The Twilight of the Monetary system

And Dawn of a New Era

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Preface

"Power corrupts, and absolute power corrupts absolutely."
Lord Acton

The basic problem with the monetary system is it has always created an economic oligarchy. In our society just one percent of our people control our entire economy. We've long ago organized politics as a democracy, and we go through the motions at every election, but we haven't yet achieved government of the people, by the people, and for the people because we have an economic oligarchy corrupting politics.

The oligarchy is created because we govern our economy by issuing *permanent, unlimited* and *hereditable* power in the form of money. And we know from experience in politics that whenever any government issues *permanent, unlimited* and *hereditable* power, a few clever people will ultimately accumulate the power and become a hereditary oligarchy, take control, and ultimately tyrannize the society.

And it wouldn't matter if we switched to socialism or communism, for these 'isms" also

use the monetary system to govern the economy and issue the *permanent, unlimited,* and *hereditable* power of money. And they, too, ultimately end with a moneyed oligarchy ruling the economy and politics. It's important to recognize that it is the monetary system that creates the oligarchy, and not the variations or 'isms" of the monetary system.

Of course, a modern economy needs a medium of exchange, but with today's computer technology a medium of exchange doesn't have to give the bearer *permanent, unlimited* and *hereditable* economic power. Science could design a new medium that grants people *limited* economic power and end economic oligarchy, just as political science designed a new political system that grants people *limited* political power to end political oligarchy.

The reason we haven't taken steps to change the system, and end the economic oligarchy as we have in politics, is the monetary system allows the majority of people to achieve some level of prosperity. And, since we live in a political democracy governed by the majority, and the majority never worries about a problem that doesn't affect it, we've struggled on using the monetary system and suffering oligarchy.

But in the middle of the last century conditions began to change. Science began producing ever more intelligent robotics that are rapidly replacing human beings in the workplace. Eventually robots promise to swallow so many jobs that sometime in the near future the majority will join the army of the unemployed. And, when that point is reached, the majority will finally demand change, and society will need to be ready with a well proven alternative to the monetary system.

In this book we'll enlarge on this view. Then we'll explore the possibility of replacing the monetary system with a new economic system that issues only *limited* power to create an economy of the people, by the people and for the people, with prosperity and justice for all. This will require readers to be willing to sweep aside their emotional attachment to money, and to look at the facts and be open to change.

We'll be following the scientific method introduced by Francis Bacon, and quote from his *Novum Organum* quite often. Bacon's method led John Locke to discover how to organize a political system with *limited* political power to end political oligarchy. By following the trail blazed by Locke, we'll

discover how to organize an economic system with *limited* economic power to finally end oligarchy in both politics and economics.

"One method of delivery alone remains to us; which is simply this: we must lead men to the particulars themselves, and their series and order; while men on their side must force themselves for a while to lay their notions by and begin to familiarize themselves with facts."

Francis Bacon, *Novum Organum (1620)*

I

The Urgent Need for Change In Our Economic System

The monetary system designed thousands of year ago in the Age of Faith and used to govern our economy doesn't fit into our Age of Science and advancing technology. It has never proved to be a very efficient system of economic government. After all of its thousands of years of operation, half the nations of the world still remain sunk in abject poverty, and, of the half that achieved some prosperity, a third of the people in those nations struggle daily to survive.

The monetary system is also an unstable system for it is a faith-based system designed in an Age of Faith. People must have faith in money for it to function, and, since faith ebbs and flows, the economy ebbs and flows, in one season growing, and in another withering. Today the world's economy is ebbing because people's faith in money is ebbing, and the outlook for the restoration of

faith is so poor that society has fallen into a worldwide depression.

And the monetary economy is always riddled with corruption and injustice. We are led to believe by our schoolmen that all the inefficiency, instability, and injustice in our economy is created by people who abuse the system or don't know how to cope in a monetary system. The schoolmen never blame the monetary system, for they want us to assume it is the only system available to govern the economy of a sophisticated society.

This notion of the schoolmen is not based on fact. We've learned from experience in politics that it is not people that create problems. It is the system of behavior granting *permanent, unlimited* and *hereditable* power to people that creates problems. We've learned from experience in politics that, if we change the organization and create a system that grants people *limited* power, the inefficiency, instability and the injustice is limited.

But, despite all of the problems created by the monetary system and urged on by the webs of logic of the schoolmen, society has loped along for several thousand years using the monetary system to govern its economic

behavior, always complaining about poverty, instability and injustice of the economy. Society seems unaware that it is the monetary system creating the problems, and that a society has an inalienable right to replace a system of government that creates problems. Let's remind ourselves of Jefferson's elegant declaration of that inalienable right:

"*We hold these truths to be self evident, that all men are created equal, that they are endowed by their creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness – that to secure these rights governments are instituted among men, deriving their just powers from the consent of the governed – that whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government laying its foundation on such principles and organizing its powers to such form as to them shall seem most likely to effect their safety and happiness.*"

Unfortunately, the monetary system, as inefficient, unstable, and corrupting as it may be, works just well enough to allow the majority of people in society, about 70% of the population, to prosper. And, since we live in a political democracy ruled by the majority, the majority have found it too much trouble to

worry about problems created by the monetary system that don't personally affect them.

The poor, on the other hand, those who bear the brunt of the inefficiency, instability and injustice created by the monetary system, comprise only a third of our population and are a minority, and, in a political democracy, the minority vote doesn't count. So year after year we continue to use the monetary system, indifferently allowing a third of our population to suffer poverty and injustice, silently hoping they won't get violent.

This indifference of the prosperous majority to the suffering of the minority is what Madison called "The tyranny of the majority," and is one of the serious unresolved shortcomings of democracy. So, despite the fact that the monetary system is inefficient and unstable and invites tyranny, we could very well go on another thousand years using the monetary system, ignoring the booms and busts and heartaches it creates.

BUT IN THE MIDDLE of the last century something new appeared that is tipping the balance of the problems, and may soon make the monetary system untenable even for the majority. Modern science has

introduced robotics. At their introduction in the New York World Fair in 1939, robots were touted as a boon to mankind, because they have the potential of saving mankind from a lot of work.

And the sales pitch has proven to be very true. Robots are relentlessly replacing human beings in the workplace. But, unfortunately, in the monetary system, if we don't work, we don't get paid, and, if we don't get paid, we can't buy anything to eat, or to wear, or to house us. And, with the advance of robotics, very soon robots will exile a lot of human beings from the economy, maybe a majority of the people.

Worse, when people are exiled from the economy by unemployment, they can't buy anything, so the market for goods and services shrinks. And, when the market shrinks, production shrinks, and jobs shrink, and so on. It's conceivable, if we continue to use the monetary system, robots will exile so many of us that there will be no market for production, no production, and no economy.

So where, before the advent of robots, we could lope along using the monetary system with the majority prospering and the poor minority silent, with the advent of robots

the poor may soon become the majority and create a political revolution, and the monetary system may collapse for the lack of a market for goods and services. The fact is the modern science of robotics is slowly pushing the monetary system to the brink of obsolescence.

WE KNOW ADVANCING technology affects the monetary system. As early as the beginning of the 19th century, Luddites smashed machinery that took their jobs and exiled them from the economy. But the movement petered out because technological advances then began to increase jobs, making it appear for a century or more that science was beneficial to the monetary system.

The steam engine caused mills to blossom that required so many new workers that even children were employed. The steamboat created jobs in shipbuilding, crewing and dock handling. Railroads expanded the work force so much that America had to import Chinese workers. The telegraph and telephone, radio and TV created a whole new entertainment industry. And Henry Ford's low cost autos triggered the greatest job increase in history.

