

Whenever you find yourself on the side of the majority, it is time to pause and reflect.
-- Mark Twain

PROLOGUE

One of the fundamental characteristics of our lives is the pervasiveness of change. Changes in science, technology, industry, political relationships, social institutions, individual and social **values** create a more complex world with new problems and challenges. These changes and associated problems should cause us to continually evaluate our values, perspectives, ideas, **theories**, policies and behavior. This re-evaluation requires that we be able to think critically, improvise and adapt to new circumstances. The creation and identification of viable solutions to new problems requires an understanding of the philosophical foundations of our perspectives and values as well as the ability to evaluate events within their cultural and historical context. The search for solutions also requires that **ethics, morality**, history, economics, political science, sociology, psychology and all "social sciences" be integrated if we are to devise workable responses.

A PERSPECTIVE ON EDUCATION AND TRAINING

A major barrier to the process of critical evaluation of economic and social problems is that our educational system has confused training with education. Training is the acquisition of skills necessary to perform particular activities and to solve problems within the "**rules of the game.**" Since training is associated with skills to do particular things, it is often possible to measure outcomes. Education requires the individual to recognize, evaluate and apply values. These values enable the individual to apply specific rules and perform particular activities, but also to identify, interpret, and evaluate the "rules of the game" with respect to both individual and social objectives. Education involves evaluation and judgement. More often than not, the outcomes of education cannot be subjected to quantitative measurement.

Many students, faculty, university administrators, employers and **society** demand training. In the face of changes in courses or curriculum, the question always posed is: Does the curriculum change provide the skills necessary to get a job and how much does it pay? Organizations, corporations, governmental

agencies, other employers and societies proclaim that they want employees and members who "think." In fact, they want team players that are trained to think about better ways to accomplish given, group objectives. The problem with education is that it produces individuals who question not only the way in which things are done within the "rules of the game," but also the purposes for which things are done.

The social emphasis on training and its associated mentality will work in the short run. The effects of an emphasis on training on the long-term development of society are more questionable. We must learn [or re-learn] to think critically. We must learn how to learn. We must learn to distinguish relevant information from irrelevant "facts" and to use the information with wisdom. This does not mean that we can survive as individuals without a specialized skill. It means that in addition to training to do a specific job, we must be educated so that we can adapt our skills, understand our values and learn new ways to deal with challenges that accompany the changes in our environment.

Training can be conceived of as Tallis' "Kingdom of Means" while education involves the "Kingdom of Ends."

We may legitimately demarcate two realms or Kingdoms: the Kingdom of (intermediate) Means and the Kingdom of (final) Ends. In the Kingdom of Means, we are concerned with those actions that will sustain life and comfort (or freely chosen discomfort). In the Kingdom of the Ends, we are concerned with the ultimate purposes of life, with what we should do with the consciousness that is given to us, when the agenda of that consciousness is freely chosen rather than dictated by suffering and need. Medicine, for example, belongs to the Kingdom of Means: its best achievement is to restore someone to full health, to normal Tuesdays, Wednesdays etc. It does not answer the questions 'what should one do with a normal Tuesday?', or 'why live out a normal Wednesday?' For some, the answers to the questions are self-evident: the ultimate purpose of life (and comfort) is to be found in helping others to life (and comfort): the point of normal Tuesdays. The Kingdom of Means becomes an end in itself. [Tallis, p xvi]

While training and education are social activities with different objectives, they are related. As education enables the human mind to imagine new activities and to adapt to changes in their physical and social environment, more training is required. As complexity of our world increases, the need to know how to do things becomes more important. Similarly, as the members of society learn how to do more things, the need for critical analysis about why certain things should or should not be done is magnified. As we learn how to do more things in a finite world, we

must establish criteria to evaluate and determine choices from among competing alternatives. That is the purpose of education. The study of economics can be training in the tools of decision-making. Benefit-cost analysis, risk assessment and other optimization techniques are important topics for training. The application of those tools and the selection of objectives require education.

Education may be disturbing and a source of discomfort. Education requires questioning what one believes. In many cases education is unsettling and may pose more questions than it answers. Education requires that the student explore ideas that are unfamiliar. It may require that long held beliefs be questioned and discarded. That is the way one learns.

