

Adult Sunday School Class: A Christian Philosophy of Learning

Application to Science

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(Note: These notes are a lightly edited version of the notes that I used in teaching the class. The form is based on the style used by [Winston Churchill](#) for his speech notes.

Unless otherwise indicated, Scripture quotations are from the New American Standard Bible, copyright by The Lockman Foundation.)

[Title slide up at the beginning]

Today is our 8th meeting,
and our second class
in which we're trying to make applications
of a Christian philosophy of learning
to particular areas of study.

Last week we looked at apologetics;
this week we'll consider science.

Before we start that, however,
let's review very quickly
some of what we've discussed
in our previous seven classes.

[Next slide]

We're trying to develop
"A biblically-sound
comprehensive way of thinking about
acquiring and applying truth."
Recall that I emphasized
the "a" —
I'm not claiming to present the only
way of thinking about learning,
but simply one way that is consistent
with the Scripture.

Specific elements of this philosophy of learning,
we're calling valuable verities.

We've discussed eleven of these verities so far.

First, **A wise person
will continually seek
to acquire and apply truth
for the glory of God.
An unwise person will not.**

Second, **Truth
consists of all the propositions
that God affirms.**

Third, **A truth is still a truth,**

even if you do not believe it is true,
or if you do not know whether it is true,
or if God has not chosen to reveal that it is true.

Fourth,

**The starting point
for acquiring and applying truth is regeneration.**

Fifth, **No person**

**ever reaches a point
where he should stop acquiring and applying truth.**

[Next slide]

Sixth, **All Scripture is given by inspiration of God,
and is profitable for doctrine,
for reproof,
for correction,
for instruction in righteousness,
that the man of God may be complete,
thoroughly equipped for every good work,
which comes from 2 Timothy 3:16-17**

Verity number 7 is

**God does not need to reason
from known truth to new truth,
because He knows everything all at once.**

Where as, verity number 8 says:

**Humans must reason
from known truth to new truth,
because we do not know everything all at once.**

Verity 9 talks a bit about human reasoning:

**Human reasoning
may be divided into two main types:
deductive reasoning,
which is evaluated as to validity and soundness;
and
inductive reasoning,
which is evaluated as to strength,
burden of proof,
and standards of proof.**

Last week,

as we talked about apologetics,
we added two more verities,
one general, and one specific to apologetics.

[Next slide]

The general one was this:

Proponents of a particular theory

**rarely give accurate descriptions
of opposing theories,
no matter how hard
they try to be accurate.**

Recall, that I suggested that this has a pretty clear application:
if you're interested in learning as much as possible
about what particular theories say
in some area,
you should study material from the proponents
of each theory,
and not rely on what is said
by proponents of your favorite theory.

This particular verity is especially appropriate
when discussing science.

One of the main mistakes
committed by many of today's creation scientists
is to grossly misrepresent what non-creationists
are actually teaching.

As I've said before,
I am a young earth creationist,
but that doesn't keep me from pointing out
errors in what is said and written by others
who share the same view —
too often we creationists
talk about theories that no one,
at least no credible scientist,
holds, and think that by refuting these theories,
we've refuted evolution.

The final valuable verity that we've discussed so far was this:

**All legitimate apologetic methods
affirm these two propositions:**

**(1) Unbelief in the Gospel
stems from sin,
not
from intellectual problems
with the message;**

**(2) Only God,
by his grace,
saves anyone.**

[Next slide]

Recall finally,
that last week we discussed five particular
apologetic methods,

which I labeled with letters,
instead of real names,
or the names of their chief proponents.

These are summarized on this slide.

E: Christianity has worked wonders in my life. ...

J: The historical record confirms much of what the Bible says. ...

R: There exist valid deductive arguments for the existence of God, and the historical record strongly suggests that this God has revealed Himself in the Bible. ...

C: Assuming Christianity is true is necessary for proving anything at all. ...

G: The Bible says it is true, and we can show by valid deductive argument that no other belief system can be true. ...

In discussing these 5 methods,
I suggested that two of the primary differences
among them
could be described in terms
of standards of proof,
and necessary assumed propositions.

Oh, by the way,
the letters stand for
Experience,
Josh,
R.C.,
Cornelius,
and Gordon
(perhaps the E
should have been a B,
for Bill or Benny).

The G could also probably have been
an F for Frances.

When we talked about these methods
I mentioned that there has been quite a bit
of quarreling among people about which method is best,
and that this quarreling has sometimes
been at the level of political mudslinging.

One thing that I didn't make clear
is that this state of affairs is a relatively recent one.

The Reformers, for instance,
didn't spend much time arguing over apologetic method,
but rather used whichever method
was appropriate for their audience at the time.

If you read Jonathan Edwards carefully,

you'll find instances of the use of all 5 of these methods
I mentioned,
in one form or another.

Let's talk now
about applying a Christian Philosophy of Learning
to learning about science.

As I mentioned last week about apologetics,
our discussion will be quite incomplete.
We could easily spend many, many classes
talking about this subject.

