


ON CAPITALISM AND INEQUALITY

Progress and Poverty Revisited

Robert U. Ayres

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Preface

Why did I write this book? The short answer is that Capitalism (with a capital C) is under serious challenge today, because if current economic trends are not stopped and reversed, much of the planet will soon be owned by a small fraction of its population. Our liberal democracy will be replaced by illiberal plutocracy or something much worse. The citizens of our Democracy need to understand why and how the machine that supposedly produces new wealth is actually concentrating existing wealth in the hands of a few ultra-rich plutocrats who already have excessive influence over the political process. People who vote need to understand the motivations and incentives of capitalists on the one hand, and the rules and constraints that drive the capitalist system down this self-destructive path, on the other hand. Finally, all of us need to understand why government needs to create mechanisms for systematic wealth re-distribution, not necessarily by means of taxes, in order to keep the capitalist “game” from running out of players.

This finally brings me to the point. This book is not mainly about the social and economic problems we face. It is mostly about the institutional structures and barriers that support the existing system. Solving problems, in every domain, requires sharing of knowledge, collaboration and cooperation. But capitalism, in its present form, is all about competition, if not outright conflict. It is a game with very few winners and a great many losers. The losers need to be kept in the game, or the system will choke itself to death. Taken to its extreme, one winner will take all. It won't be you.

This book touches here and there on the errors and omissions in textbook economic theory and how they support capitalist practice. It is also partly about conflicting and inconsistent “rights”, as between freedom, equality and opportunity vs. the rights of private property and the rights of owners and

lenders vs. the rights of renters and borrowers. I hope to bridge some gaps and, more, to provide some guideposts to future leaders. I wish I could do it all in 10 sharply written pages, but I am not that good at simplification. The reality is complex. It needs to be understood as a complex system. Bear in mind that this book will be a lot easier for you to read than it was for me to write. And I hope you have a little fun as you read.

Fountainebleau, France

Robert U. Ayres

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Introduction

Somewhere in the dim past philosophers have conceived of the idea that humans are born with “inalienable rights.” In the Declaration of Independence of the 13 English colonies in America, these were identified as the right to “life, liberty, and the pursuit of happiness” which is widely interpreted as self-ownership and the right to acquire and protect property. Those aims are vague enough to be generally acceptable and also nearly meaningless when it comes to enforcement. “Liberty” is an especially troublesome idea. If every person has the “right” to do anything he or she wants to do—the state of anarchy—there will inevitably be conflict with other people invoking the same rights. The usual compromise is to modify the notion of “right” to prohibit harming or interfering with the rights of others. This leads to the need for laws, and enforcement mechanisms (“the rule of law”) and a minimal government of some sort.

The short list of human rights recognized in the Declaration of Independence was significantly extended by the Bill of Rights (the first 10 amendments to the US Constitution). If you have not read the list recently, the first amendment specifically guarantees freedom of religion, free press, free speech, freedom of assembly, and freedom to petition. The second amendment guarantees the right of citizens to bear arms (in a regulated militia). The third amendment limits the government’s right to force citizens to quarter soldiers even in time of war. The fourth amendment limits the government’s right to search for and seize evidence or illicit substances (e.g. drugs). The next four amendments pertain to judicial process, the ninth amendment acknowledges that other rights exist and may be important (e.g. the right of privacy in marriage), while the tenth amendment spells out which areas are in the domain of the Federal Government and which are left to the States or the People.

I think it is time to include explicitly another right that we Americans brag about, that we claim distinguishes us from the rest of the world, but that we signally fail to deliver. I refer to the right of *equal opportunity*. Inequality of opportunity has been a major theme of social reformers ever since Thomas More. Some social reformers in the nineteenth century, notably the communists, argued that equal opportunity is inconsistent with private property. Equal opportunity seemed to them to require social (i.e. state) ownership of the “means of production.” This focus on state (i.e. government) ownership, vs. private ownership, has become a litmus test for the long-running contest between socialism vs. capitalism as philosophies.

Is that all there is to it? Obviously it is not. The question immediately arises: How does government come to exist in the first place? Does it organize itself? Is it a dissipative structure far from equilibrium as Prigogine might have suggested? What are its limits? Is it a natural consequence of the competitive interactions between persons in different circumstances? How are laws created in different forms of government? Of course, the world, as it exists today, is the not the result of interactions between Hobbesian individuals starting “from scratch.” The existing “system” is the consequence of a long and complicated history. Historical changes are certainly attributable to interactions at the individual level, but even more so, to interactions between families, tribes, communities, companies, states, and societies. Our understanding of the interactions between these entities is still quite limited, to put it mildly.