The purpose of this text is to introduce the interested reader to a broad overview of ideas about how the economy is and should be related to **society** and the individuals who compose that society. Any study of either the economy or society would require a lifetime dedicated to the task. Any single book that purports to cover the subject suffers from excessive ambition. Both the economy and society are extraordinarily complex processes that are shaped by a multitude of forces. Additionally, our observations, descriptions and interpretations of the processes are coloured by the observer's values, perceptions and **ideological** positions. Therefore, the objective of this text is not an attempt to present a comprehensive and objective history of economic thought. Rather, it is to introduce ideas and encourage further exploration. The intent is to keep the text short to avoid discouraging readers who are being introduced to the ideas for the first time. The student will note that some of the ideas and concepts will be presented more than once. This repetition should reinforce some of the more important ideas and aid the student in associating and integrating ideas.

A PROBLEM OF INTELLECTUAL HISTORY

Intellectual history is difficult. The origin and evolution of ideas is almost impossible to trace. The role of ideas in one time, place or discipline may influence the development of ideas in other times, places or disciplines. Thomas Malthus' theories about population presumably influenced Charles Darwin's approach to the evolution of species. [Darwin, pp 2, 41] Karl Marx credits Darwin for influencing his ideas about **capitalism**. Biology, physics, philosophy and many other disciplines

have played a role in the development of economic theory. Economists, particularly microeconomists, have attempted to emulate the methods of physicists.

Ideas often appear in the writings of one or a few contributors only to be ignored or forgotten. These ideas may be recreated or rediscovered by later contributors. Tracing the connections is difficult because we often interpret the earlier ideas in the context of our own circumstances. While it is impossible to trace all the connections in the evolution of ideas, there are often major “turning points” or “creative moments” that can be identified. Joseph Schwartz characterizes these creative moments as:

"The creative moment is celebrated in Western culture as the apex of individual accomplishment. However, it takes nothing away from the achievements of a Beethoven or an Einstein to note that their creative moments were in fact complex social events. ... Creative moments are not mysterious products of genius but represent the conjunction of complex social events. [Schwartz, pp. xvii-xviii]"

These conjunctions of “complex social events” include previous ideas in many different disciplines as well as events in political, social and technological history. J. Bronowski points out that:

"Newton's achievement was made possible by the interplay of personality and opportunity. . . . Newton was born during Cromwell's revolution in the troubled 1640's; he was eighteen at the Restoration in 1660; and he published the Principia during the intrigues which ended by bringing William of Orange to England in the revolution of 1688." [Bronowski, p 13]"

New ideas are usually combinations, extensions of, or reactions against earlier or existing ideas. During the creative moment, a person [or group] synthesizes earlier ideas and **society** gains new insights. Plato [427?-347? BCE], Nicolaus Copernicus [Mikolaj Kopernik 1473-1543], Galileo Galilei [1564-1642], Sir Isaac Newton [1642-1727], John Locke [1632-1704], Adam Smith [1723-1790], Karl Marx [1818-1883], Alfred Marshall [1842-1924], and John Maynard Keynes [1883-1949] are examples of these creative moments or turning points in intellectual history. None of these individuals worked in isolation. All were influenced by the contributions of others and the history of events.

During these creative moments, past ideas were reacted to or against, synthesized and brought together within a matrix of circumstances to create new insights. The discussion of the history of economics tends to focus on these kinds of events but the social context of the contributions should not be overlooked.

Keynesian economics must be understood in the context of capitalism, the **great**

depression, Mercantilism, Malthus' theory of gluts and the philosophical works of G.E. Moore [1873-1958] as well as **Classical** and **Neoclassical economics**.

A PROBLEM OF LINGUISTICS, RHETORIC AND TECHNOLOGY

The process of education [and for that matter, training] requires some form of communication. Language is a primary medium of communication. Symbols and sounds are used to express meaning. While the study of language is beyond the scope of an introductory text, a few cautions are in order.

Meaning

When a particular word is used, it represents some event, process, thing, idea, emotion, feeling or... . Often a word may have several alternative meanings. Words are symbols; and, as such, may have multiple meanings. Meanings may be altered by context. Thus, critical (thoughtful) reading is essential to learning. There are many **theories** about the relationship of language to what we know [or think we know]. Words and language used may shape our perceptions of reality. Words can alter the way we see the world. An awareness of these effects is important as we use language to communicate.