But Henry Ford not only introduced the affordable auto, he also introduced the

production line, a new technology that divided manufacturing into simple, repetitive operations. At first, people worked the assembly line, for almost everyone had the capability to do simple, low-tech repetitive operations, and the good salaries and benefits that Ford paid served to increase the market.

But in the 1930's primitive robotics began to appear that could do some of the low-tech operations, and, as they improved, fewer and fewer workers were needed to produce an automobile, or any other production line product. In candy factories, for example, once thousands of workers produced a hundred thousand candy bars a day, but today less than a hundred workers produce a half million a day.

Fortunately, robotic development at first was slow, for their control systems were clumsy and this limited the tasks robots could do. But, in the middle of the last century, digital computers burst on to the scene to change the pace of robotic development. Computers did trigger a lot of new high-tech jobs, but they also made possible clever robots capable of almost totally replacing humans in many jobs.

Improved by computers, by the 1960's robots began to swallow low-tech and many high-tech jobs by the millions. By 1980 they had replaced so many humans in the workplace, shrinking the market for products to such an extent, that business began to feel the effect. And, as sales fell, business began to lay off more and more workers; and unemployment became a serious and ever growing problem, creating an economic recession.

As the economy has ebbed since the 80's, governments cut business taxes to help businesses survive, and borrowed more and more large amounts of money to increase domestic and defense spending to create jobs lost to robots. But, to control their rising national debt, governments also imposed austerity programs. These eliminated government jobs and reduced educational and other social service budgets, and austerity became a watch word.

But the advent of a worldwide banking "bubble" that allowed people to purchase with borrowed money beyond their means, made it appear for the rest of the 20th century that the monetary system was still viable, if not healthy, when, in fact, it was quietly being systematically undermined by the growing

development of ever more efficient robots creating unemployment and shrinking the market.

Then, in 2008 the banking "bubble" burst, and we discovered, without the banking "bubble," there wasn't sufficient market demand to keep everyone working. Even in the most prosperous societies, low-tech workers lost jobs by the millions to robots, causing markets to shrink even more. The shrinking market created more layoffs in business, and a reduction in salaries and pensions, which caused more shrinking, and so on.

According to Bureau of Labor Statistics data, one out of three manufacturing job, about six million factory jobs, have been lost since the end of the Great Depression. About as many people work in manufacturing jobs today as did at the end of the Depression, at a time when the American population was half of what it is now. With all those jobs gone, the market has shrunk easily by a third of what it was fifty years ago.

Look at the facts. The world market has shrunk to the point that the GDP of major industrial nations like Japan, England, and the United States is stagnating, forcing their

governments to cut taxes even further, and to borrow more huge sums to stay afloat. And, to reduce the growth of debt, they institute even more severe austerity programs that create more unemployment that further shrinks the market.

There are still job openings, but they are high tech-jobs beyond the education or the mental capability of a large segment of society; and, with the austerity programs cutting educational budgets, people that could be educated to take the jobs can't afford the expense. So, many of the unemployed have taken part-time work at low wages to survive, which doesn't help the market much, and many even in the middle class expect to be permanently exiled from the economy.

And, since it is the history of technology to advance exponentially, low-tech jobs will disappear exponentially in all sectors of the economy – including mining, construction, retail sales, banking, the armed services, police, and fire fighting – all of which have traditionally been heavy employers of low-tech workers. As MIT economists Brynjolfsson and McAfee noted in their e-book, *The Race Against the Machine,* human beings are being exiled at an ever alarming speed.

There is now an estimated 20% to 30% unemployment among Hispanics and Blacks in the United States; and, in some places, 48% of young people between the ages of 18 and 28 are without jobs. Today 30% of the population receives food stamps, 50% of people live in multi-generational homes, college graduates, staggering under enormous student loans, are moving in with parents on graduation, and an estimated 30% of unrelated adults are doubling up. And experts see no relief in sight.

To add to the problem, shrinking markets have caused business to increase the pressure upon Congress to reduce the power of unions to reduce salaries and eliminate pension plans – all of which lowers the amount of money workers have to spend to buy the products produced by business – thereby shrinking the market even further, prompting more layoffs. Meanwhile the schoolmen are very quiet, for they don't know what's going on.

And we can't stop the advance of robots because the monetary system is a profit-driven system, and, since fewer human employees means an increase in the profit for the owners of business, the monetary system will pressure business to steadily increase robotics. And, if we continue to use the

monetary system, the advance of robots will create more and more unemployment and make the monetary system more and more untenable.

So, unless we want a violent revolution created by mass unemployment and austerity programs, we need to accept the fact the old monetary system is not only inefficient, unstable, and corrupt, it simply doesn't fit our modern Age of Science, and has outlived its usefulness. We must realize that we need to establish a new econoscience to scientifically develop an alternative to the monetary system that will accommodate the advance of science while we're still muddling along in the twilight of the monetary system.

In the following pages, guided by the scientific method introduced in Francis Bacon's *Novum Organum* – the seminal work that guided John Locke to develop modern political science and to discover political democracy – we'll sweep aside all the webs of logic of the schoolmen, and discover there is an economic system that doesn't require money to function, and that could be scientifically developed. More important, it is a democratic system that complements our democratic political system.

Francis Bacon

"I supply the mind with such rules and guidance that it may in every case apply itself aptly to the nature of things."

II

How To Discover A New Economic System

Bacon opens the *Novum Organum* with the important observation that, despite what we may like to believe, man doesn't invent things or behaviors. He merely manipulates things and behaviors that already exist in nature in a crude form to make them more suitable for our purposes.

"Man, being the servant and interpreter of nature, can do and understand so much and so much only as he has observed in fact or in thought of the course of nature; beyond this he neither knows anything nor can do anything. . . Towards the effecting of works, all that man can do is to put together or put asunder natural bodies. The rest is done by nature working within."

Bacon then goes on to observe that, if we want to discover an alternative system of behavior that will advance human progress, we should begin by searching human behavior, past and present, for some *natural* behavior that fits the new goal, especially one that society rejected long ago as so clumsy and difficult as to be *impossible* to use in a sophisticated society.

"As originally discovered they are commonly rude, clumsy, and shapeless, afterwards (with the help of man) they can acquire new powers and more commodious arrangements and constructions, but men sooner leave the study and pursuit of them, and turn to something else than arrive at the ultimate perfection of which they are capable. . . For the mind longs to spring up to positions of higher generality, that it may find rest there; and so after a little while wearies of experiment."

Then, Bacon recommends that, when we find such a *natural* behavior, we must force ourselves to ignore the old decision, and all the logic schoolmen have used since to justify it. Then, with a clear mind, we must go back and reconsider whether the difficulties of the *natural* behavior could be overcome with modern technology, so the system could be used in a sophisticated society.

"No one has yet been found so firm of mind and purpose as to resolutely compel himself to sweep away all theories and common notions, and to apply the understanding, thus made fair and even, to a fresh examination of the facts. Thus it happens that human knowledge, as we have it, is a mere medley and ill-digested mass, made up of much credulity and much accident, and also of the childish notions which we at first imbibed."

The 17th century English philosopher John Locke, recognizing that English society was not advancing under the political oligarchy that ruled England and Europe by the Grace of God, followed Bacon's advice. He examined history for a *naturally* occurring secular political behavior that had been rejected long ago by society as so clumsy and difficult to organize that it was assumed

impossible to be used in a sophisticated society.

He selected the political commonwealth or republican system that had *naturally* developed in ancient Rome; and that Roman society had rejected as too clumsy and difficult to organize to use in its expanding political empire. Romans chose, instead, an oligarchy headed by an emperor supposedly anointed by the "divine hand" of a Roman god, because it was easier to organize than a commonwealth.

In his *Second Treatise on Government* Locke swept aside the rejection of the republican system, and the logic schoolmen like Filmer had written justifying the rejection, and concluded that, with modern 17th century technology, it would be quite possible to use a republican political system in the sophisticated and growing English Empire.