Knowledge is not just a collection of facts. Librarians sort books mainly by category: history, science, economics, politics travel, “self-help,” religion, biography, poetry, drama, detective fiction, science fiction, romance. Knowledge is also organized into theories. We have theories to explain observables. Newton’s theory of gravitation explained the motions of the stars and planets, but not the motions of electrons and protons. For that, Maxwell’s of electromagnetic forces was needed. More complex phenomena require more complex theories to explain them. The most complex phenomena, the behavior of heterogeneous human beings, as both as individuals and as components of various social structures, are still not well understood at all.

The only domain in the social sciences where theory is reasonably well developed concerns the behavior of “actors” (individuals and of business organizations) buying and selling goods and services in exchange markets. Yet those theories are seriously flawed, as this book will point out. One of the crucial flaws is that existing theory focuses too much on competition and the benefits of competition, without giving sufficient weight to the role of cooperation. This overemphasis on competition and its “winners” has led to laws and regulations that promote competition and protect the property of the winners while not sufficiently protecting the losers.

Philosophers have noticed the conflict between “freedom” for individuals, in the anarcho-libertarian sense, and social justice. What political libertarians today mean by “freedom” is minimal government. Some call it the “night watchman” state, where the only role of government is to protect private property from theft. Freedom, in that sense, is fairly close to anarchy. What do the rest of us really mean by “freedom”? The United States of America still calls itself “the land of the free”. But that was when land in Oklahoma was given free to new settlers—regardless of the opinion of the native population.

Freedom does not extend to non-payment of taxes, driving on the “wrong” side of the street, smoking cigarettes in public places, shouting “fire” in a theater, or leaving garbage on the street. Some think it allows them to keep their children out of school to work on the farm, or to force schools to teach “intelligent design” instead of evolution. Most conservatives, who want less government and no restrictions on gun ownership, also want to prohibit a variety of private actions, ranging from smoking pot, using contraceptives, abortion, or living and working in this country without “papers.” The capitalism we enjoy today allows us to overconsume junk foods (not to mention other kinds of junk) that cause obesity and simultaneously pollute the planet and cause climate warming.

I believe that there is room for compromise. Freedom to choose cannot be absolute, nor can equality of incomes or outcomes be guaranteed. Competition, within limits and subject to rules, has benefits, but cooperation is also essential. Equal opportunity cannot be guaranteed by law, any more than equality of outcomes. The best measure of an economic system is not aggregate wealth or income. The best measure, in my view, is whether opportunity for advancement, for the disadvantaged people in our society, has been increasing or not. By that standard, capitalism American style is a failure. I think the current system can be fixed, and the need is urgent.

Who am I to pontificate on such deep subjects? I am reminded of a story. It may be apocryphal. But it seems someone asked Pablo Picasso how long it took him to create his most famous painting “Guernica,” now at the Museum of Modern Art in New York. He thought for a while—a long while—and finally answered his interrogator with a phrase: “My whole life.” So, with apologies, here is a capsule history of who I am and how I came to write this book.

From 1954 through 1962, I was studying physics or working as a post doc on research. After the last US atmospheric nuclear test (1962), I was hired at the Hudson Institute to prepare a Report to the Office of Civil Defense on the environmental consequences of a global nuclear war (the report still exists). In the course of that effort, I read the only textbook then existing, on a new

subject “ecology,” by Professor Eugene Odum at the University of Georgia. Ecology was the buzzword that covered the whole set of interactions between plants, animals, and the physical environment. In 1966, I decided on a career change.

My introduction to economics occurred in 1967–1968, which I spent working at a newly created institution called Resources for the Future, or RFF. RFF was (and still is) a “Think Tank” mostly run by economists, focused on economic issues pertaining to future resource needs and availabilities. I devoted that year to working my way through a new subject, environmental economics, under the tutelage of Allen V. Kneese. Allen became not only my mentor in economic thinking, but my colleague and friend. We wrote several articles and papers together, in that year, on a range of topics involving environmental damages caused by industrial and municipal wastes and air and water pollution.

