



## Lesson Guide

### Lesson 2 - Philosophy and Ethics: Says Who?

#### Introduction

In this second installment of our worldview tour, Dr. Tackett takes students into the northeast quadrant of the compass for an introduction to Philosophy and Ethics, the two outside pillars of our Temple of Truth or framework of foundational concepts. In essence, the message of this lesson parallels the precept of Proverbs 23:7 – “As a man thinks in his heart, so is he.” The heart of the discussion lies in the thought that there is a formal and vital connection between our ideas about the nature of the world (philosophy) and our understanding of right and wrong behavior (ethics).

#### Themes

Philosophy, according to Dr. R. C. Sproul, is “a scientific quest to discover ultimate reality.” This would seem to indicate that philosophical ideas about truth are closely aligned with the biblical definition given in Lesson 1: truth = *reality*. In this connection, it’s worth noting that the 1828 edition of Webster’s Dictionary included the following affirmation: “true religion and true philosophy must ultimately arrive at the same principle.” Significantly, Webster’s original definition of the word also asserted that philosophy aims “to enlarge our understanding of God.” God, of course, has been edited out of subsequent editions of the dictionary. This is consistent with the perspective of contemporary culture, which has been taken captive by the unfounded *assumption* that “the cosmos is all there is or ever was or ever will be” (Carl Sagan). Another way to say this is that current thought pictures reality as a closed box – a *cosmic cube* – in which there is no room for anything that cannot be sensually or materially perceived. The problem is that with the lid of the box closed and God excluded, philosophy is deprived of a universal reference point and thus crippled in its “scientific quest for ultimate reality.” As a result, it cannot answer the most basic questions about *right* and *wrong* behavior.

#### Points to Watch For

Dr. Tackett persuasively argues that even the most outspoken adherents of “cosmic cube” thinking and relativistic ethics – thinkers like Carl Sagan and William Provine – cannot possibly *live* by their own reductionist and materialistic principles. On the other side of the coin, he suggests that many contemporary Christians have been unwittingly taken captive by the assumptions of our age (“conformed to this world”). He concludes the lesson by challenging students to *think* more aggressively about what it means to be “transformed by the renewing of the mind” (Romans 12:2).

## Discussion Questions

- 1) What did you see on this tour?
- 2) Why are so many people – even those who argue adamantly for the “cosmic cube” perspective – so obviously uncomfortable with life “inside the box”? How do they attempt to deal with this difficulty?
- 3) What do we mean by *universals* and *particulars*? How are they related? What bearing do they have on our quest for answers to the “Big Questions” of life?
- 4) Dr. Tackett asserts, “You won’t find the answers to the Big Questions inside the box.” Why not?
- 5) What, according to Dr. R. C. Sproul, is the distinction between *morality* and *ethics*? How has confusion on this point precipitated a *crisis in ethics* in the modern world?
- 6) How does the biblical worldview stand opposed to the “cosmic cube” worldview?
- 7) Is it possible for a Christian to be deceived and “taken captive” by the empty philosophies of the world? If you *have* been deceived, how do you know? How?



## **Tour Guide Notes: Spiritual Naturalism**

### **Lesson 2: Philosophy & Ethics: Says Who?**

This concept deserves a little more attention than what we gave it in the DVD especially because of the increased attention to “spiritualism” in our culture.

Naturalism, of course, is easy to define because its adherents maintain that all of reality exists within the natural realm. This is the essence of Sagan’s statement “The cosmos is all that is, ever was, or ever will be”. In a classic sense, naturalism has assumed that all of reality is made up of only things “physical”: matter and energy. This gives rise to the notion that man is a material beast and a material beast only. There is no spiritual essence to man. Additionally, the honest naturalist has to deal with the logical conclusion that the thoughts of man must come solely from the physical firings within the synapse of brain tissue, leaving man without a “soul” or “spirit” and giving rise to the notion of behaviorism and Dr. William Provine’s statement that man has no free will.