But English schoolmen, accustomed to thousands of years of oligarchy, considered Locke's conclusion that common peasants could self-govern politics in a sophisticated expanding empire as *impossible*, and rejected his work as the product of an unripened mind. So Locke's theory of organizing a nation as a

republic languished as theoretical nonsense for a century.

"By far the greatest obstacle to the progress of science and the undertaking of new tasks and provinces therein is found in this – that men despair and think things impossible . . . that when they reach a certain point and condition they can advance no further and, if therefore anyone believes or promises more, they think this comes of an ungoverned and unripened mind."

But a few decades later, English colonists in America, separated from the English oligarchy by a vast ocean, and well aware of Locke's theory, found it quite *natural* to organize themselves into 13 political commonwealths. By the 1770's these colonies had *experimentally* created sophisticated and interrelated politically self governing systems and called a Continental Congress to exchange ideas.

Then, in 1776, when the English oligarchy attempted to tax the colonies without providing them representation in Parliament, the 13 colonies joined together and declared their political independence. To the English oligarchy's surprise, the 13 commonwealths were well enough organized to field a ragtag army under George

Washington, and chase the English and their sophisticated army out of the colonies.

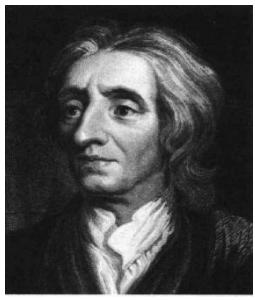
The colonies then formed The United States, and the founders, men like Adams, Franklin, Jefferson, and Madison, but not Hamilton, students of Locke's political science, converted his theory and even his words into the Constitution and Bill of Rights. Jefferson wrote in his later years that he considered "Bacon, Locke and Newton were three of the most important men who ever lived."

The new political commonwealth or republic then put Locke's theory to the test, and, despite the fact that Hamilton, the first Secretary of the Treasury, managed to organize the nation's economy as an economic oligarchy, the experiment proved it was quite possible to use a political commonwealth in a sophisticated and expanding nation. It was so successful, in fact, that most European nations eventually adopted a political commonwealth or democracy.

And the very fact that the first political commonwealth or democracy that used Locke's discovery, with Bacon's guidance, is now the oldest, most continuous and most successful political government in history, is a credit to Bacon, and verifies his view that

systems founded on *natural* behaviors tend to grow and prosper, but systems based upon unnatural behaviors tend to stagnate and languish.

"Signs also are to be drawn from the increase and progress of systems and sciences. For what is founded on nature grows and increases; while what is founded on opinion varies but increases not."



John Locke
Discoverer of How to Create
Political and Economic Democracy

III

Discovering A New Economic System

Following in Locke's footsteps, we'll now search man's behavior for a *naturally* occurring system of economic production and trade that doesn't use money, and that has been rejected by society as so clumsy and difficult to organize as to be *impossible* to use in a sophisticated society, and we will stick to facts and reject the opinions of schoolmen.

We can start with the historic fact pointed out by Locke that there were many

very sophisticated societies with an economy producing and trading before money was invented. For example, biblical Mesopotamia had a sophisticated and extensive empire before money was invented, and the ancient Egyptians produced the pyramids and operated their extensive empires before money was invented. In fact, historians tell us there were lots of sophisticated empires in the old world before the monetary system was developed about 700BC.

And, for a more recent and historically confirmed example, the highly sophisticated Aztec, Mayan and Inca empires were built without the use of money, and the Spanish conquistadors reported their cities were in many ways as sophisticated and prosperous as cities in Europe. And it's important to note, as soon as the conquistadors introduced the monetary system, the Indians lost access to their resources and sunk into abject poverty.

And, we must also note the important fact that all of these societies that prospered before the invention of money; did so with very primitive communication, accounting, and organizational technology. They didn't even enjoy the use of a practical written language. We can only imagine what they might have accomplished with modern

electronic communication, accounting, and organizational technology.

Locke, in his *Second Treatise, Chapter V, Of Property,* gives us an exhaustive description of how the moneyless economies worked. He notes that, before societies invented money, people had free access to the earth's resources, and made private property out of those resources with their labor. And, in the absence of money, people were not inclined to create more private property than they could use before it spoiled. As for trading goods and services, he found people used simple barter.

But, Locke notes, the appearance of the monetary system granting permanent unlimited power to the holder totally corrupted the system, for people then began to accumulate more than they needed, and the economic injustice we find today began. Locke dwells exhaustively on the subject, but I'll quote a few paragraphs to provide an idea of the theme of his findings.

"And thus it is very easy to conceive how labor could at first begin a title of property in the common things of nature, and how the spending it upon our uses bounded it. So that there could then be no reason of

quarrelling about title, or any doubt about the largeness of possession it gave.

"Right and convenience went together, for as a man had a right to all he could employ his labor upon, so he had no temptation to labor for more than he could make use of . . . it was useless, as well as dishonest to carve for himself too much, or take more than he needed.

"Thus in the beginning no such thing as money was anywhere known. Find out something that has the use and value of money amongst his neighbors, you shall see the same man will begin presently to enlarge his possessions."

In making this observation Locke swept aside the opinions of schoolmen who lauded money as the "grease" of the economy. Locke found that the invention of money didn't help the flow of the economy – it corrupted the democratic economy intended by nature. Bacon, if faced with these facts would say if man wants a system that will grow and improve, he needs to go back and scientifically develop the organization of the economy as it existed *before* the invention of money.

Bacon would point out that the monetary system is not a *natural* system. It does not occur in nature. No animal uses it except man, for it is wholly a product of man's

imagination. He'd note that the opinion that money has any value is not a fact, it is merely an *opinion* of mankind that is not reflected anywhere in nature. So, if man uses the monetary system, it will not bode well for mankind because systems based on opinion may vary but they do not grow or improve.

"For what is founded on nature grows and increases, while what is founded on opinion varies but increases not. . . Whereas the arts founded on nature and the light of experience . . . are continually thriving and growing, as having in them a breath of life; at first rude, then convenient, afterwards adorned, and at all times advancing."

So, returning to Locke, we find he not only discovered an alternative to political oligarchy, he also discovered an alternative to economic oligarchy. He obviously decided that 17th century Englishmen were sufficiently educated, and the technology of political communication and organization were well enough advanced, that England could develop and use the republican system of self-government to replace its political oligarchy, and in his Second Treatise he completely described how to do so. The rest of course is political history.

However, Locke must have recognized that in the 17th century the level of education of people and economic communication and organizational technology were not well enough advanced to be able to create an economic democracy to replace economic oligarchy. So, like a good scientist, Locke merely reported his findings that the invention of the monetary system had corrupted the *natural* economic behavior of man without further comment, and left the creation of economic democracy to the future.

However, we'll discover that today society does have the level of education and the technology to improve the moneyless democratic economic system. Locke found that before the invention of money there were only *three* things necessary to operate a sophisticated economy – *labor, organization,* and *resources* – and we'll find that modern society has all three ingredients highly developed and readily available.

In the following chapters we'll address each one of the three ingredients separately, and end with a good idea of how to create an economic democracy with readily available education and technology to replace the monetary system and economic oligarchy, and put an end to the inefficiency, instability and

injustice. We'll discover that all we need do to change the course of civilization is to use applied science and restore the democratic economy nature intended.

IV

Self-governing Labor

Schoolmen argue that, even if we could get access to resources and have the necessary organization technology, we could never expect ordinary people to self-govern a sophisticated modern economy. They insist that society needs the money barons and the profit motive to guide and drive people in a sophisticated economy.