The paper that mattered most, in terms of later events, was an article published in the *American Economic Review* (AER) entitled “Production, consumption and externalities: A Materials-balance approach” (1969). What that paper said, briefly, was that all kinds of pollution and waste are direct, unavoidable consequences of the laws of thermodynamics (i.e. physics) and that this scientific fact has strong implications for economic theory that were not—and still are not—reflected in the standard theory as taught in schools and colleges. That paper planted a seed that never quite stopped growing.

But that seed took some time to germinate. After leaving RFF in 1968, I joined another ex-nuclear physicist, Theodore B. Taylor. Together we opened a consultancy in Washington D.C. with the grandiose name International Research and Technology Corporation (IR&T) to undertake studies on various scientific topics for the government. Ted Taylor specialized in nuclear weapons proliferation, safety issues, and nuclear power. I specialized in everything else, but with a main focus on transportation, pollution, and energy issues. Later (with other colleagues) I spent a lot of my time thinking about what later came to be called “industrial metabolism” or “industrial ecology.”

For decades, I have worked on the interfaces between science, technology, material flows, and—finally—economic theory again. I think it is fair to say that in the 1990s, I did experience a rather sudden and surprising insight not very different from the epiphany once experienced by an Arab named Thomas, (later awarded sainthood) on his journey to Damascus. It was a different insight, of course, but the nature of the experience was similar. What I realized one day (or night) was the simple fact that economic growth is driven by energy, in the sense of doing physical work. But I also noticed that energy (and work) are totally absent from fundamental economic theory. Physicists

tend to recognize the truth of this statement instantly. But economists rarely study physics. They see energy and work as “intermediate products” of capital and labor. The fact that energy can neither be created nor destroyed has not yet been accepted.

But this book is not about that, either. I have written about it elsewhere. It is about why financial capitalism is failing to deliver the American Dream, and what can be done about that.



Before Capitalism

Around 12,000 years ago, the glaciers were melting, and forests were growing on the newly exposed hills. Game was plentiful, and our ancestral hunter-gatherers were self-sufficient and reasonably well-fed. But as the glaciers retreated, the climate became warmer and drier, and the lowland forests were replaced by scrub and grasslands, forcing the inhabitants to become either peripatetic animal-herding nomads or to build defensible settlements and grow crops that require some time to germinate grow and ripen. From time to time, the nomads attacked the settlements. That cultural conflict still has echoes in the world today.

But by 8000 B.C., the *H. sapiens* population had outgrown the food supply available for hunting and gathering from forests, in several regions. Where both game and grass were scarce, our human ancestors learned to plant seeds and wait for them to grow. They become farmers. This happened first and primarily in the Mediterranean basin and specifically in the so-called fertile crescent where the Tigris and Euphrates flow into the Persian Gulf. This happened first in that area because it or nearby areas were the sources of the wild progenitors of most of the major food crops of today (Diamond 1998). Farming spread, gradually, from that area to other major river valleys such as the Nile, the Indus, the Brahmaputra, the Mekong, and the Yangtze-Kiang. Those river valley lands were fertile thanks to the annual floods, and there were no deep-rooted plants (perennial grasses and scrub) to make cultivation difficult.

There is a story, now largely discredited, that farming became established because it was easier and more productive than hunting. The truth is otherwise. We now know this from the smaller sizes of the skeletons of agricultural

workers as compared to their hunter-gatherer forbears. However, it is true that once farming got started in fertile areas, such as river deltas that receive annual silt deposits from spring floods, food production did grow rapidly. Storage of surpluses also increased.

Agriculture spread to dry grasslands much later. This required the invention of plows, yokes, and harnesses to enable tamed animals, like bullocks, to do the plowing. Farmers—or their rulers—learned to store grain (seed) crops from year to year. Later still they learned to store water and irrigate during dry seasons. Growing population pressures, and natural disasters, also led to tribal organization, tribal boundary disputes, walled cities, and—when the local food supply ran out—wars of conquest. The human population grew faster, in many years, than the agricultural food supply.

Urban civilization, as we understand it, probably began around 4000 BCE in the ancient Mesopotamian land of Ur, located near the mouth of the Euphrates River, near its confluence with the Tigris River in present-day Iraq. (There are no earlier remains of cities in Mesopotamia, probably because they were destroyed by floods.) Their language, now identified as proto-Indo-European, was the common ancestor of all modern European languages, as well as Urdu and Punjabi. Sumer had organized agriculture and a written language (cuneiform). It was taught in scribe-schools by 3500 BCE (earliest estimate). Icons or symbols—today we would call them letters of the alphabet—were first created by pointed sticks in wet clay. In fact, the written language may have already existed in that part of the world for hundreds (if not thousands) of years before the oldest surviving examples.