Words and language often contain emotional content. Some words bring forth pleasant feelings; others evoke anger or undesirable feelings. These feelings associated with words are dependent on the experiences of the individuals and social values. In Western Industrial societies the words "free market, competition, deregulation," are usually accepted as "good." Words like "communism, socialism, regulation, planning" tend to evoke negative feelings.

As we listen to others or read, we must be aware of the importance of the language and its influences on our perceptions.

Literacy

The process of communication and education requires a functional level of literacy. Several types of literacy are required to communicate effectively. In addition to reading, both mathematical and cultural literacy are required to communicate effectively in a modern world.

Mathematical Literacy

John Allen Paulos describes "innumeracy" and its consequences. [Paulos, 1990] While there are many causes of "math anxiety" and innumeracy, it has

serious consequences for communication, training and education. Numbers are used to convey meaning. Relative sizes of things, probability of the occurrence of events, functional relationships and a variety of concepts in **logic** are all grounded in mathematics.

The concept of relative size is important. What does it mean if a candy bar costs \$1 or 80 pence? It depends on the nature of the candy bar, prices of other goods and a person's income and wealth among other things. Is a population of 8 billion persons a lot? What is a billion? What is a million? If the probability of an event is .2, is that a high probability? It may depend on whether it is the probability of having dinner or of dying. For these numbers to have meaning, it is necessary to have a mental image of quantities and context.

Economic theory seeks to offer explanations about events in a changing world; change is a fundamental aspect of economic theory. How does a change in one variable alter some other dependent variable? How does a change in the price of a good alter the quantity demanded? The revenue of a seller? Calculus, a tool to deal with rates of change, was and is considered necessary to understanding economic phenomena. The notion of change is mathematical in character. While we may be able to judge the rate of change in the speed of an oncoming car, rates of change in levels of income or economic growth are more problematic. Cause and effect are an element of mathematical literacy. Is event A caused totally by event B or is A partially caused by B and partially by C, D and E? Given a change in B, C, D, and E what will be the change in A that is attributable to each? These concepts are necessary to our perception of the world around us.

Cultural Literacy

"To be culturally literate is to possess the basic information needed to thrive in the modern world" [Hirsch, p xiii]

Hirsch describes cultural literacy as "... *knowledge that all of us unconsciously have about language.*" [Ibid. p3] If a person lives in a farming community, there are certain pieces of information (s)he must have to understand what farmers are talking about. If one wants to participate in the business world, (s)he must know something about profits, taxes, income statements and balance sheets. To understand the world in which we live, there must be some understanding of television, the Internet, automobiles and traffic laws. If several automobile drivers meet at an intersection with no traffic signs or signals, it is helpful to every one if

the culture is to “yield to the person on your right.” While this may be the law in many states, it is of no use unless it is part of the “culture.” To understand an increasingly interconnected world, some understanding of the concepts that play a role in economics, law, religion, music, philosophy and literature is necessary.

The stories told to children are part of this cultural literacy. The “Little Red Hen” and “Little Red Ridinghood” are a ways of transmitting culture. Fairy tales and their lessons tend to appear in many different cultures around the world. Much of what is done in introductory economics classes [or for that matter most introductory classes in most disciplines] is to create part of the foundation of cultural literacy. It is difficult to imagine participation in a modern industrial society by someone who does not understand notions of democracy or the operation of a market transaction. With the transformation of centrally planned societies in the late 1980’s, many problems were created because the cultural literacy of market systems was not developed. A market economy must have the cultural foundations to support market transactions. These cultural foundations include ethics, customs, mores and legal systems. It is no accident that Adam Smith [1723-1790] [who is often regarded as one of the early proponents of market systems] wrote *A Theory of Moral Sentiments*, before *The Wealth of Nations*.

Cultural literacy is the basic knowledge about events, concepts and things that allows us to communicate. While the culture of the industrial West is pluralistic, there is a matrix of common elements that integrate the various systems. Language is an important element in that matrix. Cultural literacy is necessary for words and symbols to have meaning. Hirsch remarks that we “...depend on a highly diverse vocabulary of communication rather than a coherent system of fundamental values and principles.” [Ibid. p 102]

Rhetoric

Language is often used to alter other’s perceptions of the world. Protagoras of Abdera [490-420 BCE] was one of the first to stress the importance of rhetoric. Protagoras believed that laws and customs were the result of agreement in human perception. Since argument is an important process for altering an individual’s perceptions, the truth of an argument is not as important as its ability to alter the perceptions to achieve objectives.