This position, however, leaves man in a difficult position. He inherently knows that he does have a free will because he can choose whether or not he is going to put on the red shirt or the blue shirt, whether or not he ties his left shoe first or right shoe first. He can even fold his arms or snap his fingers, once, twice, or even three times if he chooses. So, pure naturalism leaves man cold. He also has this innate sense that there is something about him that goes beyond the physical. He may not call it a “soul” because he may not be able to define the soul. But he knows that he is more than physical.

Secondly, we do not like a cold universe. We want something beyond the physical. When man rejects the true God, he generally will replace Him with something tangible, but will imbue that physical thing with spiritual characteristics. Here is where we get sun-gods and moon-gods, Nile gods and Baals. In our day, we get witches and ghosts, pantheism, The Force be with you, and all sorts of spirit-filled elements. Our movies and TV shows are filled with spirit-filled elements. It creeps under the door, it invades your body, it rises from the pond or it possesses the little girl next door. Many religions end up with a physical god, no matter how big or powerful.

So, we have simply added a third element to the box: spirit. You may find it interesting to know that Carl Sagan’s was a pantheist. He believed that the cosmos was all that there was, but he believed that it was a spirit-filled universe.

We shouldn’t be fooled by all of this. It is not a movement that we should embrace simply because people are “spiritual”. Satan and the demons are spiritual. Much of the evil that we deal with is “spiritual”. What is missing in all of this is the clear acknowledgement and acquiescence

to the transcendent creator God who has revealed Himself to us through His creation and His Word. That kind of a God is unacceptable to spiritual naturalists though, because that kind of a God represents a holiness that restricts their drive to do what they want to do.

## **Psalm 2**

- <sup>1</sup> Why do the nations conspire  
and the peoples plot in vain?
- <sup>2</sup> The kings of the earth take their stand  
and the rulers gather together  
against the LORD  
and against his Anointed One.
- <sup>3</sup> “Let us break their chains,” they say,  
“and throw off their fetters.”

PHILOSOPHY & ETHICS

says **Who?**

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2 **TIMOTHY 2:24-26**

The Lord's servant must gently instruct his opponents... "in the hope that God will grant them repentance leading them to a knowledge of the **truth**, and that they will come to their senses and escape from the trap of the devil, who has taken them **captive** to do his will."

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"See to it that no one takes you captive through hollow and deceptive philosophy, which depends on human tradition and the basic principles of this world rather than on Christ."

**Colossians 2:8**

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AN EXAMPLE OF

"**Hollow & Deceptive Philosophy**"

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**COSMOS: ASSUMPTIONS**

Carl Sagan, 1981 Humanist of the Year

"The Cosmos is all that is, or ever was, or ever will be."

"Our contemplations of the Cosmos stir us."

"There is...a faint sensation as if a distant memory...of falling from a great height..."

5

Sagan, Carl (Producer). (1980). *Cosmos*. Los Angeles, CA: Cosmos Studios.

**TAKEN CAPTIVE**  
the **Power** and **Danger** of  
Assumptive Language

**Assumptions are the most  
dangerous form of knowledge**

Assumptions are caught and bought  
without an open, conscious dialogue.

If you buy a statement, you buy  
its assumptions as well.



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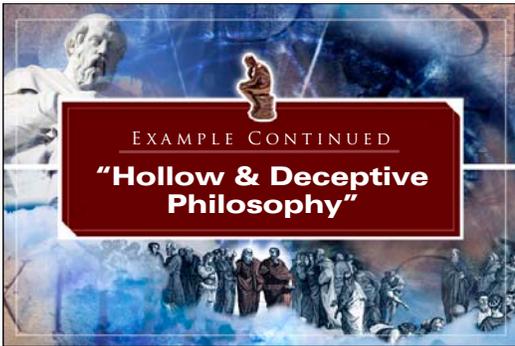
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**EXAMPLE CONTINUED**

**"Hollow & Deceptive  
Philosophy"**



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**COSMOS: ASSUMPTIONS**

**Carl Sagan, 1981 Humanist of the Year**

"Some part of our being knows  
this is where we came from. We  
long to return and we can because  
the cosmos is also within us."