But, again, if we compel ourselves to put these notions aside and look at the facts, we will discover the money barons and profit motive have nothing to do with production and distribution. Most money barons haven't the foggiest notion what goes on in the production and distribution of goods and services. They are only interested in the manipulation of money. Production is merely a secondary consideration.

The production and distribution of goods and services are handled by motivated

people self-governing their economic behavior. The people are not directed by money barons or driven by the profit motive – not just a few here and there – but literally the millions of people working every day in the economy.

"It is not moneys that are the sinews of fortune; it is the sinew and steel of men's minds, wits, courage, audacity, resolution, temper, industry and the like."

In all vital areas of our economy where we want to avoid the corruption that comes with using money, we rely upon well developed organization and people motivated by a sense of duty, pride of workmanship, and the pleasure of working with others as a team. In fact we can even say that the internal operation of all private business and government functions without money barons or the profit motive during the production and distribution of goods and services.

And our far flung armed forces function in a hundred and fifty nations without needing a monetary system. They all function on the sense of duty of the soldiers and sailor, and good military organization. Anyone demanding money to do something would wind up in jail or court-martialed and dishonorably discharged.

Take the specific example of the crew of a large aircraft carrier, nothing less than a huge self-contained modern city with hospitals, workshops, housing, food services, and many other working interactions. The crew functions often for long voyages on a sense of duty, pride of working together, and an extremely well-developed military organization.

And, for an example of more extensive people working without a monetary system, we can point to the operation of World War II, where millions of men and women slogged across Europe and Asia, constantly risking their lives. The soldiers, sailors, and marines storming the beaches on D-Day didn't work for financial gain. They did it out of a sense of duty, pride of workmanship, and good military organization. So the facts reveal that people do produce without using or being driven by money.

So when the schoolmen talk about the need for money barons and the profit motive, they are not referring to production and distribution for the money barons have no interest in such things. They are referring to the operation of the monetary system that, of course, needs money barons and the profit

motive, because that is what it is all about. It's not about production of goods and services.

But, if we brush aside the opinions of the schoolmen, and examine the facts, we find that we have available the first ingredient that Locke tells us is needed to operate a moneyless economy. We have all the highly educated self- governing and self-motivate *labor* we'll ever need on hand and readily available to create an economic democracy.

In the next chapter we'll go back to the facts and we'll see that we also have available Locke's second ingredient, the ability to *organize* society for production and distribution in a sophisticated moneyless economic democracy.

IV

Organization Technology

Today, we easily have the organizational technology to mobilize labor for any purpose. We proved that in WWII. Starting from the economic doldrums of the Great Depression, when unemployment was nearly 25% and the production of goods and services at 50% of capacity, we suddenly organized an economy with full employment and production of goods and services unequaled in human history.

Let's sketch the organization that we developed in WWII when we passed in a matter of days of from an economic depression where we didn't have any money to even pave our roads, to an economy that in a few month began to produce airplanes, guns, ships food, and housing in unbelievable quantities.

Let's see what we did to shift from an economic depression in December 1941 to a wartime economy in 1942. I was there and I can testify it was a fantastic economic awakening.

I. Planning: The first step in any war is to create a planning board made up of experts in all disciplines to scientifically organize society's resources and mobilize the manpower and know-how. This board of econoscientists would be made up of political scientists, business organizers, production engineers, lawyers, and every other discipline involved in the production and distribution of goods and services.

II. Organization: The planners no doubt would form a new holding corporation, and give the corporation the power to *expropriate* essential industrial corporations that already exist, and annex them as corporate subsidiaries. Each subsidiary would be run by a plant manager and his or her designers and production and distributions engineers and workers.

Each citizen of the society would receive one inalienable lifetime share in the holding corporation, making it effectively a corporate economic commonwealth. Each area of the society would elect a member of the Board of Directors of the holding corporation for a given term, and that body would elect the CEO.

The Board, made up of lawyers, production and distribution experts, and so forth, would create the operating rules and regulations of the commonwealth and enforce them, and the minutes of all meetings of the Board and all the rules and regulations would be posted daily on the internet.

The Board of Directors of the subsidiary corporations would be elected by the workers of the subsidiary, who would hold equal shares in both the subsidiary and the holding corporation. Also users of the materials produced, and the Board of the holding corporation would elect Directors of the subsidiary.

The subsidiary Board would appoint a CEO, and set wages based upon the value of the work involved according to a formula supplied by the holding corporation. Everyone involved in the organization would in some way be part of the production and distribution of goods and services needed by the economic commonwealth.

I'm sure that some of the combatant nations in WWII have a record of the organization of industry during the six years of war. I was a teenager working in a shipyard and industry everywhere ran 24 hours a day,

seven days a week with full employment because money became irrelevant. Like every other nation, we simply printed all the money we needed to mobilize the economy and win the war.

And the frenzy of production and distribution didn't stop with the end of the war. The Europeans and Japanese kept producing to rebuild their bombed out cities and infrastructure, and America built its interstate roads all from inertia of the war years. It was a good ten years before the economies of the world became concerned again about money and returned to normal.

I served in the Navy and went to college on the GI Bill and I was shocked to be told by the schoolmen that money was the "grease" that oils the economy when I had witness with my own eyes that it was the "sludge" that impedes production and distribution. It was then that I realized the disparity between the opinions of the schoolmen and reality.

II. Resources: The citizen-owned holding corporation would also have the power to *expropriate* the essential resources required to produce the war materials needed. The holding corporation would allocate the resources to each subsidiary necessary for it to

reach its quota of production. Thus, elected representatives of the citizens would effectively control society's resources.

IV. Conflict Resolution: A Board of Appeals would be established with the duty of resolving all conflicts between corporations, between workers and corporations, between users and corporations, and any other dispute that arises in the commonwealth. The decisions of the Board would be reviewable by the civil courts of the political commonwealth.

V. Economic Rights: Every citizen would have an inalienable right to be employed at a fair wage by the commonwealth industries. Robots would perform as many jobs in production as desired to reduce the time citizens had to work, but without reducing worker's wages as their hours diminished. This would meet the goal of organizing an economic system to employ modern technology for the benefit of the people.

VI. Medium of Exchange: In order to produce and distribute goods and services in such an extended system would require a *medium of exchange.* But it is here that we'll make a great change, for the power granted by the new medium of exchange would be

severely *limited* to prevent the injustice that Locke notes occurs with the use of the *unlimited* power of money. Here, too, we'll use electronic technology not available in WWII.

Workers would be paid with electronic *credits* on a sliding scale according to the value of their participation, and the credits would be used by the citizen to purchase goods and services from the system storehouses and service units. Or they could be used to purchase personal services from individuals, and those individuals could then use the credits at the storehouses and service units.

However, since the credits would bestow economic power upon the holder, the power of the credits would be *limited* as to term. They would expire at the end of each month, at which time able bodied citizens in the commonwealth would be required to go back to work to earn more credits for purchases during the new term. Children, students, the disabled and retirees would receive credits each term free.

And the credits would not be physical in form. They would be electronically deposited at a central bank organized by the commonwealth, and spent by the workers with a debit card. Thus, the society would

always know how much credit is in the system, where it is, and how it is being used – important information that would serve to regulate production, to set wages, and to prevent economic crime such as the sale of drugs.

As for the exchange of goods and services within the corporation, the medium of exchange could be credits or by requisition as is the case in industry, government and the military. As for the exchange of goods and services between the corporation and private enterprise, or with foreign enterprise, that would be handled strictly by barter for the use of money would be illegal in and by the commonwealth.

This system would have all the effects of a monetary system, but, because it has a *limited* term, it would have none of the detrimental effects of money. It would be an effective medium of exchange, and an effective way to reward good behavior, but it would not provide the holder with the raw unlimited power of money. And, because, unlike the other organization technology copied from WWII or already in use, the system is new and untested, it should be experimentally developed and tested before adoption.

