to the nefarious uses of a science of history, it is true that any knowledge can be turned to good or bad ends. But Asimov’s notion of a Second Foundation—a group of psychohistorians pulling the strings from some secret center—was always the least credible part of his vision.

War and Peace and War addresses the question raised by Asimov (and many other people before him, including Marx and Tolstoy)—is a science of history possible? Can we design

a theory for the collapse of mighty empires that would be no worse than, say, our understanding of why earthquakes happen? Seismologists have made great strides in understanding earthquakes. They can even make some limited predictions as to which areas of the Earth are likely to be hit next by an earthquake. But forecasting the precise timing and magnitude of an earthquake eludes them. Can a science of history, similarly, explain why states crumble, and perhaps predict which societies are in the danger of collapse?

This book focuses on Empires. Why did some—initially small and insignificant—nations go on to build mighty empires, while other nations failed to do so? And why do the successful empire-builders invariably, given enough time, lose their empires? Can we understand how imperial powers rise and why they fall?

An empire is a large multiethnic territorial state with complex power structure. The key variable is the size. When large enough, states invariably encompass ethnically diverse people; this makes them into multiethnic states. And given the difficulties of communication in preindustrial times, large states had to come up with a variety of ad hoc ways to bind far-flung territories to the center. One of the typical expedients was to incorporate smaller neighbors as self-contained units, imposing tribute on them and taking over their foreign relations, but otherwise leaving their internal functioning alone. Such process of piecemeal accumulation usually leads to complicated chains of command and the coexistence of heterogeneous territories within one state.

Empires are not the only objects of study for a science of history. Historians such as Arnold Toynbee wrote volumes on the rise and fall of whole civilizations. Others have been fascinated with the spread of world religions, evolution of art styles, progress in science and technology, economic and demographic changes. All of these subjects are worthy. But it is impossible to encompass them all in one book. The rise and fall of empires is fine place to start.

Unlike such entities as civilizations, territorial states are easier to define and demarcate from each other, as well as from other comparable units (city states, tribal confederations, etc). Historians continue to argue about how to distinguish one civilization from another. Different authorities place Achaemenid Persia as part of the Syriac, Iranian, or Mesopotamian civilization. In contrast to this multitude of contending notions, were you to consult any historical atlas, you would find the boundaries of the Achaemenid Empire drawn in pretty much the same places.

The stories of empire are irresistible. Imagine the feelings of an eighteenth century Englishman, on his world tour, standing among the fairly well preserved 2000-year old ruins of Ancient Rome before the modern metropolis engulfed them. Today, one can have a similar experience in Chichen Itza in Mexico (be sure to get there early in the day before the tourist buses arrive). Who were the people who built these magnificent temples and pyramids? Why aren't they around anymore? From Shelley's Ozymandias to Darth Vader, stories of empires have fascinated us.

As a road map to what follows, here's a very terse outline of the central theoretical argument of the book.

Many historical processes are dynamic—empires rise and fall, populations and economies boom and bust, world religions spread or wither. Historical dynamics investigates such dynamical processes in history. Most research has been done on agrarian societies, those in which the majority (and often over 90 percent) of people are involved in producing food.

The theoretical framework I have been developing for several years focuses not on human individuals but on social groups through time. Ultimately the behavior of a group is determined by the actions of its individual members. However, social groups are not simple

collections of identical particles, readily described by statistical physics; they have complex internal structures.

One important aspect of group structure is that different people have access to differing amounts of power and wealth. A small proportion of members in an agrarian society (typically around one or two percent) concentrates in its hands most of power and wealth—this group consists of the elites or aristocracy. The rest of the population is the commoners.

Another important aspect of social structure is ethnicity. Ethnicity is the group use of any aspect of culture in order to create internal cohesion and differentiation from other groups. There is an imaginary boundary separating the members of the ethnic group from the rest of humanity. For example, Greeks drew a boundary between themselves and barbarians, non-Greek speakers. The ethnic boundary can use a variety of *symbolic markers*—language and dialect, religion and ritualistic behaviors, race, clothing, behavioral mannerisms, hair styles, ornaments, and tattoos. The important thing is not which markers are used, but the distinction between in-group and out-group members, between Us and Them.