"We're made of star-stuff."



8

Sagan, Carl (Producer). (1980). *Cosmos*. Los Angeles, CA: Cosmos Studios.

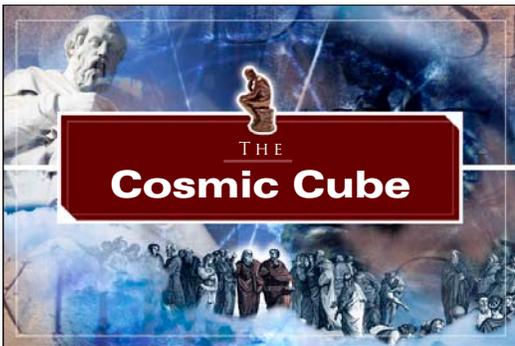
"The Cosmos is  
all that is, or ever was,  
or ever will be."

**Carl Sagan**



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Sagan, Carl (Producer). (1980). *Cosmos*. Los Angeles, CA: Cosmos Studios.



**THE  
Cosmic Cube**



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**AN OLDER DEFINITION**

**Philosophy:**

“The objects of philosophy are to ascertain facts or truth, and the causes of things or their phenomena; **to enlarge our views of God and his works...**”

Noah Webster  
1828 American Dictionary of the English Language



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Webster, Noah (1828). *American Dictionary of the English Language*. San Francisco, CA: Foundation for American Christian Education (Rosalie Slater, Ed., 1967).

**AN OLDER DEFINITION**

**Philosophy:**

“True religion and true philosophy must ultimately arrive at the same principle.”

**S. S. Smith**

cited in Noah Webster,  
American Dictionary of the English Language



13

Smith, S. S. (1828). “Philosophy.” Cited in Webster, Noah (1828). *American Dictionary of the English Language*. San Francisco, CA: Foundation for American Christian Education (Rosalie Slater, Ed., 1967).

**PHILOSOPHY**

“...a search for the underlying causes and principles of reality.”

Webster’s 3<sup>rd</sup>  
New International Dictionary



14

Gove, Philip Babcock (Ed.). (1993). *Webster’s Third New International Dictionary*. Springfield, MA: Merriam-Webster, Inc., Publishers.

**PHILOSOPHICAL QUESTIONS**

what is **existence**? what is **reality**?

what does it **mean** to exist?  
how do I **know** I exist?  
if I do exist, **why** do I exist?

if I **think** I exist,  
where did that thought **come from**?

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**PHILOSOPHICAL QUESTIONS**

what is **thinking**?  
 what is **reason**?  
 what is **logic**?

what is **knowing**?  
 if I know **something**,  
 how can I **know** that it is **real**?

what is the  
**meaning** and **purpose** of life?

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the philosophical  
**"Holy Grail"**

**THE UNIVERSALS**

the **Particulars**



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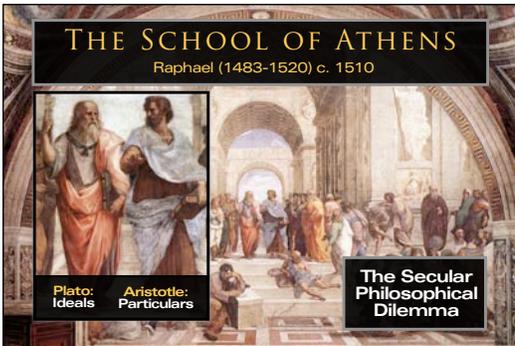
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Sanzio, Raffaello (Raphael). (c. 1510). *The School of Athens*. Rome: The Vatican Gallery.