The concept of rhetoric was developed by the Greeks and became a standard topic in the educational process. Rhetoric was among the first courses that Adam Smith [1723-1790] taught. Among students' notes of Smith's class on 17 December 1762, we find the following:

*"Every discourse proposes either barely to relate some **fact**, or to prove some proposition. In the first, the discourse is called a narrative one. The latter is the foundation of two Sorts of Discourse: The Didactick and the Rhetoricall. The former proposes to put before us the argument on both sides of the question in their true light, giving each its proper degree of influence, and has it in view to perswade no farther than the arguments themselves appear convincing. The Rhetoricall again endeavours by all means to perswade us; and for this purpose it magnifies all the arguments on the one side and diminishes or conceals those that might be brought on the side conterary to that which it is designed that we should favor."* [Smith, LR, p 149]

The popularity of Deirdre McCloskey's *Rhetoric of Economics* suggests that it is still an important topic for economists. McCloskey indicates that the process of rhetoric includes **fact, logic, metaphor** and story. Rhetoric is the process of argumentation, presenting reasons to support a particular belief and listening to the reasons presented by persons with opposing views.

An important aspect of education is the process of altering perceptions. Rhetoric is fundamental to this activity. Societies create and perpetuate perceptions and **values** through the process of "story telling." It is not difficult to imagine a prehistoric tribe sitting around a fire listening to an elder or shaman telling stories. Often times these stories are called **myths**.

Mythology and story telling are important aspects of the creation and communication of cultural values. *Webster's Encyclopedic Unabridged Dictionary of the English Language* gives one of the definitions of myth as:

"an unproved collective belief that is accepted uncritically and is used to justify a social institution,"

Keen and Valley-Fox describe myths as:

"an intricate set of interlocking stories, rituals, rites and customs that inform and give the pivotal sense of meaning and direction to a person, family, community or culture." [Keen, p xii]

This is the process by which civilizations or cultures were transmitted from generation to generation. Modern societies still tell stories and the stories still are fundamental to the process of creating, and perpetuating culture in societies.

In modern societies, the role of the storyteller has been altered by technology. Television, radio, movies, the Internet, computer games and other

“high tech” media have been added to the shaman, parent, teacher and books. Scientists tell stories. The **hypotheses** and **models** are sophisticated stories that may be told and may be supported with “empirical evidence,” statistical methods, mathematical models and much fanfare, but they are still stories. Ptolemy [Claudius Ptolemaeus 127-151 AD] told a story about the earth being at the center of the universe. It was a useful story. Nicolaus Copernicus [Mikolaj Kopernik 1473-1543] told an alternative story that was also useful and was more consistent with the evidence. Sir Isaac Newton [1642-1727] told a story about the **mechanics of motion**. It was a useful story that aided the industrial revolution. Albert Einstein [1879-1955] and Niels Bohr [1885-1962] helped to tell another story that is different from the Newtonian story. The wonder of science is the discovery of new explanations or stories to “correct” the old ones.

In our pursuit of explanations about the world, we often learn about ourselves:

"Science is not a royal road to truth. It is not particularly objective. It does not necessarily bring out the best in people. Science is a human construction. It is what happens when human beings together try to make sense of their experience of nature. Works of science are ways of understanding created through human effort which, like works of art, can be interrogated for what they say about ourselves and our development. By finding out about our science we find out about ourselves." [Schwartz, p xix]

The application of the methods of science to the values and behavior of individuals and society is a force that helps to shape those very values and behavior patterns. The methods of science have become a fundamental characteristic of our culture.

Science is the activity of individuals in societies using a variety of tools to:

- *name, measure, describe and classify things and events or phenomena; it is the process of constructing an order of events and things.*
- *to tell plausible, useful stories about the relationships between these things and events. To describe cause and effect. A story about a specific instance of cause and effect may be plausible even if there is not 100% certainty that event A will be caused by event B.*

J. Bronowski argues that there are three important concepts or ideas that are central to science. These are order, causation and chance. (Bronowski, pp 12) An ability to recognize patterns among things and events contributes to an understanding of relationships and “cause and effect.” Chance and probability are central to tests of hypotheses.

