

See: [Charcon.ScottCrosby.Net](http://Charcon.ScottCrosby.Net)

#### Applied Epistemology

based on Objectivist Epistemology

will be some radical issues and conclusions that will affect how you think about Objectivist Epistemology, and how to interpret it in light of certain facts

no changes to Objectivist Epistemology

anything that seems to be a change, ask questions

#### Ayn Rand

never repeat her words; don't parrot

except for a deliberate quote in reference to her philosophy

put that thinking into your own words, to know and understand it better

#### Evolution

Ayn Rand on Evolution – “nothing to say about it”

meant it was not her area of expertise – like computer programming, forestry, etc.

Evolution is an established fact – and essential to study of biology

“Evolution” – our term for long sequences of changes to DNA to the point where interbreeding is no longer possible.

changes to DNA is due to mutation

separation of groups of same species

evolved species evolves via modification of existing characteristic

gradual; no revolutionary change

bird may have a language but cannot evolve a neocortex like human

#### Extinction – causes:

climate change

continual and ongoing – 1 year, 10 years, 100 years, 1,000 years, 10,000 years, ...

Earth warmer until 3mya, cooler since

year-round ice in Arctic only in last 3,000,000 years

[climate.scottcrosby.info](http://climate.scottcrosby.info)

Earthly – volcanos, tectonic plates / continental drift, shifting vegetation patterns

Solar – the Sun being a variable star

comets and meteors – material within the Solar System that strikes the Earth

radiation from supernovas

Sahara desert – barrier between Africa and Asia and Europe

colder climate – Sahara expands – closing off access from Africa to Asia

## From Savagery to Greatness – Charcon 2019 Class Outline

warmer climate – Sahara contracts – opening access from Africa to Asia

more glaciers lowers sea-level

coastal access from Africa to Asia, Australia

loss of artifacts, fossils that are now below sea-level

food availability

fixed amount of food sources – other animals, plants

Australopithecine, Paranthropus, Homo – same environmental niche

What is a human?

abstract conceptualization

no abstract conceptualization

That thing is like me. I recognize it and the other things like us.

referring to a horse, its mother, a herd

That thing is dangerous. The other things like me flee from it. I flee from other things like it.

referring to a wolf, and a pack of wolves

having abstract conceptualization

We are going hunting. It is my first hunt. The knife-maker has helped me make my first knife. It has a longer blade than older knives. I can stab the knife deeper into an animal, making it easier to kill it.

chimpanzee experiment

chimp making stalk for termites from grass stem using teeth

in lab, scientists demonstrate using a cutting rock; chimp fails to grasp sameness

“use teeth to make stalk” vs. “use cutting rock to make stalk”

cannot grasp “stalk-making tools”

cannot group “use teeth” and “use rock” as being under “stalk-making tools”

abstract concept requires word and definition

word replaces mental image

definition replaces mental pattern

chimps not capable of language, so cannot have abstract concepts

some species of Australopithecus (3.4 mya) and all Homo species

had language

made stone tools – training or copycat (like chimps)?

probably started as copycat

as language grew more complex, descriptions and explanations

Australopithecus, Paranthropus, Homo – same environmental niche

## From Savagery to Greatness – Charcon 2019 Class Outline

differences could only be degrees of mental ability – level of intelligence  
i.e., various levels of abstract concept formation – one per species

70,000 years ago

Homo Sapiens 2.0 – radical change

longer-blade stone knives,  
arts - sculpture, painting, necklaces, skin painting  
food harvesting  
planning

mental evolution, not physical exterior evolution

definition of Art – “selective recreation ...”

what in life is important?

metaphysical value judgements?

curiosity – the drive to associate concepts with other concepts

### Hominins

Australopithecus Anamensis – 4.2-3.8 mya

Australopithecus Sediba – 2 mya

Homo Habilis – 2.3-1.5 mya

Homo Ergaster – 1.9-1.4 mya and Homo Erectus 2 mya - 70 kya

Homo Neanderthalis, etc. – 800-40 kya

Homo Sapiens – since 300 kya; v.2.0 70 kya

progression from brain behind eyes to brain above eyes

### migrations

Homo – the explorers

750,000 ~ 1,000,000 years ago

H. Habilis / H. Ergaster to Homo Floresiensis

H. Erectus – Peking Man, Java Man

~ 500,000 years ago

H. Neanderthalis, etc. – Europe and Asia – clothing to adapt to cold

H. Sapiens – world-wide – ocean-going, navigation, adapt to severe cold

110,000 years ago – unsuccessful venture to the Levant

climate change briefly opened up avenue past the Sahara

50,000 years ago

45,000 years ago

### genetic markers

M168 – out of Africa

## From Savagery to Greatness – Charcon 2019 Class Outline

M130 – 50 kya – coastal across Asia, to Indonesia, Australia, east China coast  
first oceanic navigators – Australia, and later much further  
eventually developed cultivation of rice – Agriculture