18

**THE SCHOOL OF ATHENS**  
 Raphael (1483-1520) c. 1510



Plato: Ideals  
 Aristotle: Particulars

**The Secular Philosophical Dilemma**

19

Sanzio, Raffaello (Raphael). (c. 1510). *The School of Athens*. Rome: The Vatican Gallery.

naturalism's philosophical **problem**

(give meaning to the particulars)  
**UNIVERSALS**

**gap**

**PARTICULARS**  
 (including each of us as a person)

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naturalism's philosophical **problem**

how does one **find** the

**UNIVERSALS?**

**why** am I here?

what is the **purpose** of life?

is there any **meaning** to existence?



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**SEEKING TRUTH**



He believed he could find them in mathematics, then science, then art. Ended up empty. Died a despondent, depressed man without hope... failed to find the universals of life.

**Leonardo Da Vinci**

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beginning with **Universals**

**universals**

God's approach ↓ ↑ the world's approach

**particulars**



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**"Hollow & Deceptive Philosophy"**

- **Materialism:** matter is the only reality
- **Idealism:** ideas are the only reality
- **Empiricism:** knowledge comes from experience
- **Rationalism:** knowledge is gained by reason without experience
- **Naturalism:** true knowledge only comes from scientific study
- **Determinism:** there really is no knowledge, you only react to stimuli
- **Relativism:** there are no absolutes

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**"Hollow & Deceptive Philosophy"**

- **Mentalism:** mind is the true reality and objects exist only as an aspect of the mind's awareness
- **Mechanism:** everything can be explained in terms of physical or biological causes
- **Solipsism:** self is all you need to know
- **Subjectivism:** knowledge is dependent upon and limited by your own subjective experiences
- **Intuitionism:** knowledge comes primarily from some kind of inner sense
- **Hedonism:** pleasure is good, pain is evil; if it feels good, it is
- **Etc.**

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POSTMODERNISM  
can you **Live** it?

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**ETHICS**  
what is **right**?  
what is **wrong**?  
who makes the **rules**?

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**RIGHT OR WRONG?**  
"Plato's Euthyphro...discusses whether an act is right because God wills it, or whether God wills it because he knows it is right?"

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Harward, J. and Hutchins, Robert Maynard, ed., *The Dialogues of Plato*, vol. 7 of *Great Books of the Western World*. Chicago: Encyclopedia Britannica, Inc., 1952, p. 195.  
Feinberg, John S., and Feinberg, Paul D. *Ethics for a Brave New World*. Wheaton: Crossway, 1993, p. 26.

**RIGHT OR WRONG?**  
"According to [William of] Ockham, whatever God wills must be done simply because He says so. If God had wanted, He could have ordered men to obey the opposite of the Ten Commandments. Even now He can rescind those laws and will their opposite."  
Cited in Feinberg & Feinberg

29

Feinberg, John S., and Feinberg, Paul D. *Ethics for a Brave New World*. Wheaton: Crossway, 1993, p. 26.

**DR. WILLIAM PROVINE**  
"Non-assumptive" Language  
**Naturalistic Philosophy Implications**  
No gods or purposive forces  
No ultimate foundation for ethics  
No free will  
No life after death  
No ultimate meaning in life  
Debate with Phillip Johnson, Stanford University, April 30, 1994

30

Johnson, Phillip & Provine, William (1994). *Debate at Stanford University*. Palo Alto, CA: Stanford University, April 30.

**THE BATTLE IS REAL**

"See to it that no one takes you captive..."



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**TAKEN CAPTIVE**

Barna Study:  
How many Americans have a **biblical worldview**?

General American population: 4%  
"Born-again" American population: 9%

...and we don't **act** that **different** from the **world**...

