

# Karl Popper and the Problem of Demarcation

## Creationism, Freud, Marx, Moon-Landing and Global Warming

Consider the quote on p.58 of your text: “A hypothesis is scientific if and only if it has the potential to be refuted by some possible observation.”

In connection to this quote and Karl Popper’s ideas on science, consider:

Do we apply this standard today?

Is there anything else that should be added to qualify a theory as “scientific”?

Are there any “pseudo-scientific” theories that we generally accept today?

Are there any good theories (by this standard) that we remain skeptical about?

Some theories to consider in relation to Karl Popper’s standards of good science:

[These are, admittedly, incomplete. We can fill in the details as we discuss them]

Black Crow Theory:

All Crows are Black

White Swan Theory:

All Swans are White

### Creationism – Version 1

James Ussher, Archbishop of Armagh (1581-1656)

The account given in Genesis is, word-for-word, true. God created the world in 7 days.

[October 23, 4004 BCE at 9 AM]

On the 5<sup>th</sup> day God created most of the animals and on the 6<sup>th</sup> day created humans.

Adam and Eve live in Eden until the “apple incident.”

Shortly afterwards, God sends a flood, Noah saves a pair of each species on a boat.

[This marks the distinction between antediluvian and postdiluvian periods]

God establishes a covenant with Abraham, a special arrangement with his descendents.

### Creationism – Version 2

William Paley (1743-1805)

The “Argument from Design” (dates back at least as far as Aquinas (1225-1274)

The world is populated by complex creatures, intricately connected in a cosmic harmony

Complex systems display signs of purpose. Purpose implies design.

(Consider the human eye or the relationship between bees and flowers)

There is no design without a designer. God is that designer.

### The Mechanistic Universe

Isaac Newton (1642-1727)

Nature is matter in motion, governed by laws, mathematically describable.

The Universal law of gravitation suggests that all bodies are acted on by force from others.

Described by the equation  $f(g) = Gm_1m_2/r^2$

3 laws of motion:

Every body stays at rest or in uniform motion unless acted upon by another force

Change in motion is proportional to the force exerted

To every action there is an equal and opposite reaction

The Shroud of Turin was wrapped around Jesus at the time of the Resurrection and still shows his image made from that event.

The Shroud of Turin has been carbon dated to approximately 1300 CE

## Dialectical Materialism

Karl Marx (1818-1883)

History is characterized by the process in which human societies progress through a series of stages toward a natural end.

The natural stages are – primitive communism, slavery, feudalism, capitalism, socialism and communism

These stages proceed from one to the next as a result of class struggle

This process is called “Dialectical materialism” – dialectical, because opposing forces battle in a pattern of continued conflict/resolution (as thesis and antithesis), material, because the means of production determine the social/political/economic structure of a society

## Freudian Psychology

Sigmund Freud (1856-1939)

The mind is composed of three internal structures: id, ego, and super-ego

Id = the unconscious, natural drives, instincts, repressed memories

Ego = the partly conscious, reason, thought, defense mechanisms

Super-ego = the partly conscious, conscience, guilt, morality

Much of our behavior is dictated by unconscious drives including the pleasure principle, various sex drives and the death drive

Repressed memories affect my behavior, they might motivate displacements and may even develop into neurosis

Dreams offer (cryptic) insight into the unconscious mind

Men may suffer from Oedipus complex

Civilization requires us to displace instincts even to the point of mild neurosis

## The Moon-landing Hoax

The 1969 Apollo 11 moon-landing (and all after it) were faked by NASA. Advocates (like Charles K. Johnson, head of the International Flat earth Research Society) claim that the landings were staged in Hollywood (scripted by Arthur C. Clarke and produced by Stanley Kubrick). They claim that a voyage to the moon is impossible and that the moon-landing was staged in an effort to impress/intimidate the U.S.S.R. as well as to apparently keep John F. Kennedy’s 1961 promise to put a man on the moon before the end of the decade. As evidence, advocates appeal to analyzed photos of the moon-walks in which the shadows appear to have inconsistent light sources, seemingly identical terrains in supposedly different areas of the moon, the appearance of the American flag moving in the wind (there is no wind on the moon), the impossibility of flying through the (highly radioactive) Van Allen belt, and more. No one has ever been to the moon.

Crop circles have been left in fields around the world by flying saucers.

## Global Warming

The Earth's average temperature is increasing (up 1.33°F over the past 100 years). The International Panel on Climate Change has recently said that this is highly likely caused by human activities producing increased levels of greenhouse gases causing a "greenhouse effect." These include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), most a product of burning fossil fuels. Other causes include deforestation and cattle farming. The effects include a warmer climate, changing weather patterns (more extreme weather events), melting polar caps/glaciers, rising sea levels, increased rates of species extinction and changing patterns of disease spread. Trade-in the SUV.

## Mayan Apocalypse

The world was supposed to end (or something equally bad) on December 21, 2012. This date is significant in that it is the final day of the 5,125 year long cycle in the Mayan "long count" calendar. Many ancient Meso-American cultures believed in a series of ages, each ended in widespread destruction. December 21 marks the end of one of those ages. How this would happen was a matter of speculation. Some expected the Earth to collide with an as of yet undiscovered planet called "Nibiru." Others expected that a planetary alignment (or an alignment between our solar system and the Milky Way) would generate gravitational forces that would destroy the Earth. Another theory had a solar flare causing a "geomagnetic reversal" (flipping the North and South poles). It could have been a good old-fashioned apocalypse with angels and a final judgment. Either way, we're not supposed to be here anymore.

Was this a persuasive theory before December 21, 2012? Has it been falsified?

Does this have any implication for the next apocalypse theory?

## The Secret

The Secret is a method that you might apply in order to achieve all of your goals and obtain all of your worldly desires. The method is elaborated in a 2006 book written by Rhonda Byrne. She says that by using "positive thinking," anyone can take advantage of the "law of attraction" and literally draw love, money, fame, success etc. to you. The law of attraction is an actual force in our universe. The right kind of thought can tap into this force in order to alter reality. Visualization techniques are at the core of the method. Visualize what you desire and it will come to you.

## Wingding theory

Microsoft knew about (or maybe even orchestrated) the 9/11 attacks on the World Trade Center in New York in 2001.

"Wingdings" is a font option in Microsoft Word that was created in 1990. Each letter on the keyboard produces a sign or symbol. For instance "abc" gives you ☺☺☺.

If you type the letters "NYC" (for New York City) in the Wingdings font, you get:

☺☺☺. Critics interpreted this as indicating that Microsoft was giving the "thumbs up" to kill Jews. Afterwards, it was also reported that the flight number of the first plane to strike the World Trade Center was "Q33 NY." In the Wingdings font, this translates as: ☺☺☺ ☺☺. This was taken to indicate that the plan was to fly a plane into two buildings, again, killing Jews.

(note: it was later revealed that the flight was not numbered Q33 NY. Theorists then suggested a plane number or part number was Q33 NY. There is no evidence that anything had that number on either of the planes).