M89 – north to Iran

north to Siberia and east

M3 across “land bridge” / isthmus to polar North America

10kya – M3 to rest of North and South America

east into northern India, Burma, Thailand, and China

southeast into India

north and west into Europe

M122 – meets M230 on China coast 10kya

takes M230 agricultural techniques

pushes out M130 – to Taiwan, then Indonesia, Polynesia, Hawaii, Easter Islands

also to Mongolia, North America – Navajo Indians

M172 – along Mediterranean coastal Greece, Italy, France 10kya

what drove that migration of M172?

### agriculture

prior to agriculture – all humans everywhere were hunter-gatherers

bands of 20-30 people

followed herds

wandered / “migrated” as foraged for food / new food sources

e.g., American Indians

with agriculture

wheat, emmer, einkorn wheat, hulled barley, peas, lentils, bitter vetch, chick peas, flax

required sedentary lifestyle among wanderer hunter-gatherers

no ethics

conflict and protection

strong-man rule – first kings, nobility

oppression of (weaker)farmers by (stronger) rulers

beginning of specialization of skills

record-keeping –symbols for numbers, types of things being counted

scribes, warriors, weapons-makers, architects and builders,

priests – astrology, astronomy

## From Savagery to Greatness – Charcon 2019 Class Outline

dependence on food production

meteor of 10,950 BC

M172

migrated to Europe

introduced agriculture to M173

agricultural lifestyle is sedentary

what drove migration to Europe?

Literacy – prehistoric to historic – a big stair-step

Sumer, 3200 BC – full writing skills

prolific – 500,000-2,000,000 clay tablets found so far

Gilgamesh – first epic

Phoenicians

Mediterranean Sea, Atlantic coast – Morocco, Spain, probably Britain

trade network – not political empire

no ethics – piracy endemic

literacy for trade

recording and management of trade, contracts, debts

letters for sounds

no vowels

1500-300 BC

golden age 1200-800 BC

producing wealth vs. seizing wealth

people create extra goods for trade = increased wealth; not more gold

traders and colonizers – not conquerors

conquest by Persians 539 BC

Greeks

added vowels to Phoenician alphabet 730-690 BC

to record Homer's Iliad and Odyssey

almost immediate wide-spread literacy among Greeks

Greeks

hunter-gatherers on periphery of Fertile Crescent's empires

retained independence but learned agriculture

first break from typical strong-man rule

## From Savagery to Greatness – Charcon 2019 Class Outline

traders and colonizers – not conquerors

Athens – Greek democracy

golden age 753-404 BC

rhetoric

first study of ethics – Socrates, Plato, Aristotle, Pythagoras, stoics, others

Impact on Rome – *Magna Graecia* Italian colonies 800s, 700s BC

politics, mathematics, sciences, arts, philosophy

Roman Republic

605-49 BC

Roman Senate – legislative heritage

Roman Empire

the prize

the fight over the prize

Rome's worst enemy

destruction of Rome's *virtue*

replacement by mercenaries

escape from Rome's worst enemy

Venice

hidden in the marshlands

traders – not conquerors

printers not controlled by the Church

trade with East Roman / Byzantine Empire, and Moslems

Marco Polo

trade caravans throughout Europe

conduit for goods and ideas that fed drive for Renaissance

legislative body

nobles

wealthy

relative freedom

could improve social position

even for Jews

excommunicated by the Church several times

longest-lived nation ever

## From Savagery to Greatness – Charcon 2019 Class Outline

400s to 1797

no successful rebellions, revolutions, invasions

Europe post-Rome

influx of tribes

chieftains and sub-chieftains became kings and nobles

tribes people became serfs

Rome a fading memory

Europe starts to learn

knows of Classic Greece

Boethius

Crusades and 70 Moslem libraries in Spain

Renaissance vs. Church

Copernicus

German – far from Rome and the Church

father a merchant – not a noble

Galileo

“And yet it moves”

only in 1992 that Church recanted

Ethics

outgrowth of Christian, which was impacted by Classical Greece

secularized

Hobbes, Descartes, Locke

individual rights

not commandments from God or King

rational study and justification

provided basis political philosophy for creation of government of the United States

vs. dictates of strong-man rule

only in Europe and ex-British colonies – U.S., Canada, Australia, New Zealand

not in rest of the world – esp. India, China, Russia

still a tenuous hold

still a long way to go for this stair-step away from traditions based on animal past