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"A Biblical Worldview Has a Radical Effect on a Person's Life," 12/1/2003. [www.barna.org/FlexPage.aspx?Page=BarnaUpdate&BarnaUpdateID=154](http://www.barna.org/FlexPage.aspx?Page=BarnaUpdate&BarnaUpdateID=154)

"The church's **singular failure** in recent decades has been the failure to see Christianity as a life system, or worldview, that governs **every area of existence**."

**Charles Colson**  
How Now Shall We Live?



33

Colson, Charles (1999). *How now shall we live?* Wheaton, IL: Tyndale House Publishers, Inc. p. xii.

**what is Your worldview?**



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**FORMAL WORLDVIEW**

A comprehensive set of truth claims that purports to paint a picture of reality.

secular humanism      postmodernism  
marxism      **Christianity**      naturalism  
islam

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## THE COSMIC BATTLE

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## PERSONAL WORLDVIEW

The set of individual truth claims that you have embraced so deeply that you believe they reflect what is really real, and therefore they drive what you think, how you act, and what you feel.

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what are the **consequences**?

**Buy** the lies...  
**Conform** to the world...

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## THE SOLUTION

“Do not conform any longer to the pattern of this world, but be transformed by the **renewing of your mind...**”

**Romans 12:2**

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## METAMORPHOO

“Do not conform any longer to the pattern of this world, but be **transformed** by the renewing of your minds...”

**Romans 12:2**

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## METAMORPHOO

After six days Jesus took Peter, James and John with him and led them up a high mountain, where they were all alone. There he was **transfigured** before them.

Mark 9:2

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## METAMORPHOO

And we, who with unveiled faces all reflect the Lord's glory, are being **transformed** into his likeness with ever-increasing glory, which comes from the Lord, who is the Spirit.

2 Corinthians 3:18

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## WHY?

### WORLDVIEW STUDIES



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## Outline

### Lesson 2 - Philosophy & Ethics: Says Who?

- I. Introduction – Have you been taken captive? - 2 Timothy 2:24-26
  - A. Scriptural warning against hollow and deceptive philosophy – Colossians 2:8
  - B. Carl Sagan’s Worldview – “The Cosmos is all there is, or ever was, or will be”
  - C. Assumptive language – A powerful and dangerous form of knowledge
  - D. Cosmic Cube – Illustrates the naturalistic worldview belief that there is nothing outside the cosmos; reality is a closed box and all truth must be materially perceived
  - E. Biblical presuppositions – God is and He has revealed himself to us (general revelation through our world and specific revelation through His word)
  - F. God’s Nature - Transcendent and immanent – He is above and works within the box
- II. Philosophy – What is it?
  - A. Webster 1828 definition vs Current definition – God has been removed from the discipline of philosophy in today’s culture
  - B. Philosophical Questions – What is existence? What is the meaning and purpose of life?
  - C. Universal and Particulars – Aristotle and Plato’s philosophical dilemma – How do we arrive at Truth? How do we make sense of the unity and diversity of our world?
- III. Postmodernism – Can you live it?
  - A. What is Right? What is wrong? - Ethical implications of postmodernism – There is no basis for ethical standards or ethical language in a naturalistic worldview
  - B. Plato’s Question – “Is an act right because God said it, or did God know it was right and told us about it?” – His laws are an expression of His nature

- C. Naturalistic philosophy implications – Darwin’s views in non-assumptive language
  - D. Statistical Ethics – Our culture determines ethics through normalcy and survey data
- IV. Worldview – Formal worldview vs personal worldview
- A. Lack of a personal, biblical worldview in America – We fail to see Christianity as a worldview that governs every area of life
  - B. Our worldview drives how we think, act, and feel – What we *really* believe
  - C. Consequences of a non-biblical worldview: We buy the lies and conform to the world
- V. Conclusion and Solution – Renewing of the Mind – Metamorphoo – Romans 12:2  
“Do not conform any longer to the pattern of this world, but be transformed by the renewing of your mind.”