VII. Accounting: There would be a universal electronic point-of-sale accounting system. As soon as something is sold at the system market place or used in production, the manufacturing subsidiary would be notified to produce to replace the item. Thus, once an inventory is set up by the elected Directors as determined by supply and demand, the inventory would automatically and accurately be maintained.

VIII. Application: The commonwealth system would only apply to the production, distribution and service operation of the essential industries. Once workers get credits, they could do what they wish with them. They could use them to purchase goods and services at the company storehouse, sell them for money or gold, or they could even use them to gamble at casinos.

And the commonwealth organization would not necessarily include the entire economy. For example, society could create a commonwealth system for the unemployed so they could earn their keep with their labor. This would take the load off the monetary system, and help it function more efficiently, and even help to prolong its usefulness.

In short, we'd end with a hybrid system. The commonwealth would produce essential goods and services, and the monetary system could produce non-essentials, and continue to be used on the entire consumer side of the economy. Such a hybrid system would probably be necessary because some people are not going to willingly dispense with money even if they have to trade with gold or beads.

IX. Trade: The commonwealth would trade with the private sector and other societies only by barter, even if the outsiders remain on the monetary system. There would be a constitutional separation of the monetary system and the commonwealth, for, as Locke noted, the introduction of money in any way is an invitation to corruption of the natural justice of a commonwealth.

X. Operation: Once set up, computers would determine the production and salary schedules, and the number and type of workers necessary. Ultimately, robots would do most of the work, and people would only be required to labor the amount of time necessary for them to earn the credits to supply their needs.

"Meantime, let no man be alarmed at the multitude of particulars, but let this

rather encourage him to hope . . . for this road has an issue in the open ground and not far off. The other has no issue at all, but endless entanglement."

As we can see from my thumbnail sketch, the physical organization of a commonwealth would be simple. It would be designed to *limit* economic power, with the term of the elected Board of Directors limited, and the term of the medium of exchange limited. And, since we already have experience in a political commonwealth, and know the importance of limiting power, there is nothing new required in that aspect.

And there's nothing new about the physical organization of a commonwealth. It's merely a reorganization of well-developed already existing corporate structure with the corporate stock owned equally by the people, and the corporation operated for the people, with the goal of using modern science to benefit the life, liberty and the pursuit of happiness of the people.

And we know from experience in WWII that, if we don't worry about money, and put the available self-motivated labor and the modern technology of production organization to work, society has the capacity to bury the world in goods and services. In twenty years

the world would easily fight and win a War on Poverty.

"Noble inventions may be lying at our very feet, and yet mankind may step over without seeing them . . . Such is the infelicity and unhappy disposition of the human mind in this course of invention, that first it will not believe that any such thing can be found out; and when it is found out, cannot understand how the world should have missed it so long."

"And this very thing may be justly taken as an argument of hope; namely there is a great mass of inventions still remaining which . . . through the transferring, comparing, and applying of those inventions already known, by the help of science, new inventions may be deduced and brought to light."

But the problem is we still lack the third ingredient for production and distribution – society still lacks free access to *resources.* Society's resources are by agreement still the private property of the money barons and they hold society ransom. And herein lays the problem that has to be resolved before society can create a moneyless economic democracy.

V

Free Access to Resources: The Problem to Be Resolved

All forms of commonwealth or democratic organization require access to resources, and long ago in its childhood, society gave up its right of access to its political and economic resources, and allowed individuals to legitimately claim them as private property. Political and money barons took control of the resources and began to demand ransom from society.

But in 1776 the American people, after much thought, decided to stand up for their rights, revoked the agreement regarding political resources, and took control of their political assets to form a political commonwealth or democracy. But American society did not stand up for its rights concerning economic resources, and allowed them to remain private property. So, in 1776, America merely replaced *land* barons with

money barons, and tyranny shifted from politics to economics.

The decision to revoke the old agreement of access to its political resources in 1776 was a traumatic move for society, for the English Lords and King who owned the different American colonies were deprived of their property without just compensation. The same thing happened when the various colonies in Asia, Africa and the Middle East declared their independence, and the foreign owners were deprived of their property without compensation.

Now, in order to create an economic commonwealth or democracy, society will have to get access to its economic resources and means of production. If society decides to create only a limited economic democracy to provide jobs only for the unemployed, society can do as it did in WWII and print money and pay the owners in inflated dollars and use the resources to fight a War on Poverty.

However, if society decides to go whole hog and convert the entire production side of the economy to an economic democracy, it will need to revoke the long standing agreement regarding economic resources, and take control of them without compensating the

owners as they did their political resources in 1776.

Unfortunately, we don't have much time to make a decision. Every year robots are pushing the monetary system closer to the brink. If we don't make the choice soon, growing unemployment and austerity programs will push the unemployed to violence. We must change our economic government from the oligarchic monetary system to an economic democracy before economic Armageddon.

So let me repeat for emphasis Jefferson's eloquent justification for society's expropriation of political resources 1776.

"*We hold these truths to be self evident, that all men are created equal, that they are endowed by their creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness – that to secure these rights governments are instituted among men, deriving their just powers from the consent of the governed – that whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government laying its foundation on such principles and organizing its powers to such form as to them shall seem*

most likely to effect their safety and happiness."

Of course, schoolmen will say Russian society expropriated its economic resources and means of production in 1917 without compensating the owners, and the Russian Revolution ended in tyrannical chaos. They tout this failure as proof that a commonwealth is *impossible;* solemnly implying that society must always suffer the inefficiency, instability and tyranny of capitalist oligarchy as the best of all possible worlds. Schoolmen don't believe society is capable of economic self government.

"*The philosophy now in vogue embraces and cherishes certain tenets, the purpose of which is to persuade men that nothing difficult, nothing by which nature may be commanded and subdued, can be expected from art or human labor . . . and all for the sake of having their art thought perfect, and for the miserable vain glory of making it believed that whatever has not yet been discovered and comprehended can never be discovered or comprehended hereafter."*

But, if we sweep aside the opinions of the schoolmen, and examine the facts, we'll see the Russian Revolution failed because it wasn't done scientifically. The Russian people had no plan, no prior experience in economic or political self-government, and, most

important, they didn't abolish the monetary system when they expropriated their resources. They simply turned them over to the control of a central committee that used the resources to grow rich and more tyrannical than the private owners.

The American political revolution, on the other hand, succeeded where many other political revolutions had failed, because the revolution was done quite scientifically. The people had a half-century of experience in political self-government directed by Locke's detailed plan, and, when they took legitimate control of their political resources, they organized a political commonwealth to limit the power of its politicians to abuse the resources. Otherwise they'd have ended with another king and barons and the same tyranny.

So, in order to create an economic commonwealth, it is vitally necessary to do it scientifically. Society would need a definite plan of organization, a well-tested moneyless medium of exchange, at least some guidance of what to expect in economic self-government, and, most important, it needs to organize an economic democracy to limit the power of its economic leaders. Otherwise, leaders of society's economy would use the resources to

grow rich and tyrannical as did the central committee in Russia.

In the old days, Bacon would urge someone with the prestige of a John Locke to use the scientific method to investigate economic behavior, publish the findings, and then step aside to await informed leaders of society to use the information to start the ball rolling. That's how the American political revolution happened, but it took a full half-century of experimental preparation to get the job done.

Today that approach won't work. We're living in an advanced Age of Science, and the science of robotics is rapidly pushing the monetary system into obsolescence. Society doesn't have a half century to spare. We need to immediately create an econoscience to scientifically prepare for the transformation of our economy from a monetary oligarchy to a moneyless economic democracy while we're still muddling peacefully along in the old system.