The methods used to tell stories in one science influence the methods used in other sciences. **Metaphors** and **analogies** are used to describe phenomena. The circular flow of goods and services in an economy is *like* the flow of blood in the body; education and training are considered as *human capital*; the *engine* of economic growth is the division of labor.

Economists have been influenced by techniques used in a variety of other disciplines. The **Neoclassical economists** of the late 19th century tried to employ the tools that had been developed in physics. Economic models are often “like” models used in physics.

We still tell children stories to instill values and perceptions. Such stories as the “**The Little Red Hen**” impart attitudes and values about the merits of hard work and its rewards. Aesop’s Fables were used for many generations to teach morals and values to generations of children. Economists tell stories to create values and alter perceptions. The stories told by economists may be in the form of mathematical models or as narratives. Often competing stories are told. In the spirit of Protagoras of Abdera [490-420 BCE], the truth of the story may be less important than its ability to alter perceptions.

Society must judge the usefulness or truth of the stories. The methods and criteria used will determine the role of each contribution. The “success” of an idea is difficult to evaluate. An idea may not be accepted in its original form but variations of it may be integrated into the prevailing thought. Or, an idea may force modifications in the prevailing thought or conventional wisdom.

Technology

Marshall McLuhan [1911-1980] is famous for his statement “*The medium is the message.*” The method used to communicate is important to the perceptions of the reality of the idea. Socrates [469-399 BCE], Plato [427?-347? BCE] and Aristotle [384-322 BCE] primarily communicated through the spoken word. The Socratic method of questioning and challenging students and society became a standard method for teaching. His questioning the values and behavior of government and society proved his undoing. Even during the Middle Ages, oral communication was the primary method of education. Texts written in hand by monastic scribes were scarce and available to only a few. The new technology of moveable type associated

with Johannes Gutenberg [1400-1468] changed the way ideas were disseminated.

Lisa Jardine argues:

"The printed book revolutionized the transmission of knowledge, and permanently changed the attitudes of thinking Europe. Print brought with it many of the features of a book-based culture which in our everyday lives we now take entirely for granted. The scribally produced manuscript was unique (the pagination of each copy would be different); the printed book for the first time allowed two readers to discuss a passage in a work they were both reading by referring to the precise page on which it occurred. Consistent pagination also made it possible for author or editor to provide an index, to which anyone collecting data on a particular topic could turn. The comparatively effortless production of multiple copies meant that printed books could disseminate knowledge much more rapidly, widely and accurately than their handwritten antecedents. The dramatically lower price of the printed book also made written material available for the first time to a large, less privileged readership. [Jardine, p 177]

In the current, so called, "information age," new technologies are not only altering the way in which we present ideas but are altering the nature of what we consider to be wisdom, information and facts. [See Neil Postman, *Technopoly* or James Burke] The new technologies of moveable type and the printed book significantly altered the intellectual landscape between 1455 and 1500. Perhaps in the next 50 years we will begin to grasp the effects of the new technologies on the process of thought and knowing.

Neil Postman argues that William Farish's decision in 1792 to grade papers at Cambridge, led to fundamental changes in the perspective of knowledge:

*"And yet his idea that a quantitative value should be assigned to human thoughts was a major step toward constructing a mathematical concept of reality. If a number can be given to the quality of a thought, then a number can be given to the qualities of mercy, love, hate, beauty, creativity, intelligence, even sanity itself. When Galileo said that the language of nature is written in mathematics, he did not mean to include human feeling or accomplishment of insight. But most of us are now inclined to make these inclusions. Our psychologists, sociologists, and educators find it quite impossible to do their work without numbers. They believe that without numbers they cannot acquire or express authentic knowledge." [Postman, *Technopoly*, p 13]*

Mathematics is important to an understanding of the world around us, but it also changes that world. The attempts to quantify education have altered what we see as education. The quantitative measurement of outcomes of educational institutions has increased the stress on training.

Radio, television and computers are the new technologies that are altering what we see as information, education and knowledge as well as the process of communication. Visual stimuli are more appealing than logical, analytical and evaluative thought processes. The ability to generate data, facts or information has increased more rapidly than the ability to interpret and use the data. This emphasizes the need for education; individuals and society need the skills to interpret the avalanche of data and facts within the proper historical and philosophical context.