But in 3100 BCE (earliest estimate) the first system of abstract symbols for numbers was also created, and simultaneously, or soon after that, a system of bookkeeping for quantities of commodities (e.g., bread, beer, oil, dates, sesame, and wheat) followed. Each commodity had its own symbol, represented by a small clay token with a specific shape—rather like the letters of the alphabet or the icons used on personal computer keyboards today. At first, quantities were recorded in the form of physical piles of tokens. Later, records were kept by impressing the appropriate token on a moist clay tablet next to a number symbol. Our alphabet originated in Sumer, as did mathematics, the art of building, the wheel, and the hours of the day.

The earliest written “story” that we know of, in human history, is the *Epic of Gilgamesh*. The oldest Sumerian version dates from 2150 to 2000 BCE. The later, Akkadian version dates from 1300 to 1000 BCE. It was found in the form of 11 clay tablets in a library in Ninevah, an ancient city in Mesopotamia (now Iraq). The story describes the efforts of Gilgamesh, the legendary ruler of Uruk (who is $\frac{2}{3}$ god and $\frac{1}{3}$ human) to build a perfect wall around his city (Fig. 1).



Fig. 1 Foundations of a Neolithic dwelling at Tell es Sultan, in Jericho. [Wikipedia.org](https://en.wikipedia.org/wiki/Tell_es-Sultan), photo by A. Sobkowski

The wall—probably similar to the wall of Jericho—was supposed to separate civilization (inside the wall) from wild (“sauvage” in French) nature outside. Indeed, when the wall was finished, the city would become the ruler and manager of its neighboring farms and villages. Gilgamesh was obsessed with increasing the productivity of the workers on the wall. The workers on the wall become virtual slaves as described in Tablet 1 (Sedlacek 2011, p. 21).

*The young men of Uruk he harries without warrant
Gilgamesh lets no son go free to his father
Gilgamesh lets no girl go free to her bridegroom
The warrior's daughter, the young man's bride*

The actions of Gilgamesh in this part of the story strongly resemble the actions of present-day corporate raiders or leveraged buyouts (LBO's) that have taken over a struggling firm and who engage in “financial engineering” and “restructuring” to make the balance sheet look more attractive to investors. The villagers (peons) outside the wall would no longer be familiars and equals, but subjects of the ruler—needed to do the work—but otherwise kept

at a distance. They were relegated to the bottom layer of a hierarchy managed by military and civil officers, viziers, clerks, and tax gatherers reporting to the king (Mumford 1961).

Even Greece, where we suppose “democracy” was invented, it seems that their greatest philosopher (Plato) had a different vision. A recent critic points out the following:

In his vision of an ideal state, Plato does not allow guardian families to raise their own children. Instead they hand them over to a specialized institution immediately after birth. This is similar to the dystopias in Aldous Huxley’s “Brave New World” and George Orwell’s “1984”. In both novels, human relations and feelings (or any expression of personality) are forbidden and strictly punished.... (Sedlacek 2011, p. 22)

There is a lot more in the epic of Gilgamesh.

Later, in the Hebrew *Old Testament*, the “evil” farmer Cain (who grows crops) murders his “good” brother, the shepherd Abel. Cities in the Old Testament were regarded (by the nomadic Jewish prophets) as evil, corrupt places of sin and decadence, such as Sodom and Gomorrah.

Fifteen hundred later (2100 BCE), the city of Uruk in Mesopotamia had a population of over 60,000 on a land area of 5.5 square km, on the banks of the Euphrates River. It was governed by a semi-divine king, who controlled the army, and a chief priest who controlled the bureaucracy of civil servants (clerks, scribes, and accountants) in the Temple, which was located in the zigurat in the center of the city, replete with mosaics and magnificent gardens. On the top was a temple to the city’s deity Nanna, Goddess of the moon (Fig. 2).

Most of the fields, herds of animals, and marshes (fish farms) were owned by the Temple, which was dedicated to the God Nanna and his spouse Ningal (Martin 2014, pp. 38–44). The citizens worked and must have received rations—proto money—for their work because coins had not yet been invented.