Slavery

sex and labor

## From Savagery to Greatness – Charcon 2019 Class Outline

world-wide until

rights of the individual – made people regard slaves as people

industrial revolution – made slavery economically unfeasible

Muslim countries

into the 1900s

more enslaved than in all of the Americas ever

Americans Europeans Russians

still slave trade in north Africa today; Arabs too?

still 30 million world-wide

India, Asia generally

Africa

i.e., wherever individual rights, lack of industrialization make slavery still viable

de facto slavery

droit de seigneur

reparations?

everybody has ancestors who were slaves, and who were slave owners

the end to slavery is not a stair-step that humanity has yet taken

Modern stair-steps

rights of the individual

politics

creation of first government

based on studies of prior governments – vs. tradition

authorized by people – vs. seized power by strong-man group

with limited powers – vs. government able to rewrite its own rules

object is protection of its citizens' rights – vs. domination and control

example – Britain and its ex-colonies vs. Spain and its ex-colonies

created wealth vs. seized wealth

results for each nation

industrial revolution

end of practicality of muscle power, slavery

replacement of hand tools with machinery

massive increase in creation of wealth

space travel

Humanity's next physical journey

reduce and ultimately eliminate dependence on a single world

and a single sun

forced increased in rationality to afford costs and to achieve needed technologies

new stair-steps to come – the journey never ends

“You have to expect progress will be made.”

Katherine Johnson; Hidden Figures, by Margot Lee Shetterly, p.245

By making progress yourself, you make it possible for others to expect progress to be made

Education is the underlying fundamental stair-step

food for thought

must continually self-improve

like the government,

education must meet the individuals' (parents' and children's) requirements

contributing or hindering

individuals

economics

governments

entire cultures

It took 13½ billion years for what we call modern humans to make their appearance on this stage we call the Universe. And at first, their place in existence could easily have been mistaken for a walk-on part.

There was nothing terribly special or noteworthy about them; they were just another species of genus *Homo* that foraged on the African savannah grasslands and along the coastal areas for food, bore children, and, lived on the edge of survival, facing constant and substantial climate change.

Though they had spread up and down the entire east African coast, their place on the food chain was open to doubt. There were five or six other genus *Homo* species that had come before. They *all* had a spoken language, all walked upright, all made tools, and all used fire (excepting the first, long-extinct *H. Habilis*). The others were still making their way in the world, and more than one had migrated to far-off lands – some to the edge of the snow, ice, and tremendous cold of glaciers, and some all the way to the islands of the Pacific Ocean.

Before genus *Homo*, there had been the various species of genus *Australopithecus* – ancestral to *Homo*, not quite as brainy, and not wanderers at all. But they also had language, walked upright, and made and used tools, just as they had done long before the genus *Homo* was a gleam in Nature’s eye.

Then something happened. The world started getting colder. It would never be as warm again, down to the present day. Trees in that part of the world could no longer grow; forests shrank and disappeared. Savannahs replaced forests. Steppes replaced savannahs. Deserts grew larger. Animals had to adapt or perish. They had to learn how to cope and live in a strange new world.

Australopithecines could not adapt. Even for genus *Homo*~~Error! Bookmark not defined.~~, all but the most recent species eventually found themselves trying to survive in conditions for which they could no longer find a means of survival. Failing to adapt, and failing to thrive, their numbers dwindled; they perished, becoming extinct.

Part of the problem was that newest species of genus *Homo*. They always seemed to figure out where to find food before the others – and there was not enough food to go around.

But even that one newest species found conditions very difficult. Many died; only a few thousand survived. Genus *Homo* was not working out.

And then something happened. With conditions at their very worst, something *changed*.

Whatever it was, that last remaining group of hominids not only survived; it **rebounded**. It *flourished*. Time after time, in new ways piled upon new ways, they grew in abilities, until that one group – calling themselves **Man**, and **Homo Sapiens**, were – in their own words – “fruitful and multiplied”.

Ultimately, they changed so much that they ceased having to adapt to their environment. Instead, they did something *revolutionary*: they began adapting their environment to suit their own needs, and more: they changed their environment to their own *designs*.

Nature’s efforts had finally won through. Life would not be denied; henceforth, it would *overcome*.

Life had an attitude: “The difficult, we do immediately; the impossible takes a little longer.”

Earth would never be the same again. If this keeps on, the Universe will never be the same again.