Bacon and Locke, however, would warn any advocates of establishing an econoscience that there is a troublesome adversary awaiting anyone who speaks out against the monetary system. This adversary will resist

even the organization of an econoscience, much less an investigation to develop an alternative for the monetary system. In the next chapter we'll reveal the troublesome adversary, and in the final chapter learn how Bacon and Locke would advise econoscientists to overcome the adversary.

Adam Smith
Chief apologist for Mammon

VI

The Troublesome Adversary

"Neither is it to be forgotten that in every age science has had a troublesome adversary and hard to deal with; namely superstition and the blind and immoderate zeal of religion."

Francis Bacon

Bacon and Locke would tell us that economically society is still stuck in the medieval *Age of Faith.* They'd note the monetary system is not a secular human behavioral system. It is a well-organized and zealous idolatry centered upon the worship of money, or, as it is often referred to by other religions, the god Mammon. The world hasn't

yet by any means moved into the Age of Science in economic behavior.

And it is a powerful idolatry, for Mammon is not an invisible spirit residing in some remote universe. Mammon is a physical idol we can hold in our hand, put in a safe, and we can constantly see it demonstrate its awesome power over people. And we are so deeply addicted to using its raw unlimited power, that, like all addicts, we are blind to the damage our use of the monetary system is doing to our civilization, and we can't imagine life deprived of the thrill of using it.

In the past, religious apologists warned us that Mammon was an evil agent of the Devil, with Timothy going so far as to write: "The love of money is the root of all evil." But, as Luther noted in his 95 Theses, even the Pope and the Church fathers fell under the influence of Mammon. Society eventually struck an uneasy bargain. If society worships God in Heaven on Sunday, it can worship Mammon the rest of the week without condemnation.

But in 1776, the very year political science was to begin its first formal experiment in political democracy, the English schoolman, Adam Smith, completely reversed

the field. His *Wealth of Nations* declared that money isn't evil, but is the wonderful cause of all of man's prosperity. And, because it was written in the Age of Science, many hail the book as a product of the scientific enlightenment.

However, had Bacon been alive at the time, he'd have recognized Adam Smith as just another medieval schoolman writing an apology for money in the style and tradition of Aristotle. He would have warned us to beware of this kind of empty logic, for, not only is it useless, it clogs up the mind with circular arguments that end where they begin.

"The logic now in use serves rather to fix and give stability to the errors which have their foundation in commonly received notion than to help the search after truth. So it does more harm than good."

Bacon would have noted that Smith begins the *Wealth of Nations* by dividing the economy into qualitative categories of *land, labor, and capital,* just as Aristotle divided the physical universe into qualitative categories of *earth, air, fire and water.* He didn't divide it into its physical parts like a science.

"The human understanding is of its own nature prone to abstractions and gives a substance and reality to things which are

fleeting. But to resolve nature into abstractions is less to our purpose than to dissect her into parts, as did the school of Democritus which went further into nature than the rest. Matter rather than forms should be the object of our attention, its configurations and changes of configuration, and simple action and law of action or motion, for forms are mere figments of the human mind.

Then, like Aristotle, Bacon would note that Smith spins webs of logic around the categories, treating them as if they were the physical *base elements* of the economy, when they are nothing but empty qualitative categories created by the human mind.

"The most conspicuous example of the first class was Aristotle, who corrupted philosophy by his logic; fashioning the world out of categories; assigning to the human soul the noblest of substances, a genus from words of the second intention."

Then Bacon would note that Smith copies the panegyric schoolmen used to laud the faith-based political oligarchy. Their argument was that political prosperity is created by God whose "divine hand" anoints the king and lords to control the nation's politics, and, if the people have faith in God and do as they are told by the king and lords,

the anointed will create the best of all possible political worlds.

In *The Wealth of Nations* Smith simply repeats the panegyric. He argues that economic prosperity is created by money, whose "invisible hand" anoints economic lords to control the nation's economy, and, if the people have faith in money, and do as they are told by the lords, the anointed will create the best of all possible economic worlds.

And Bacon would note that Smith, like all schoolmen, had little respect for humanity. Smith implies the sinew of prosperity is the "invisible hand" of money, and that mankind is merely a mindless laborer driven by greed. There are even passages in the *Novum Organum* that indicate that Bacon may have anticipated the appearance of an Adam Smith.

"In their idle and most slothful conjectures, schoolmen ascribed to substances wonderful virtues and operations as to aim rather at admiration and novelty than at utility and fruit."

"It is not moneys that are the sinews of fortune; it is the sinew and steel of men's minds, wits, courage, audacity, resolution, temper, industry, and the like."

"The philosophies now in vogue embrace and cherish certain tenets, the purpose of which (if it be diligently examined) is to persuade men that nothing difficult, nothing by which nature may be commanded and subdued, can be expected from human labor . . . which tends wholly to the unfair circumscription of human power, and to a deliberate and factitious despair; which not only disturbs the auguries of hope, but also cuts the sinews and spur of industry . . . and all for the sake of having their art thought perfect, and for the miserable vain glory of making it believed that whatever has not yet been discovered and comprehended can never be discovered or comprehended."

"Nor is it only of the systems now in vogue, or only of the ancient sects and philosophies that I speak; for many more plays of the same kind may yet be composed and in like artificial manner set forth; seeing that errors the most widely different have nevertheless causes for the most part alike."

And, Bacon would note, as with all works of schoolmen, Smith's *Wealth of Nations* is not about *how to* organize production, distribution, and services to create prosperity. It is a logical treatise about *where* prosperity comes from. Smith argues prosperity comes from the "invisible hand" of money and man only has to have faith and do as he is told.

"By far the greater evil is that they make the quiescent principles wherefrom, and not the moving principles whereby things are produced, the object of their contemplation and inquiry. For the former tend to discourse, the latter to works."

"For they bring them into the view of the world so fashioned and masked, as if they were complete in all parts and finished . . . . It is nothing strange if men do not seek to advance things delivered to them as long since perfect and complete."

And, Bacon would note, like all schoolmen, Smith wrote only about money's positives. He tells us at great lengths how the invisible hand of money has created all the prosperity in the nation. He didn't mention the system's woeful inefficiency, instability, and the corruption, crime and injustice that accompanies its use.

"It is the peculiar and perpetual error of human logic to be more moved and excited by affirmatives than by negatives; whereas it ought properly to hold itself indifferently disposed towards both alike. Indeed in the establishment of any true axiom, the negative instance is the more forcible of the two."

And, Bacon would note that, as with all religious *faith-based* systems, Smith's sect of "capitalism" was followed by Marx's sect of "socialism," agreeing with Smith that money

was the cause of prosperity, but arguing that the means of production should be owned by the government, and the anointed better regulated.

And Lenin created the sect of "communism," agreeing with Marx that money is the cause of all prosperity, and the means of production should owned by the government, but arguing the anointed should be sent to Siberia, and their money taken over by a central committee as well.

And, Bacon would note, as with all such superstitious idolatry, the sects are constantly at odds, with conflicts often flaring into horrible and irrational wars. The conflict between capitalism and communism in the last century was like the Hundred Years War between Christian sects in Europe, often taking civilization to the brink of disaster.

But, ultimately, regardless of the sect that gains dominance, the economy always ends in the same oligarchy with a few of the anointed accumulating all the money power. No matter what sect controls the money in society, society always ends with the same poverty and instability all accompanied by corruption and injustice.

"For let a man look carefully into all that variety of which the arts abound, he will everywhere find endless repetitions of the same thing, varying in the method of treatment, but not new in substance , , , for it is fruitful of controversies but barren of works . . . and all the succession of schools is still a succession of masters and scholars, not of those who bring things to further perfection."

And we can see for ourselves that our monetary system is faith-based for money only works if society has *faith* in the money god and it's anointed; and falters whenever faith falters. The monetary system is all about having and keeping the faith. We appoint high priests as "keepers of the faith," who, in turn, employ an army of soothsayers to search the economy for, and to interpret, "signs" of faltering faith.