But circa 2000 BCE, there was a major invasion of the territory of Ur. Ur was sacked, along with 16 other cities in the territory of Sumer. The invasion and destruction of Ur had an effect on the evolution of religion, at least polytheistic religions with many personal or local gods. Ur declined thereafter. The tribal leader known today as *Abraham* (“father of the Jewish people”) left Ur, with his retinue, going north (upriver), around 1800 BCE. His people, the Hebrews, were the first monotheists. All three of the modern major religions, Jews, Christians, and Muslims, are known as *Abrahamist*, given their strong historical links to the City of Jerusalem and the so-called Holy Land.

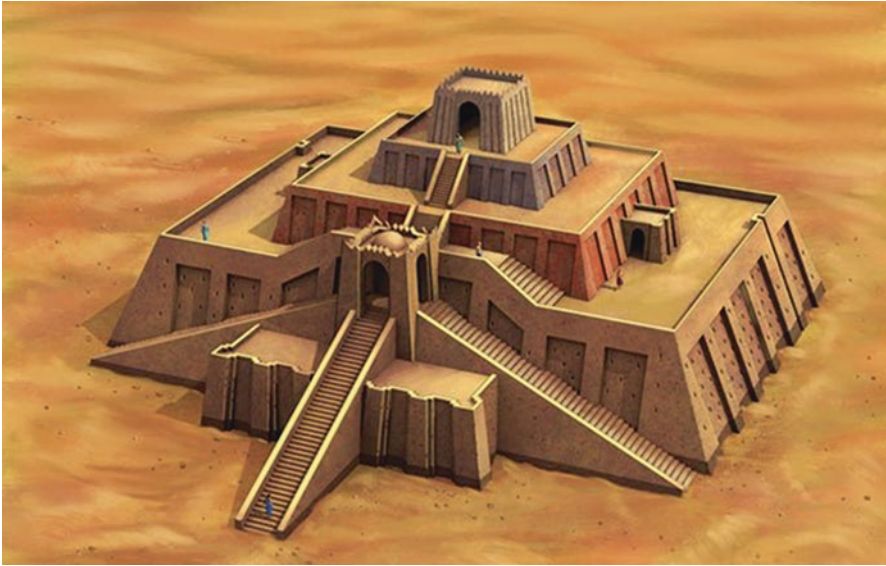


Fig. 2 The Great Ziggurat of Ur (Google Earth)

The Origins of Ethics and Morality

The most familiar, if not the first, code of ethics was the “Ten Commandments” of the Hebrews. It was allegedly delivered to their leader, Moses, by God, on the top of Mount Sinai. In those days, women were the property of their husbands. (In the Koran a woman is (still) valued at only $2/3$ the value of a man.) Gender equality is a relatively recent idea, and only in the more economically developed countries.

The most “advanced” countries in the world today are struggling to rectify an age-old imbalance between the rights and privileges of men *vis-a-vis* the rights of women. Women only got the right to vote in most countries in the twentieth century. The Scandinavian countries are the most advanced in terms of legal rights (e.g. re marriage and child support) and equality of income. But there are still major parts of the world where females are not treated as legal equals of males. As noted above, orthodox (Wahabi) Islam—Saudi Arabia, in particular—is the most obvious retrograde example.

The prehistoric origins of gender imbalance are fairly obvious. They stem from the biological fact that women in prehistoric times had to spend most of their adult lives—usually starting soon after puberty—being pregnant and/or caring for babies or small children. This is a direct consequence of the fact that hominin children (unlike the offspring of four-legged animals) cannot care

for themselves until they are several years old, and that “growing up” time for human children is 10–12 years (roughly until the age of puberty). The caregivers were the adult—or adolescent—females. The females, in turn, needed protection while taking care of infants.

In nomadic tribes, the males had to defend the group and to obtain food by hunting for game. However, in forested areas some of the “gathering”—collecting nuts, fruits and edible roots or fungi—could also be done by women and small children, as long as it could be done near the cave or stockade. Hunting and defense required weapons, and the use of weapons required training and practice. This resulted in military-style organization, led by men. So it was natural that prestige and leadership in hunting societies became associated partly with age and experience and partly with physical prowess and skill with weapons. There is some argument about the gender roles in hunting and gathering societies, but mythological hunters were male.