People usually have multiple ethnic identities nested within each other. An inhabitant of Dallas can be simultaneously a Texan, an American, and a participant in the Western Civilization. The broadest groupings of people that unite many nations are usually called civilizations, but I prefer to call such entities *metaethnic communities* (from the Greek *meta*—beyond and *ethnos*—ethnic group, nation). My definition includes not only usual civilizations—the Western, Islamic, or Sinic—but also such broad cultural groupings as the Celts or Turco-Mongolian steppe nomads. Typically, cultural difference is greatest between people belonging to different metaethnic communities; sometimes this gap is so extreme that people deny the very humanity of those who are on the other side of the metaethnic fault line.

Historical dynamics can be understood as a result of competition and conflict between groups, some of which dominate others. Domination, however, is made possible only because groups are integrated at the micro level by cooperation among their members. Within-group cooperation is the basis of intergroup conflict, including its extreme versions such as war and even genocide.

Different groups are characterized by different degrees of cooperation among its members, and therefore different degree of cohesiveness or solidarity. Following the fourteenth century Arab thinker Ibn Khaldun, I call this property of groups *asabiya*. *Asabiya* is the capacity of a social group for concerted collective action. *Asabiya* is a dynamic quantity; it can increase or decrease with time.

Each empire has at its core an *imperial nation* (some empires had more than one imperial nation for a time, but this structure appears to be unstable). The ability of an empire to expand territory and to defend itself against external and internal enemies is determined largely by the characteristics of its imperial nation, especially its *asabiya*. Because only groups possessing high levels of *asabiya* can construct large empires, the question is how do they gain it, and why do they eventually lose it?

Groups with high *asabiya* arise on metaethnic frontiers. A *metaethnic frontier* is an area where an imperial boundary coincides with a fault line between two metaethnic communities. Metaethnic frontiers are places where between-group competition is very intense. Expansionist empires exert enormous military pressure on the peoples beyond their boundaries. But the frontier populations are also attracted to the imperial wealth, which they attempt to obtain by trading or raiding. Both the external threat and the prospect of gain are powerful integrative forces that nurture *asabiya*. In the pressure cooker of a metaethnic frontier poorly integrated groups crumble and disappear, while groups based on strong cooperation thrive and expand.

In order to match the power of the old empire, a frontier group with high *asabiya*—an incipient imperial nation—needs to expand by incorporating other groups. On a metaethnic frontier integration of ethnically similar groups on the same side of the fault line is made easier by the presence of a very different Other—the metaethnic community on the other side. The huge

cultural gap across the frontier dwarfs the relatively minor differences between ethnic groups on the same side. Empirical evidence shows that large aggressive empires do not arise in areas where political boundaries separate culturally similar peoples.

My main argument, therefore, is that people originating on fault-line frontiers become characterized by cooperation and high capacity for collective action, which in turn allows them to build large and powerful territorial states. I develop this argument in Part I and illustrate it with examples of Russia and America (Chapter 1 and 2), the Germans and Arabs on the Roman frontier (Chapters 3 and 4), the origins of Rome (Chapter 6), and the rise of European Great Powers (Chapter 7).

The critical assumption in my argument is that cooperation provides the basis for imperial power. This assumption is at odds with the fundamental postulates of the dominant theories in social and biological sciences: the rational choice in economics and the selfish gene in evolutionary biology. However, recent developments in the nascent fields of experimental economics and multilevel selection show that the standard model, based on the self-interest hypothesis, is deeply flawed. It cannot explain the puzzle of human ultrasociality—our ability to combine into cooperating groups consisting of millions of unrelated individuals. Moreover, it is refuted by behavioral experiments.