A PROBLEM OF MATERIAL SELECTED

In any history it is impossible to include all phenomena. It is necessary to select specific events, individuals and ideas. Every historian must choose those things to include and those to ignore. The nature of the story told is influenced by the selection and order of the phenomena. The reader should always be aware of the objectives and any predisposition of the storyteller.

The libraries of the world are full of books on Plato, Aristotle, Adam Smith, Alfred Marshall, J.M. Keynes and histories of all manner of academic disciplines. Why would anyone choose to write another? It is not only the material that is presented that is important. The material that is not presented may be just as important. At the end of the day, it is the organization and ordering of the material and ideas that shapes the story; that shapes the perceptions of the writer and the reader.

The selection of which writers and ideas to include in a history of economic thought is difficult. The economy is one element of a society. It is influenced by other social activities. Economics is a sub-discipline of social science. It is difficult to define the boundary between economics and other social sciences. Often a political theorist or sociologist may contribute ideas that alter the evolution of economic thought. Religious thinkers may alter the values on which economic principles are based. Economics may have been influenced more by Newton's approach to physics than they were by some economists. Economic theory necessarily abstracts from society and models may be esoteric, however, the history of economic thought must consider a variety of factors that influence the evolution of the discipline. The study of the history of economic thought places the theoretical models of modern

economics in a philosophical and historical context so that the methods and models can be interpreted.

A PROBLEM OF CAUSATION

One of the objectives of science is to explain the causation of events. Once a science has agreed on the names of phenomena, a system of measurement or description and a taxonomy, the task is to identify causes. One of the great changes in the process of knowing was the use of observation to verify causes.

A major problem is the issue of multiple causes of an event. I often get the top of my head sunburned and perceive this as a problem. An exploration of the causes of this event shows that there may be several "causes."

- *I was out in the sun.*
- *I did not wear a hat.*
- *I did not have sunblock on.*
- *I am bald.*
- *My mother's genetic makeup resulted in my being bald.*
- *The biological process is such that baldness is dominant in males and recessive in females.*

Which of these is the cause of my sunburn? In the terminology of science, each is a necessary but not sufficient condition. The story can be significantly altered by which factors are omitted or included. I may have shaved my head. In which case the issues of genetics is not necessary.

In the "hard sciences" [such as physics and chemistry] the process of controlled experiments and replication of results makes the process of determining causes more definitive. In the "social sciences" or "soft sciences," results cannot normally be replicated through controlled experiments. This makes the determination of causes more difficult. Empirical data, chosen by the observer, is typically subjected to statistical analysis. This analysis can determine correlation but not causation. There is also the problem of rejecting a hypothesis as false when in fact it is true or accepting a hypothesis as true when it is false. It is impossible to "prove" causation with statistical analysis of empirical data. The use of hypotheses, theories and stories to make sense of "facts" are required.

In the case of intellectual history, tracing and explaining causation of particular ideas is even more difficult. While we cannot always be sure of causation, we may look for associations or correlations. The ideas of individual A seem related to those of individual B. A's ideas came first and B had knowledge of those ideas.

Newton [1642-1727] used the notion of calculus to describe the acceleration of bodies; William Stanley Jevons [1835-1882] used calculus to describe the rate of change in final utility. Both were British. We use this evidence to suggest that Newton probably influenced Jevons. Or was it Gottfried Wilhelm Leibniz [1646-1716] who was the influence on Jevons?

In an introductory text, it is impossible to present a comprehensive story. It is necessary to select the most important contributors and the most likely relationships.

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Glossary of Terms and Phrases

[Prologue]