I've had a very difficult time
putting together this discussion
in a coherent
and useful way;
I'm still not very satisfied with it,
but I hope you'll find it helpful in some way
nonetheless.

We'll begin by reviewing
the 3 questions I asked you to consider for homework.

[Next slide]

Those questions were as follows:

What is science?

To what extent is science concerned with truth?

Are there currently some subjects studied by scientists
that would not be studied
if
all scientists
had a Christian philosophy of learning?

Before we discuss these questions,

let's talk a bit about modern attitudes towards science,
assuming for a moment
that we all have some general idea
about what it is.

[Next slide]

The
prevailing modern view of science
approaches or reaches idolatry.

This quote illustrates the prevailing view quite well:
"Scientists are the high priests of modern society.
Their mastery of arcane formulae

and esoteric machinery
 commands respect and fear. ...
They traffic in miracles
 that are subtle and real.
They trace the lines of force from invisible fields,
 deduce the existence of particles
 that can never be seen,
 detect the residual glow
 of the early universe,
 and decipher the chemistry of life itself.”
 (D. H. Kaye, *Science in Evidence*)

In the minds of the average American today,
 “scientific” is the ultimate compliment
 and “unscientific” is ultimate criticism.

[advance slide]

In contrast,
 many modern Christians hold a nearly opposite view.
 Instead of worshiping science,
 they hold it in disdain,
 and denounce it as a tool of the infidels
 to deny the Creator,
 promote promiscuity,
 and do all other manner of evil.

These Christians tend to think
 that science should be studied
 only enough to show that it is all wrong.

[Next slide]

Of course,
 neither of these views is right.

As Christians,
 we should neither worship science,
 nor fear it.

Perhaps the best way to avoid
 falling into either extreme
 is to have a good understanding
 of answers to the 3 homework questions,
 So let's talk about those now,
beginning
 with the basic question:
 What is science?

[Next slide]

Someone give me your answer to this question.

[Continue this for a while]

This is actually a very difficult question to answer,
for at least two reasons.

One is that the word
has been used in many different ways
throughout its history as an English word.

For example,
it once meant nothing much more than
“a field suitable for intellectual study”.

The Middle English word from which science is derived
was pretty much the same as simply “knowledge”.

So theology,
and mathematics,
were considered just as much sciences
as physics and chemistry.

Today,
most people would not classify
theology or mathematics as sciences.

Another is that
scientists and philosophers of science
never have really agreed on
the specific characteristics
that distinguish science
from other disciplines.

Part of the American Heritage Dictionary
entry isn't too bad, however,
so I'll show that to you.

[Next slide]

The observation,
identification,
description,
experimental investigation,
and theoretical explanation of phenomena.

Where phenomena are
occurrences, circumstances, or facts
that are perceptible by the senses.

[Next slide]

A key idea here
is that science involves that which
can be perceived by the senses.

In other words,
if it can't be seen, heard, felt, tasted, or smelled,

then it isn't a subject for science.

Most scientists will probably agree with this,
although many will say that,
as a definition, it is incomplete — and they are right,
as we'll see soon there are other key points, too.

Some people take this too far, however,
and go on to say that
if it can't be seen, heard, felt, tasted, or smelled,
then it isn't a subject for any kind of study,
or the extreme view is
that then
it isn't
period,
that is,
the only reality is that which we perceive
with our senses.

This would be a great time
to correct a major deficiency
of the course so far,
which is the lack of any
explicit Inquisitive Interludes.

Recall that the first week I told
you that from time to time
I'd present some material that might be
more explicitly abstract and philosophical
than some, perhaps many, of you
would find interesting,
and that I'd warn you of such material
by calling it an Inquisitive Interlude —
Well,
we've not had any of those,
until now.

[Next slide]

Think for a moment about this question:

What does the extreme empirical view
that is
that the only reality
is what I perceive with my senses
do to the following ideas?
History
Cause and Effect
Ideas

What does it do?

[advance slide]

It renders them all meaningless.

Let's take the 2nd of these — cause and effect —
we can never directly observe
one thing causing another thing to happen.

The most that we can ever observe
is that when one thing happens
the other thing follows.

We can never know,
by our senses alone,
why things happen this way,
or even if they will always happen this way.

Perhaps the next time the first thing happens,
the second one will not.

Using only our senses, we cannot rule out this possibility.

We don't have time this morning to do it,
but in your spare time you might want to think
a bit about the analog to this question:
What effect does an extreme
anti-empiricism view have?

That is,
what are the implications
of denying that we get
any knowledge at all
from our senses?

That's it for the inquisitive interlude.

Let's return to talking about
what science is.

[Next slide]

We said that a key idea
is that objects of study in science
are things that can be sensed.

That's not the only key idea,
however.

Another key idea
involves the method of study used in science.

[Next slide]

Here's a simplification of one view of that method.

One of the main simplifications

is in talking about a single scientist
when in fact most likely there are many.