Here it is important to say a few more words about the evolution of ethics and morality, i.e. the behavior of people (men and women) towards each other. The “Ten Commandments” reflected a society of authoritarian patriarchal families concerned with their own welfare, but required to avoid certain behaviors that would create stresses in the larger society. The existence of absolute rulers was taken for granted. Gilgamesh was an absolute ruler. Rulers were abjured by Prophets to be less oppressive, especially with regard to the treatment of widows and orphans. A rich man “of many shekels” should not prey on a poor man of one shekel.

The guidance was strictly negative: do not do this, do not do that. What was missing was positive guidance as to relationships. There are plenty of snippets of behavioral advice from prophets and wise men, from Buddha to Zarathustra, but they focused more on human relationships with God (or Gods) than on human relationships with each other. Buddha, for example, focused on individual enlightenment in isolation, and the practice of yoga. The Mosaic law specified limits for response to an injury “an eye for an eye and a tooth for a tooth.”

Rules

The core of ethics today is the rule most memorably set forth by Jesus Christ of Nazareth: that a man should care for God with all his heart and mind and care for his neighbor as he would care for himself. Jesus exhorts his followers to “Do unto others as you would have others do unto you” or words to that effect in Hebrew. This advice was not new when Jesus preached. From the

Analects of Confucius, a similar flicker of light emerged, even earlier: Tsungkung asked the master, "Is there a single saying that one can act upon until the end of one's life?" The Master answered with a question: "Would it be reciprocity? What you do not wish done to yourself, do not do to others." The most advanced philosophers went beyond mere reciprocity. Jesus Christ added, "Turn the other cheek also." Even earlier a nameless sage wrote as follows: "Recompense with good the man who wrongs you." Another Chinese sage, Mo Ti, said that T'ien (Heaven) loved men and that all men should love one another ... a doctrine of universal care (love) is the basis of ethics.

Morality is central both to religion and to the problem of debt. Almost every person alive thinks that the repayment of debt is a moral duty. That idea seems to have an ancient origin as David Graeber has explained at great length (and depth) in his magnum opus (Graeber 2011). One quasi-religious explanation of debt is that it started with the first recognition of continuity of society: we who live now are alive thanks to the life of our ancestors, hence we are indebted to them. That kind of debt is usually thought of as a duty. Performance of the duty is sometimes called "redemption," another word for pay-back. Christ was the "redeemer" in the sense that he relieved us of our debt to our ancestors.

Over the past several 1000 years, debt has gradually changed from religious obligation to our ancestors. More and more, it is associated with money to be paid. Yet the argument in modern finance theory is that the possibility of a default is just a quantifiable risk, not a moral duty, and that the magnitude of the risk of default is simply reflected in the rate of interest charged. Lenders should set the rate of return on every debt in relation to its risk. This is a huge change from historical views on the subject.

Mahayana Buddhism (first century AD) introduced the notion of Bodhisattva ("being of enlightenment") who sacrifices his personal salvation to help other creatures by acts of love and compassion. The stoic philosophers, such as the slave Epictetus, advocated religious resignation, forbearance, and love toward all men. St. Francis of Assisi, a 1000 years later, also devoted himself to a life of poverty and service to the poor, the sick and the lepers. He founded the Franciscan order. In more recent times, we see many more such examples of altruism such as Mother Teresa.

Notwithstanding the above, some economic theorists (such as Gary Becker from the Chicago School) still question whether altruism is a factor in economic relationships. The question arises because so much of economic theory is predicated on the assumption that markets reflect the actions of rational persons whose calculations of utility are based solely on self-interest (greed). In short, neoclassical economists tend to assume that greed is the fundamental and only driver of all human activities.

The Sumer equivalent of Noah, the Jewish ark-builder who saved all the living creatures from the great flood, was named Utanapishti. In his words, quoted in the Epic of Gilgamesh:

*All the silver I owned I loaded aboard,
All the gold I owned I loaded aboard
All the living creatures I had I loaded aboard
I sent on board all my kith and kin
The beasts of the field, the creatures of the wild,
and members of every skill and craft.* (Sedlacek 2011, p. 36)

Unlike the Hebrew ark-builder, Noah, Utanapishti presumably used gold and silver (money) for exchange purposes. So the Gilgamesh epic presupposes the existence of money and markets. Yet during the lifetime of Jesus (according to the Bible), merchants and money changers were perceived by Jesus and his followers as despicable, hence it was necessary and admirable to expel them from the Temple in Jerusalem (Fig. 3).