- **Analogy** – “in logic an analogy is a form of reasoning in which one thing is inferred to be similar to another thing in a certain respect, on the basis of the known similarity between things in other respects” [Webster’s, p 53] “A comparison of two different things that are alike in some way (see **metaphor** and **simile**)” [Hirsch, Kett and Trefil, p 141]
- **Capitalism** – an economic system that is characterized by the private ownership of property rights [particularly the factors of production], and voluntary exchanges in a market oriented society. Modern capitalism includes corporations who can own property. There may also be a question about what is meant by voluntary exchange.
- **Classical Economics** – A school of economic thought that begins with Adam Smith’s [1723-1790] Wealth of Nations [1776]. It continues to day but was supplemented by Neoclassical economics and challenged by Keynesian economics in the 1930’s. The simplistic approach to the Classical approach is characterized by a mechanical perspective that focuses on individual or atomistic behavior in a “free market.”
- **Consequentialist Ethics** – a system of ethics based on the consequences or outcomes of choices. Modern, industrial economic systems are based on a consequentialistic ethic, **Utilitarianism**. **Pareto efficiency** is a consequentialist ethic grounded in utilitarianism.
- **Deduction** – deductive logic is a process of reasoning that moves from general knowledge to specific knowledge. “The water in the lake is safe to drink. This glass of water is from the lake. Therefore, this glass of water is safe to drink” Deduction often applies a **sylogistic** process. **Inductive reasoning** is the process of reasoning from the specific to the general.
- **Deontological ethics** – a system of ethics based on duty. In most societies, it considered to be one’s duty to vote or to join the military in time of war.
- **Efficiency** – is a measure of how well an objective is achieved. It is not a goal in an of itself. In physics it is defined as a ratio of output to input.
- **Ethics** – the body of moral principles or values governing or distinctive of a particular culture or group [Webster’s, p 489]. Ethics is also used as a term to describe the study of **morality**. In philosophy there are technical differences between morals and ethics. Ethics may be **Consequentialist**, **ontological** or **deontological**.
- **Fact** – a condition or characteristic that is said to be true by empirical observation that is used to describe a phenomenon. “1. that which actually exists; reality; truth. 2. Something known to exist or to have happened.. 3. A truth known by actual experience or observation.” [Webster’s, p 509]
- **“great depression”** – from 1929 to World War II many Western industrial societies suffered from massive unemployment, decreased levels of investment and consumption.
- **Hypothesis** – an initial proposition that is believed to explain an event or phenomena. It is usually presumed not to have been verified or tested

completely. The word may also be used to describe one of the premises in an argument. A hypothesis is usually less developed than a set of **theories**.

- **Ideology/ ideological** - Eagleton lists a variety of meanings applied to ideology. Examples include:
 - the process of production of meanings, signs and values in social life;
 - a body of ideas characteristic of a particular social group or class;
 - ideas which help to legitimate a dominant political power;
 - and others [Eagleton, p 1]
- **Inductive Reasoning or induction** - the process of reasoning from the specific to the general. It is a process that is the reverse of deduction. Inductive reasoning typically relies on empirical methods of observation. If 20 glasses of water from a given lake are safe to drink, it may be inferred or induced that all the water in the lake is safe to drink.
- **"Little Red Hen"** - the story of a hen who finds grains of corn (or wheat) and asks other barnyard animals to help plant, care for, harvest and process the grains. They decline. When the hen asks for help to consume the grain, they are willing to participate. The hen declines. A lesson about hard work; "if you don't work, you don't eat." It might also be construed as a crude version of the Marginal Productivity theory of income distribution.
- **Logic** - is a branch of philosophy that studies the process of reasoning and analytical thought. Deduction is often given as an example of logic.
- **Malthus' theory of gluts** - Thomas Malthus [1766-1834], best known for his theory of population, also taught that the distribution of income among landlords, capitalists and workers would result in the production of more goods than would be consumed [over production or under consumption; the glass is half full or half empty]. According to Malthus the surplus should go to the landlords. The capitalists would save and invest causing an increase in the glut. Workers or labourers would simply procreate and add to the population.
- **Mechanics of motion** - a branch of physics that studies the motion of material objects. There has been great effort to apply a mechanical interpretation to social as well as material phenomena. Mechanics specifically refers to Newton's laws of motion and his analysis. Newton's laws of motion are;
 - "Every body continues in its state of rest, or uniform motion in a right line, unless it is compelled to change that state by forces impressed upon it."
 - "The change of motion is proportional to the motive force impressed; and is made in the direction of the right line in which that force is impressed."
 - "To every action there is always opposed an equal reaction: or, the mutual actions of two bodies upon each other are always equal, and directed to contrary parts." [Gjertsen, PP 297-299]
- **Mercantilism** - A philosophy or doctrine of economic thought that was dominant from about 1500 to about 1776. Early elements of Mercantilist doctrine appear in Machiavelli's The Prince [1513]. Adam Smith's Wealth of Nations [1776] included an attack on the Mercantilist ideas and policies. Mercantilism generally holds that wealth is synonymous with specie [gold, silver] and that a nation can grow or increase its wealth by increasing the

inflow of specie. One of the policies favored was to insure that exports of a nation exceeded the imports of that nation. Foreign trade tended to be regulated. In France Colbertism was a form of mercantilism. In Germany it was called kameralism.