## Key Terms

### Lesson 2 – Philosophy and Ethics: Says Who?

**Assumptive Language:** Powerful and deceptive use of words in which a seemingly simple statement is made, hoping the hearer will buy the simple statement without recognizing the huge assumptions that come with it. When one buys the simple statement, you buy its assumptions without knowing it.

**Biblical worldview:** A formal worldview based ultimately upon that nature, character, and being of God as it is expressed in His infallible Word and His creation. It becomes the foundation for a life system that governs every area of existence.

**Capricious:** Impulsive, unpredictable, characterized or subject to whim. Not guided by steady judgment, intent or purpose.

**Carl Sagan** (1934-96): An American astronomer and proponent of scientific naturalism who promoted the Search for Extra-Terrestrial Intelligence (SETI). *Cosmos* was the most watched television show on PBS of all time (more than 600 million people have seen it since it first aired in 1980), and his novel *Contact* was made into a film of the same name in 1997 starring Jodie Foster.

**Cosmic Cube:** The philosophy that has consciously or subconsciously captured our culture which says the material world is all that is, was, or ever will be; nothing exists outside of the box. This philosophical position has severely damaging implications.

**Epistemology:** the branch of philosophy that studies the nature of knowledge, its foundations, its presuppositions, and its extent and validity. How we know what we know.

**Ethics:** The standard, the line, that which ought to be. The principles of conduct governing a person or group of people.

**Formal worldview:** A comprehensive set of truth claims that purports to paint a picture of reality.

**Fundamental biblical presuppositions:** God is and He has revealed Himself to us through His creation (general revelation) and through His Word (special revelation).

**Hollow and deceptive philosophy:** Philosophies that are based on human traditions and worldly principles that set themselves up against God's truth claims. See Colossians 2:8.

**Immanent:** Present in and involved in the created universe. God is at work, actively involved with His creation, but separate from it (see "Transcendent").

**Metamorphoo:** Greek for "transformation." Root of the word "metamorphosis." This is the primary goal of The Truth Project: for individuals to be transformed into the likeness of Christ by gazing on the face of God. This process is not easy and we often struggle with God's Truth claims in the "cocoon." Metamorphoo is used in Romans 12:2, where it is usually translated as "transformed."

**Metaphysics:** the branch of philosophy that examines the nature of reality, existence, and the relationship between mind and matter, time and space, fact and value.

**Morality:** The rightness or wrongness of conduct; that which is. Habits of life or the practices of an individual or culture.

**Naturalism:** Truth and reality are derived from nature and natural causes. Rejects all spiritual and supernatural explanations of the world and holds that science is the primary basis of what can be known.

**Particulars:** Individual truth claims; the small details that describe "particular" objects.

**Personal worldview:** The set of individual truth claims that you have embraced so deeply that you believe they reflect what is really real and therefore they drive what you think, how you act, and what you feel.

**Philosophy:** The love of wisdom. The systematic examination of basic concepts such as truth, existence, reality, freedom, etc. Webster's 1828 dictionary definition: "The objects of philosophy are to ascertain facts or truth, and the causes of things or their phenomena; to enlarge our views of God and his works..." True religion and true philosophy must ultimately arrive at the same principle.

**Postmodernism:** cluster of philosophies with the underlying assumption that no one worldview or belief system (metanarrative) can claim to be the truth, which often results in relativistic thinking and the use of language as a power play.

**Pragmatic:** more concerned with practical results than with principles or truth.

**Primary doctrine:** Theology and Anthropology. Who is God and who is man? These are the two basic foundations for a person's and a culture's worldview.

**Spiritual Naturalism:** Truth and reality are derived from nature and natural causes. Accepts a spiritual dimension to this world, but adds spirit inside the Cosmic Cube and, as a result, rejects a transcendent creator.

**Transcendent:** Existing outside, above and independent, of the material universe. God is transcendent, but also immanent (see "Immanent").