Fig. 3 Jesus cleansing the Temple (El Greco), National Gallery of Art, Washington D.C. (online collection)

Asceticism, poverty, and self-abnegation are greatly—but not universally—admired. One of the most admired of all was Saint Francis of Assisi. Celibacy and chastity (except for procreation) have been important in Christianity, classical Hinduism, and Buddhism, but not in Judaism or Islam. Most cultures have had trouble reconciling money with virtue. The conflict is visible everywhere today.

The Class System

The historical division between the “nobles” and the “commons” probably began with the distinction between urbanized, landowning settlers and the roaming nomads. Whatever its origin, it is still alive and well in the structure of most Western republics. There is an upper house (the House of Lords, the Senate) and a lower house (the House of Commons and the House of Representatives). In both cases, the lower house initiates and the upper house pontificates (and may veto). The same division is to be found in the military services. There are two classes: officers—supposedly “gentlemen”—who give the orders (passed down the “chain of command” from above) and the lower ranks at the base of the hierarchy who obey the orders (or else). Officers do not socialize with ordinary soldiers.

In universities, today, there is a comparable divide between teaching and research faculty (professors) who are mostly garnished with a PhD degree, *vis-a-vis* the lower ranks, such as students, teaching assistants, librarians, janitors, cooks, and so on. Faculty members decide what to teach and how to teach it. The rest take orders. Similarly, in most corporations or partnerships there is a gulf between the owners—founding shareholders or partners, who invested money (or who inherited shares from a parent)—*vis-a-vis* the employees and wage earners. The shareholders or partners receive profits (dividends) and possibly bonuses in addition to salaries. On the other hand, the employees receive wages when the company prospers, but may be let go, with nothing to show for their efforts if the company runs into difficulty. Of course, the reality is more complex than the above characterization, but the asymmetry of “rights” between the upper and lower classes is recognizable.

The same asymmetry of rights holds in the world of finance. The prime lenders (banks) have legal rights superior to the rights of borrowers, while the senior bondholders have rights superior to subordinated bondholders or (at the bottom) the equity holders. When there is a financial problem at a company, the government collects taxes owed, in full, before the next claimants (employees) get paid, then come the bondholders, in order of seniority. All

the bondholders get paid before the equity holders. Even the shareholders get paid before the taxpayers, who invested in the infrastructure that enabled the company to do business. This maldistribution of assets and claims bears no relation to the causes of the default.

This asymmetry of responsibility between lenders and borrowers is a left-over from the feudal asymmetry of rights between lords and commons. As will be seen later, it is a primary reason for the pattern of “bubbles” and “busts” that characterize economic history. I will come back to this topic again.

Social Structure and Land

We do not know in detail how neighboring tribes in the distant past managed to come together to become regional kingdoms, although it seems clear that the combination of physical and tactical leadership skills was involved, together with an instinct for cooperation, as well as competition among villages and local warlords. Must have been at the core. Leadership, in war or in village life, also requires trust. What we know of the early history of Egypt, Crete, Mesopotamia, Persia, India, or China, before written records, is what can be inferred from the realm of legend. Conquest was usually the first step. Obviously an integrated country with a central ruler is likely to be stronger and more durable than less organized neighboring countries. This presumably accounts for the rise of empires. But successful government in the long term, within the empire after conquest, was (and is) dependent on power-sharing. Power-sharing requires negotiation and cooperation, both of which require trust.

The origin and development of social organization from tribe to empire is still far from clear. Some tribes (like the early Greeks?) treated all boys as “citizens” of equal rank. Most tribes have a hierarchical organization, with a definite leader or “elder.” In some tribes men and women have equal voices, in others not. Greek legends also mention Amazons, warlike women. But the method of leadership selection and succession varies quite a lot. Some tribes have elections (the origin of democracy?) but many do not. Most tribes that we know of are led by men, presumably due to tradition, based on superior physical prowess in hunting or fighting, as noted.

Notwithstanding the sad and continuing record of human inhumanity, there is increasing evidence that voluntary cooperation between diverse ethnic or religious groups almost certainly played an important role in social evolution (Boehm 1999; Wilson 1966; Wilson 1975; Wilson & Wilson 2007). The examples of beneficial outcomes of interactions between different ethnic