There were two key adaptations that enabled the evolution of ultrasociality. The first one was the *moralist* strategy: cooperate when enough members in the group are also cooperating and punish those who don't cooperate. A band that had enough moralists to tip its collective behavior to the cooperative equilibrium outcompeted, or even exterminated, bands who failed to cooperate. The second adaptation, the human ability to use symbolic markers for defining cooperating groups, allowed evolution of sociality to break through the limits of face-to-face interactions. The scale of human societies increased in a series of leaps, from the village and clan to the tribe and tribal confederation, then to the state, empire, and civilization. This new science of cooperation is considered in Chapter 5.

Whereas Part I is devoted to *imperiogenesis*—what factors explain the rise of empires, Part II switches focus to *imperiopathosis*—why empires decline.

The very stability and internal peace that strong empires impose contain within them the seeds of future chaos. Stability and internal peace bring prosperity, prosperity causes population increase. Demographic growth leads to overpopulation, overpopulation causes lower wages, higher land rents, and falling per capita incomes for the commoners. At first, low wages and high rents bring unparalleled wealth to the upper classes, but as their numbers and appetites grow, they too begin to suffer from falling incomes. Declining standards of life breed discontent and strife. The elites turn to the state for employment and additional income, and drive up its expenditures at the same time that the tax revenues decline due to the growing misery of the population. When the state's finances collapse, it loses the control of the army and police. Freed from all restraints, strife among the elites escalates into civil war, while the discontent among the poor explodes into popular rebellions.

The collapse of order brings in its wake the four horsemen of Apocalypse—famine, war, pestilence, and death. Population declines and wages increase, while rents decrease. As incomes of commoners recover, the fortunes of the upper classes hit bottom. Economic distress of the elites and lack of effective government feed the continuing internecine wars. But civil wars thin the ranks of the elites. Some die in factional fighting, others succumb to feuds with neighbors, and many simply give up on trying to maintain their aristocratic status, and quietly slip into the ranks of commoners. Intraelite competition subsides allowing order to be restored. Stability and internal peace bring prosperity, and another cycle begins. As a sixteenth century commentator put it, “so peace brings warre and warre brings peace.”

The typical period of a complete cycle, which consists of a benign *integrative phase* and the troubled *disintegrative phase*, is around two or three centuries. I call these majestic oscillations in demographic, economic, and social structures of agrarian societies *secular cycles*. The demographic-structural theory that explains secular cycles is developed in Chapter 8 and 9 and illustrated with French and English history during the medieval and early modern times.

The phase of a secular cycle affects a trend in economic and social inequality, which in turn affects the dynamics of asabiya. Incipient imperial nations are relatively egalitarian. Great differences in wealth among group members undermine cooperation, and such groups succumb to rivals with higher levels of asabiya. Additionally, metaethnic frontiers tend to be underpopulated, so there is enough land (the main form of wealth in agrarian societies) for all who are willing to work it. The success of an imperial nation at territorial expansion, however, results in the movement of frontiers far away from its core, thus removing an important force holding up the growth of inequality. Imposition of peace results in population growth, and overpopulation brings with it the impoverishment of peasant masses. As the poor grow poorer, the rich grow richer—this process is called the *Matthew Principle*. The growing disparity between the rich and the poor puts the social consensus under strain. At the same time, the gap in the distribution of wealth grows not only between the aristocrats and commoners, but also within each social group. Intraelite competition for diminishing resources results in faction and undermines national solidarity. During the disintegrative phase of the secular cycle, regional and sectarian identities acquire greater saliency than the national or empire-wide identity, and the asabiya of the imperial nation is corroded. The Matthew Principle, thus, plays an important role in imperiopathosis, the decline of empires.

Decline of asabiya is not linearly uniform. During the integrative phases of secular cycles when inequality is moderate, intraelite competition as well as conflict between elites and commoners subside; the empire-wide identity regains its strength, for a time. As discussed further in Chapter 10, it takes a cumulative effect of several disintegrative phases to reduce asabiya of a great imperial nation to the point where it cannot hold together its empire.