**Universals:** Broad "universal" truth claims that provide meaning to the smaller "particular" questions in life. "Universals" provide answers to the great philosophical questions we face.

**Utilitarian:** relating to or advocating the doctrine that value is measured in terms of usefulness, concerned with practicality.

**William Provine:** A professor of evolutionary biology at Cornell University who is an atheist and adamant opponent of intelligent design.



**Scripture References**  
**Lesson 2 – Philosophy & Ethics: Says Who?**

2 Tim 2:24-26

Col 2:8

Rom 12:2

Mark 9:2

2 Cor 3:18



## **Recommended Reading**

### **Lesson 2 – Philosophy & Ethics: Says Who?**

Please note that not everything in these suggested resources should be considered endorsed by Focus on the Family. Nevertheless, Dr. Tackett has found this material helpful. Scripture should be your first and primary resource.

- Gordon Clark, *Thales to Dewey: A History of Philosophy* (Boston MA: Houghton Mifflin Company, 1957)
- John Jefferson Davis, *Evangelical Ethics: Issues Facing the Church Today* (Phillipsburg, New Jersey: P&R Publishing, 1993)
- John S. and Paul D Feinberg, *Ethics for a Brave New World* (Wheaton, IL: Crossway Books, 1993)
- Francis A. Schaeffer, *He Is There and He Is Not Silent* (Wheaton, IL: Tyndale House Publishers, 1972)
- James W. Sire, *Naming the Elephant* (Downers Grove, IL: InterVarsity Press, 2004)
- R. C. Sproul, *The Consequences of Ideas: Understanding the Concepts that Shaped our World* (Wheaton, IL: Crossway Books, 2000)



## Historical Figure: Carl Sagan

"Poor Carl Sagan!" wrote a Pennsylvania viewer in reaction to the phenomenally successful 1980 PBS television series *Cosmos*. "He so desperately wants to find man's significance in the cosmos, but he simply cannot bear to speak the word that would give his grand search coherence and conclusion: *God*."<sup>1</sup> Thus in a few words this keen observer summed up the central problem of Sagan's life and work.

Carl Sagan was a study in inconsistencies and contradictions. Born in Brooklyn to Jewish parents on November 9, 1934, he inherited a skeptical, rationalistic outlook from his mother, Rachel – a hard-nosed, sharp-tongued woman who believed in God and was active in the local synagogue – and a sense of wide-eyed, childlike wonder from his father, Sam – an ambitious son of Ukrainian refugees who took pride in his Jewish ancestry but styled himself an atheist. Sagan was to spend much of his life in a less than successful attempt to reconcile and synthesize these conflicting elements in his heritage and personality.

It's a testament to the power of his father's upbeat temperament and his mother's protective care that Carl, a Jewish boy with relatives in Hitler's concentration camps, rapidly developed into an indefatigable optimist. This native optimism received a timely boost at the 1939 New York World's Fair, where the five-year-old Sagan was dazzled and delighted by bright and hopeful visions of America's coming techno-utopia. That visit to the fair was a defining experience. Through all the years that followed, Carl never lost faith in what he considered the redemptive power of science and technology.

Faith in God was another matter. He rejected religion from a very early age. "In exactly that period when I was sort of seriously reading the Bible," he wrote, "I found [in it] all sorts of obvious contradictions with reality."<sup>2</sup> Significantly, this loss of confidence in traditional spirituality was accompanied by a growing interest in mythology, science-fiction, and extraterrestrial life. As an adolescent Sagan devoured the space novels of Edgar Rice Burroughs, steeped himself in Percival Lowell's speculations about Martian civilization, and solidified his belief in the existence of benevolent alien super-beings. For all his rationalism, it seems that Carl simply could not be content with a purposeless and impersonal cosmos. He remained a proponent of the search for extraterrestrial life throughout the course of his professional career.