- **Metaphor** – “the application of a word or phrase to an object or concept which it does not literally denote, in order to suggest comparison with another object or concept.” [Webster’s, p 901] “economic growth is a rising tide that lifts all boats. (It lifts yachts first.”).
- **Models** – models are representations of phenomena. It is an abstraction of reality. Models are used to show or demonstrate how events are objects are related. These models are not reality, they are representations of reality. Models may be presented as images, stories, mathematical equations, graphs, etc.
- **Morality** – is the process of complying with the rules of conduct that are included in a system of ethics
- **Myth** – the myth is a story or group of stories that is used to justify a social institution or rationalize a pattern of behavior in a society. These stories are accepted without subjecting them to any criteria of verification. Myths are stories that are an important force in the creation and perpetuation of cultures.
- **Neoclassical economics** – Neoclassical economics is the body of what is called mainstream, orthodox economics. Microeconomic theory is largely a presentation of basic Neoclassical economics. Microeconomics tends to focus on voluntary, individual transactions in a market setting. Its basis is Utilitarianism. Alfred Marshall is generally recognized as the person who cast microeconomics in a form recognized as “Neoclassical.”
- **Pareto efficiency** – a concept that is used as a measure or criteria of the **efficiency** of choices and actions in market driven economies. The Pareto criterion is a **Utilitarian, consequentialist ethic**. It is the foundation of decision making criteria in accounting, management, finance and other business disciplines as well as in public policy. Pareto efficiency is a condition that exists such that there are no alternatives that would improve the welfare of one or more persons without making another person or persons “worse off” [lower level of welfare or utility] A variation of the Pareto efficiency criterion is “**Pareto Potential**” of COST-BENEFIT [benefit/cost] analysis; the benefits exceed the costs of an alternative.
- **“rules of the game”** – are the rules which tell the members of a society which actions or activities are acceptable and which are not. The rules of the game include implicit rules that include customs, mores, traditions, ethics and so forth. Explicit rules such as laws and regulations that are consciously created by the members or “ruling bodies or classes” of a society.
- **Simile** – a comparison of two things are concepts usually including the words “as” or “like.” The heart is “like” a pump. Children are “like” durable goods.”
- **Society** – The concept of a society is complex and multidimensional. It is a community of persons who have some common objectives, values and/or other characteristics. The members of the society interact at some level. The interactions may be characterized by cooperation or conflict. [Gordon, p 3]

The cooperative and conflicting aspects of society are like a bicycle race. It is a mixture of competition or conflict and cooperation. A rider who goes out alone has a high probability of failure. A group of riders forms a pace line and cooperates by drafting and "pulling." Each rider must share in the role of the lead rider who pulls the pace line. At some point the cooperative activity of the pace line usually becomes a competitive sprint to the finish.

- **Syllogism or syllogistic reasoning** – a syllogism is a form of reasoning. There are two premises that support a conclusion using the rules of logic. Premise: the water in the lake is safe to drink. Premise: this glass of water is from the lake. Conclusion: this glass of water is safe to drink. Aristotle is credited for developing the rules of syllogistic reasoning.
- **Theory** - is a consistent, coherent set of propositions that explain a particular class of phenomena. Economic theory is a set of propositions that is used to explain choices that are made regarding the allocation of relatively scarce resources, goods and services in a society. Usually we think that theories are more developed than **hypotheses**.
- **Utilitarianism** – Utilitarianism is a philosophy closely associated with Jeremy Bentham [1748-1832]. He developed utilitarianism as a system of ethics to guide society and individuals in choices and policy. The outcome of an action or choice determines the "rightness or wrongness" of the action or choice. He tried to develop a "felicific calculus" that would make the process decision making "scientific." Newton used gravity to explain the motion of planets and objects; Bentham attempted to use utility to explain the choices of individuals and societies. He believed that a society should maximize the utility or wellbeing of its members. Since it is difficult, if not impossible to make interpersonal and intertemporal comparisons of utility, felicific calculus was not functional. Modern, mainstream, market economics uses **Pareto efficiency** and Pareto Potential as criteria for evaluating choices.
- **Value** – a process of making comparisons about relative worth or merit. Values are judgements about things, actions or events that are held in esteem by a person or persons in a society.