A life cycle of a typical imperial nation extends over the course of two, three, or even four secular cycles. Every time the empire enters a disintegrative secular phase, the asabiya of its core nation is significantly degraded. Thus, several secular cycles are nested within the great cycle of the rise and decline of asabiya. But disintegrative phases are also not uniformly grim. A civil war begins like a forest fire or an epidemic—violence leads to more violence in an escalating spiral of murder and revenge. Eventually, however, people become fed up with constant fighting, and a civil war “burns out.” Both the survivors of the civil war and their children, who had direct experience of conflict, are reluctant to allow the hostilities to escalate again. They are, thus, “immunized” against internecine violence. The next generation, the grandchildren of the civil warriors who did not experience its horrors at first hand, are not immunized. If the social conditions leading to conflict (the main one being elite overproduction) are still operational, they will fight another civil war. As a result, civil war tends to recur during the disintegrative phase with a period of 40–60 years. I call such dynamics the *fathers-and-sons cycles*. The fathers-and-sons-cycles are nested within secular cycles, which in turn are nested within asabiya cycles. I illustrate these “wheels within wheels within wheels” dynamics with the decline of the Roman Empire in Chapter 11.

There are, thus, three central ideas I discuss in this book: the metaethnic frontier theory that explains asabiya cycles, the demographic-structural theory that explains secular cycles, and the social psychology theory that explains the fathers-and-sons cycles. These theories are part of a new science of historical dynamics, or as I prefer to call it *cliodynamics* (from *Clio*—Muse of history, and *dynamics*—the study of processes that change with time).

Cliodynamics borrows heavily from two disciplines in the natural sciences. The focus on groups instead of individuals is akin to the approach of statistical mechanics, which integrates over motions of myriads of particles to predict such properties of the ensemble as temperature or

pressure. However, the study and prediction of human groups is a much more challenging task because people vary, among other things, in power and ethnic identity. Humans also possess free will. I discuss the implications of these complicating factors for the study of human societies in Chapter 12.

Cliodynamics owes an even greater debt to the discipline of nonlinear dynamics. Human societies and states can be modeled as dynamical systems, consisting of parts that interact with each other. Furthermore, states are part of an international system, which adds another level of complexity. The key concept here is *dynamic feedbacks*. A change in the state of one component of the system has an effect on another, but the change in the second may in turn affect—feedback on—the first. When a dynamical system contains within it such circular nonlinear feedbacks, it becomes highly susceptible to oscillations. Stated succinctly, “so peace brings war and war brings peace.”

Cycles exhibited by historical societies and states, however, are not the same as highly periodic, repeatable phenomena in physics, like planetary motions, or pendulum oscillations. Social systems are much more complex. It is well known from the science of nonlinear dynamics that two or more perfectly cyclic behaviors superimposed on each other may combine to produce noncyclic dynamics—in other words, chaos. Interactions between the asabiya, secular, and fathers-and-sons cycles can lead to such complex, chaotic dynamics. In a chaotic system, a small action of one of its elements—a human being exercising his or her free will—can have huge consequences. There are also external sources—variations in climate leading to crop failure, random mutations giving rise to new frightful epidemics, and cataclysmic volcano eruptions. The dynamics of real human societies cannot be accurately predicted far in the future because of the nature of chaotic behavior, free will, and natural disasters. Hari Seldon was wrong.

Although prediction far in the future is impossible, given what we know about societies and nonlinear dynamics, it does not mean that improved understanding of how societies function is purely academic knowledge. The understanding of the processes that bring a society to the brink of civil war may suggest policies that can avert it. Such social engineering, of course, is still far in the future. Our understanding of the dynamics of even agrarian societies is far from perfect, and highly complex modern industrial and postindustrial societies present an even greater challenge for sociologists. Many processes that played a determining role in the functioning of agrarian societies are of much lesser or even no importance in modern societies. For example, famine has been eliminated in modern Western societies. On the other hand, human nature has not been completely changed by the Industrial Revolution. In the last two chapters I speculate on what lessons cliodynamics might have for us and our future times of war and peace and war.