Not surprisingly, it was during this period that Sagan first became interested in astronomy. His mother, hearing him express his curiosity about the stars, advised him to go to the library and get a book on the subject. He followed her counsel and was astounded to discover that the stars are not merely tiny points of light but distant blazing suns. "The scale of the universe suddenly opened up to me," he said in retrospect. "[It was] kind of a religious experience."<sup>3</sup>

That "religious experience" became the prelude to Sagan's life work. From the moment he learned that astronomers actually get paid to study the heavens, his mind was made up and his course was set. He worked hard in high school, distinguishing himself as a student of exceptional ability, and upon graduation enrolled at the University of Chicago. There he went on to earn three degrees in astronomy and astrophysics: a Bachelor of Science in 1955; a Master's in 1956; and a Doctorate in 1960.

After completing a fellowship at the University of California at Berkeley, Sagan taught at Harvard until 1968. Refused tenure by the Harvard board of regents, he moved to Cornell University, where, in 1971, he was appointed David Duncan Professor of Astronomy and Space Sciences and Director of the Laboratory for Planetary Studies. In this role Sagan distinguished himself by conducting breakthrough studies of Venus and Mars, Saturn's moon Titan, and Jupiter's moon Europa. He also played a leading role in planning and executing the Mariner, Viking, Voyager, and Pioneer unmanned spacecraft expeditions, receiving NASA's Exceptional Scientific Achievement and Distinguished Public Service medals in the process.

But Sagan's greatest achievements did not come in the field of scientific observation and experimentation (an area in which some of his colleagues had doubts about his proficiency). Instead, he made his greatest mark as a television celebrity and a remarkably effective *popularizer* of scientific ideas. Through the publication of several mass-market oriented books, including *Intelligent Life in the Universe*, *The Dragons of Eden*, *Comet*, and *Shadows of Forgotten Ancestors*, and a series of appearances on Johnny Carson's *The Tonight Show*, Sagan gained notoriety as the hip, cool, and sexy young guru of a vaguely "spiritual" but solidly scientific *philosophy* of life. This aspect of his career reached its apex with the production of the thirteen-episode series *Cosmos*, which had an unprecedented impact upon the television-viewing world. In addition to winning an Emmy and a Peabody Award, *Cosmos* was seen by an estimated 600 million viewers in more than sixty different countries around the globe. The program's essentially monistic and materialistic understanding of reality – summed up in the statement, "The cosmos is all there is, all there ever was, and all there ever will be" – has since become part of the fabric of our cultural consciousness.

At the conclusion of Carl Sagan's novel, *Contact* (1985; film version 1997), astronomer Ellie Arroway – a mirror image of Sagan himself – uncovers evidence that a "super-intelligence" (probably a highly advanced form of alien life) has designed the universe.<sup>4</sup> This fictional work was Sagan's final testament to the world, an expression of his hopeful expectation that mankind would soon establish contact with extraterrestrials. It is interesting that the man who rejected religion and clung to rigorous rationalism should have so readily embraced the unfounded notion of a cosmos burgeoning with intelligent life and populated with godlike aliens. Having closed the lid on the "cosmic cube," Sagan appears to have been eager to find a basis for some kind of transcendent experience *inside the box*. Herein lies part of the secret of his overwhelming popular appeal. It may also be the key to understanding the contradictions and inconsistencies that were such recurring features in his work and personal character.

Carl Sagan died on December 20, 1996 at the Fred Hutchinson Cancer Research Center in Seattle, Washington. The cause of death was complications of myelodysplasia. His last words, spoken to his daughter Sasha and his third wife, Ann Druyan, were, "I love you."

<sup>1</sup> From *Time* magazine letters page, November 10, 1980; quoted in Keay Davidson, *Carl Sagan: A Life* (New York: John Wiley & Sons, Inc., 1999), 332.

<sup>2</sup> Davidson., 55.

<sup>3</sup> Ibid., 18.

<sup>4</sup> Ibid., 350.