And we are constantly concerned about the level of faith, for we hate the "inflation" of money that comes from faltering faith. But the great mystery is the fact that "deflation" created by excessive faith is even worse. So our high priest must watch the signs and make sure faith is balanced somewhere between inflation and deflation.

And we know that, in order to maintain faith in money, the high priest must keep the amount of money in circulation in *short supply,* for our faith in money requires that it be kept rare like gold and silver. So, there's never enough money in circulation to allow everyone to prosper. Thus, to sustain faith in money, we condemn a third of our society, and most people in the third world, to struggle in poverty.

And the way we determine when to adjust the money supply is to watch the level of unemployment. If the number of people exiled from the economy exceeds 7% of the population, the High Priest orders more money issued. If it falls below 7%, they call for a reduction in the money supply. Thus, to maintain faith in money, we not only condemn millions to poverty, we exile millions from participating in their own economy.

So, as we can see, in the monetary system we don't have a goal of producing goods to end poverty. Our goal is to protect our faith in money. And, since money is kept in short supply to protect the faith, and production depends upon the money supply, production is also kept in short supply. As a result, while every advanced society has the capacity to produce enough goods to create full

prosperity, all limit production to protect the faith in money.

As for the confusion we experience using the money system, it is created by our foolish notion that we can represent goods of *fleeting* value, with money of *fixed* value. In other words, we're foolishly attempting to represent apples with oranges, and as everyone knows this creates confusion. You can only accurately represent a thing of *fleeting* value with a thing of *fleeting* value.

Today, of course, even schoolmen realize something is terribly wrong in the economy, but, notice, they *never, never blame the monetary system.* Instead, they blame the problems on the difficult nature of economics, the obscurity of economic problems, and, most important, the weakness of man's ability to understand economics. All end with the typical schoolman logical conclusion that it is *impossible* for man to create a stable economy providing prosperity for all, and that the economy will always cycle from boom to bust and back again.

"For even they who lay down the law on all things so confidently, do still in their more sober moods fall to complaints of the subtlety

of nature, the obscurity of things, and the weakness of the human mind . . . But not content to speak for themselves, whatever is beyond their own or their master's knowledge or reach, they set down as beyond the bounds of possibility."

It is time, now that man has learned in politics that faith-based behavioral systems are always inefficient, unstable and accompanied by corruption and injustice; to realize the same holds true for economic behavioral systems. But we don't recognize the problem, because we don't want to recognize it. We're blindly entangled with the worship of money and so in love with using its raw and unlimited power that, like drug addicts, we can't imagine living without the thrill of using the object of our addiction.

And all of the webs of logic of Adam Smith, Karl Marx and Lenin, and our modern schoolmen, and the hundreds of newspaper and magazines dedicated to disputing logic about money and the 'isms, all serve to fix society in the Age of Faith and prevent us from developing an econoscience and moving economic behavior into the Age of Science.

"As the sciences we now have do not help us in finding out new works, so neither does the logic which we now have help us in

finding out new sciences. The logic now in use serves rather to fix and give stability to the errors which have their foundation in commonly received notions than to help the search after truth. So it does more harm than good."

But, if we can overcome this blindness and recognize that the monetary system is a powerful primitive idolatry, we can begin to understand why society adopted the monetary system long ago, and why we are so blind to the damage using a faith-based economic system is to society. And, too, we can see that advocates of a new econoscience can expect rejection, and that it will come from the same troublesome class of adversaries that troubled advocates of every new science.

The *first* class is the vested interests, members of the anointed or central committee whose power over society rests on their position in the monetary system. This class can be physically dangerous, for it includes people who will stop at nothing to protect the monetary system to retain their source of power.

The *second* class is the devout worshippers of Mammon. These are people deeply addicted to the thrill and excitement of using the raw and unlimited power of money.

Like all addicts, they devoutly believe life would be *impossible* without the addictive thrill of using the raw unlimited power of money, and are terrified by the thought of being deprived of the source of the thrill.

"The idols and false notions which are now in possession of the human understanding, and have taken deep root therein, not only so beset men's mind that truth can hardly find entrance, but even after entrance is obtained, they will again at the very instauration of the sciences meet and trouble us, unless men forewarned of the danger fortify themselves as far as may be against their assaults."

And the *third* class is the army of schoolmen who have spent their lives writing, teaching, and disputing the logic of the "isms" of monetary economics. Some will welcome econoscience, but most will see it as a threat, and blindly try to block its acceptance at universities and seats of government. As Bacon always notes, it is this class that causes the most trouble.

"Men become attached to certain particular sciences and speculations, either because they fancy themselves the author and inventors thereof, or because they have bestowed the greatest pains upon them and become most habituated to them. But men of

this kind, if they betake themselves to philosophy and contemplations of a general character, distort and color them, in obedience to their former fancies."

But, despite all the problems Mammon's worshipers might present, we have good reason for hope, because, fortunately, advocates of physics, medicine, and political science were faced with the same troublesome adversary, and they managed to survive and have their sciences flourish. In the next chapter we'll see how, guided by Bacon, they did so.

VII

Overcoming The Troublesome Adversary

"Let there be two streams and two dispensations of knowledge and likewise two tribes or kindred of students in philosophy – tribes not alien to each other, but bound together by mutual service, in short – one method for the cultivation, and another for the invention of knowledge."

Francis Bacon was not a scientist. He was a brilliant lawyer, the Chief Prosecutor of England, then Chief Judge, and a student of the Rules of Evidence used in the English Law Courts. In the *Novum Organum* he adapted those rules to the investigation of nature, and, of these, he considered the "hearsay" rule the most important and very foundation of the search for truth.

"For I admit nothing but on the faith of eyes, or at least of careful and severe examination; so that nothing is exaggerated for wonder's sake, but what I state is sound and without mixtures of fables or vanity . . .

"Those who aspire not to guess and divine, but to discover and know, who propose

not to devise mimic and create fabulous worlds of their own, but to examine and dissect the nature of the very world itself; must go to the facts themselves for everything. . .

"Lay it down once and for all as a fixed and established maxim that the intellect is not qualified to judge, except by means of induction of fact, and induction in its legitimate form."

Bacon also recommended that all scientific investigation be conducted with the same decorum used in the English courtroom. And, while he insisted that all prior decisions made or reported by philosophers need to be checked and rechecked against experience or experiment, he urged scientists to treat the philosophers themselves with complete respect.

"The honor of the ancient authors remains untouched since the comparison I challenge is not of wits or faculties, but of ways and methods . . . to make a stand upon the ancient way, and then look about us, and discover what is the straight and the right way; and so to walk in it."

And, since the *Novum Organum* was published in 1620, while the world was still in the Age of Faith, and the physical world was seen from the religious viewpoint of view, and

to publish any view that conflicted with religion was physically dangerous, Bacon advised advocates of science to present science as a "handmaiden" to religion, and to conduct all investigations quietly without comment.

"But if the matter be truly considered, science is after the word of God the surest method against superstition, and the most approved nourishment for faith, and therefore is rightly given to religion as her most faithful handmaiden, for the one displays the will of God, and the other his power."

"It would be good that men in their innovations follow the example of time itself, which, indeed, innovates greatly, but quietly, and by degrees scarce to be perceived."

The whole tenor of Bacon's *Novum Organum* is that science should investigate the behavior of the universe, select those behaviors it believes would be beneficial to mankind, work to improve them, publish its findings with a complete record of how they were made, and let society be the jury of how the findings are applied. He urged science to act only as a guide and never a judge.

"A caution must be given the understanding against intemperance . . . This excess is of two kinds: the first being manifest in those who are ready in deciding, and render sciences dogmatic and magisterial; the other

in those who deny that we can know anything, and so introduce a wandering kind of inquiry that leads to nothing . . .