Please don't anyone say anything until
I ask some questions after my description.

A scientist wonders why something happens.

He then develops an hypothesis
why things happen the way they do,

And he develops experiments
and works out what the results of these
experiments will be
if his hypothesis is correct.

The scientist then conducts the experiments
and observes the results.

If the expected results happen,
then the scientist concludes the hypothesis is right

If the expected results do not happen,
then the scientist concludes his hypothesis is wrong.

How many of you think
that this is a basically accurate,
although quite simplistic,
view of how science is done?

[Next slide]

There are probably some scientists —
bad scientists —
who work this way,
but there's a serious flaw here.

What is it?

It is logically fallacious to conclude
that the hypothesis is correct
simply because the experiments
produced the expected results.

[advance slide]

Doing so commits the fallacy
of affirming the consequent,
which is illustrated here by an example
that we call can see is fallacious reasoning,
even without knowing much logic.

Suppose we know that
If John is a Presbyterian, then he is a Christian

And we also know that
John is a Christian.

We cannot conclude that John is a Presbyterian.

Neither can the scientist conclude that his hypothesis
is correct,
simply because the experiments
turned out the way they would turn out
if the hypothesis were true.

Are there any questions or comments at this point?

As I said,
no good scientist thinks
he can make such a conclusion.

What scientists really do,
again, greatly simplified,
is more like this.

[Next slide]

Everything is the same except for
what the scientist concludes
if the experiments turn out the way he expects:
He concludes that his hypothesis
may
not be wrong.

As more and more experiments are conducted,
by more and more different scientists,
and the results continue to be as expected,
confidence in the correctness of hypothesis will grow.

Before we talk more about
how far confidence in correctness can grow,
let's think a minute about this question:

What part of this process
is most directly affected
by the worldview of the scientist?

[Next slide]

I think that the part of the process
that is most directly affected
by the worldview of the scientist
is in developing the hypotheses
to be considered.

For example,
a scientist who believes it is possible
that humans evolved by natural selection

will undoubtedly consider a different set
of possible hypotheses
than will
a scientist who believes
that God created man directly
from the dust of the ground.

Let's go back now to thinking about correctness.

Recall the standards of proof
we talked about a few weeks ago.

That's actually a good way to think
about answering
our second question
about to what extent is science
concerned with truth?

[Next slide]

Here's our list of 5 standards of proof:

- 1: affirming conclusion has more practical benefits
than denying the conclusion
- 2: conclusion is more likely true than false
- 3: conclusion is much more likely to be true than false
- 4: conclusion is true beyond a reasonable doubt
- 5: conclusion is true beyond any conceivable doubt

[What standard of proof can science meet?](#)

I think that how far up the scale
you're willing to say science can go
depends primarily on
the extent to which you
trust the basic reliability of our senses.

There are some very interesting
implications of anyone saying
that it is not possible for science
to go higher than level 3,
one of which is that such a person
should never convict
a person of a felony
based on fingerprint and blood evidence
alone (for example).

The third question I asked you to consider for homework
was whether there are currently

some subjects studied by scientists
that would not be studied
if all scientists had
a Christian philosophy of learning.

How did you answer this question?

I'll answer it like this,
with our 12th valuable verity.

[Next slide]

**All legitimate scientific inquiry
operates within the
framework and constraints
established by God's revelation
in Scripture.**

Let's talk a bit about the implications
of this verity.

How does this affect
the subjects to be studied?

[allow discussion based on available time]

How does this affect
the way in which one studies?

[allow discussion based on available time]

As I did last week with apologetics,
let me end our discussion this morning
with three closing suggestions.

[Next slide]

First,
be neither in awe
or afraid of science (or scientists).

Second,
When reading or hearing
about science
(or any other subject for that matter)
in the common media
(whether secular or Christian),
recognize that
almost any report
will be wrong in important ways.

Third,
Thank God for the blessings
that He has brought to us

through the work of scientists
(and engineers),
including those who refuse
to acknowledge that He
is the source of all truth.

I'm really quite pleased
that I have this laptop computer
to use to develop my slides and notes,
and the beamer to use to project them to you,
and this digital recorder
to record the talk.

Without the work of scientists and engineers
we wouldn't have any of these things.

[Next slide]

Next week, we'll talk about applications to literature
and other arts.

Here's your's week's work.

W_8^2 : Pick a short passage from a favorite literary work,
and list some of the propositions affirmed by this passage.

You may also do the same
for a painting or some other work of art,
if you like.

Also, Quote ID challenge #2 continues,
with the number of wrong answers
now up to 4:

Teddy Roosevelt,
Woody Allen,
David Holloway,
and
Gordon Clark.

One last thing I'll mention before dismissing you this morning:
I am putting together a suggested reading list
about the topics we've discussed in the class.
It will be incomplete, of course,
but some of you might find it useful.

I'll post it on the web site in a few weeks,
and also have printed copies available
in the last class,
and perhaps the one before that.

That's all for this morning. Thanks.