"I have not sought, nor do I seek either to force or ensnare men's judgments, but I lead them to things themselves and the concordances of things, that they may see for themselves what they have, what they can dispute, what they can add and contribute to the common stock."

Had Galileo read Bacon, he may not have gotten into his controversy fifteen years later with the Church, for the Church did not object to Galileo's finding about the heavens with his telescope. It only objected when he wrote a book ridiculing the biblical position concerning the solar system. Fortunately, the next scientific genius to come on the scene had read Bacon, carefully took his advice, and set the scene of a cordial relationship with religion.

The physicist Isaac Newton, the virtual dictator of the London Society, the first organization dedicated to Bacon's memory, and the first dedicated to the advancement of science, was educated in a seminary. He always made it very clear that science was not in competition with religion, and tactfully deferred to religion when any conflict arose.

Of course this deferential attitude was safer two centuries ago, but it was also an honest attitude, for Newton found many aspects of the physical world far beyond physical science to explain. He felt, for science to assume it knows all would be as bad as religious writers assuming they know all.

And religion responded by supporting Newton's work. Universities in Europe, for the most part supported by religion, opened their doors to his findings even when they conflicted with the Bible. Ultimately, all European universities established departments of physics, and generally left physicists free to explore the behaviors of the physical world without interference. Of course, when religion objected, Newton always avoided argument.

"The most beautiful system – the universe – could only proceed from the dominion of an intelligent and powerful being I call God . . . Tact is the art of making a point without making an enemy."

Astrophysics, unfortunately, didn't enjoy the same relationship. Trouble began with the missteps of Galileo, but things were then patched up with religion by later astrophysicists. Einstein, for example, showed extreme tact and respect for the duality when

he declared; "Science without religion is lame. Religion without science is blind."

And up until Einstein's death, religiously supported universities responded by accepting scientific theories of the universe even though they might disagree with scripture. But after the death of Einstein, the English astronomer Fred Hoyle became the spokesperson for astrophysics, and magisterially promoted his belief in a "steady state" universe that had no beginning or end.

This clearly conflicted with Genesis, but religion didn't really object until Hoyle publicly ridiculed Hubble's theory that the universe was created in a gigantic explosion, and is still expanding out into space, a theory that agrees with the story of Genesis. He laughingly referred to it as the "big bang."

The result was religion was furious, and religious leaders were able to get the scientific establishment to reject the "unified field theory" that had led astrophysicists to such enormous progress, and to adopt the "big bang" theory that agreed with Genesis. Today, most research money is spent to answer the question of *where* the universe came from, *where* it is going, and *how many* universes exist.

The result is that there hasn't been a new breakthrough in understanding of *what* the universe is made of, or *how* its behaviors are created since Einstein. Of course, there are still astrophysicists, but they are inhibited by their inability to correspond and discuss their ideas, for the establishment and the media are busy worrying about *where* the universe came from.

"By far the greater evil is that they make the quiescent principles wherefrom and not the moving principles whereby things are produced the object of their inquiry."

"In the customs and institutions of schools, academies, colleges . . , everything is found adverse to the progress of science, For the lectures and exercises there are so ordered that to think or speculate on anything out of the common way can hardly occur. And if one or two have the boldness to use any liberty of judgment, they must undertake the task all by themselves; they can have no advantage from the company of others."

Medical science has generally worked hard to retain good relations with religion. Immunology, surgery, and internal medicine, despite the fact they successfully conquered illness and plagues that religious prayer was unable to conquer, doctors in these specialties still show great respect for religion and

religious leaders, and go to great lengths to publicly state that spirituality can be as important to a person's health as modern medicine.

And religion responded positively. Hospitals and universities, largely supported by religious organizations, opened their doors to immunology, surgery, and internal medicine, accepting a duality where religion takes care of the spiritual and emotional part of illness, and these medical sciences take care of the physical part.

But genetics has not faired too well. The religious monk Mendel, using the scientific method, discovered that man could manipulate genetics, and his work was accepted by religion supported universities. And, later, when Darwin and Wallace discovered that genes could be manipulated by environmental conditions, even this work was accepted though it conflicted with the biblical writers that held that God made the world and the animals in six days.

But then, tactlessly, Darwin published his *Descent of Man,* arguing that man descended from the monkey, when biblical writers had made it clear that man was made in the image of God. It was not only tactless, it

was *unscientific*, for science is not interested *where* things come from, and the argument caused such friction between genetics and religion that it spilled over into politics, and has interfered with important stem cell research.

Political science, as we all are aware, took Bacon's advice to heart. The first act of Congress was to amend the Constitution with a Bill of Rights, and the first amendment insured the separation of church and state, and the freedom of religion. And religions have generally responded to the duality positively. Unfortunately, in some parts of the world this duality is not practiced, and those nations have suffered constant conflict and regression.

And this public display of deference to religion was very important to the success of the American political experiment; for, without the aid of The King of France, who held his position by "divine right" in the old ecclesiastical political system, the American Revolution might have been lost. Louis, of course, had political motives, but if the Americans hadn't shown respect for religion,

the French king would never have supported them.

I'd like to mention that Bacon would be disappointed at America's current attempt to push our political system on foreign nations by force. He would urge us to let political science improve American politics to demonstrate its success, and allow other nations to decide if they wish to adopt it. Bacon would say that political science, of all the sciences, should never become "dogmatic and magisterial."

But sciences should be like mines, where the noise of new works and further advances is heard on every side."

So, if econoscientists study the history of science since 1620, they'll discover that science has had its greatest success when it presents itself as a "handmaiden" to religion, and progress is impeded when it becomes dogmatic and magisterial. This is a lesson that advocates of econoscience need to keep in mind; for they will face the largest, most powerful, most durable, and most well-organized idolatry in man's history – the worship of Mammon.

And it is a pagan idolatry with no concept of justice, compassion, mercy or

forgiveness to soften its effect. Its most devout worshippers are so brutal that they even despise the poor, the sick, and the unemployed because these poor souls are burdens to the monetary system. And, naturally, they react violently to any attempt to tamper with or threaten the monetary system.

Both Bacon and Locke would tell econoscientists they must patiently discover how sophisticated societies like the Egyptians and Aztecs lived without a monetary system, and then determine how we can use modern technology to improve the system and combine it with political democracy to begin to self govern both.

But Bacon and Locke would tell us it's not going to be easy for schoolmen have twisted history in webs of opinion for so long, that it will be hard to sort fact from fiction. And, too, the hounds of Mammon will be wailing, so econoscientists will need to copy Odysseus, and lash themselves to the mast and let the sirens wail.

Fortunately, there is reason for hope, for other religions recognize the worship of Mammon is the source of most evil, and are dedicated to taking care of the poor and the sick, and may very well support econoscience.

They might even welcome econoscience as an ally if the scientists use the tact of Newton. In fact there's a good chance major religions may even become strong advocates of econoscience.

And, too, even the devout worshippers of Mammon are realists. They will support anyone who promises them a profit, and, fortunately, econoscience can do so. It can honestly promise to work to create a system to allow the poor and unemployed to become self sufficient, and no longer be a burden on the monetary system. Furthermore, since the new system will have no need for money, it will never call for any taxes.

And, too, the formation of a commonwealth will only apply to the production side of the economy. The consumer side would remain on the monetary system and unhampered, and that's where the profit lies. There are in fact many advantages to the monetary system that could cause supporters of the monetary system to support the institution of an economic democracy.

Bacon and Locke and Newton would advise advocates of econoscience to speak only of the advantages of the new system to the monetary system, keep a low profile, and always use tact to avoid any direct

confrontation. Do this, they'd say, and econoscience will eventually become acceptable, and be able to peacefully nudge economic behavior into the Age of Science.