

Islam and science.

2: Some details

C. K. Raju
Centre for Studies in Civilizations
New Delhi
<http://ckraju.net>

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Outline

Recap

“Laws” of nature

Crusades and “laws of nature”

Science and “laws”

Mathematics and eternal truth

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ We saw earlier that according to Western propaganda

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ We saw earlier that according to Western propaganda
- ▶ the theology of al Ghazali led to the downfall of science in Islam

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Key premises of science denied in Islam

- ▶ Specifically, according to Hoodbhoy, preachers of HPS, etc.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Key premises of science denied in Islam

- ▶ Specifically, according to Hoodbhoy, preachers of HPS, etc.
- ▶ **Islam denies key premises needed for science**

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Key premises of science denied in Islam

- ▶ Specifically, according to Hoodbhoy, preachers of HPS, etc.
- ▶ Islam denies key premises needed for science
- ▶ belief in causality

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Key premises of science denied in Islam

- ▶ Specifically, according to Hoodbhoy, preachers of HPS, etc.
- ▶ Islam denies key premises needed for science
- ▶ belief in causality
- ▶ and “Laws of Nature”

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Key premises of science denied in Islam

- ▶ Specifically, according to Hoodbhoy, preachers of HPS, etc.
- ▶ Islam denies key premises needed for science
- ▶ belief in causality
- ▶ and “Laws of Nature”
- ▶ The blame for this is put on al Ghazali.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

The primary theological dispute

- ▶ A key theological dispute between Islam and Christianity

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

The primary theological dispute

- ▶ A key theological dispute between Islam and Christianity
- ▶ is whether God sleeps.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

The primary theological dispute

- ▶ A key theological dispute between Islam and Christianity
- ▶ is whether God sleeps.
- ▶ According to the Koran (2:255) Allah does not feel fatigue. (He upholds the heaven and earth, so if he tires the cosmos will be shattered.)

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The primary theological dispute

- ▶ A key theological dispute between Islam and Christianity
- ▶ is whether God sleeps.
- ▶ According to the Koran (2:255) Allah does not feel fatigue. (He upholds the heaven and earth, so if he tires the cosmos will be shattered.)
- ▶ According to the Bible (Genesis), after creation of the world, God rested on the 7th day.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ It can also be seen as a fundamental dispute over creation.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ It can also be seen as a fundamental dispute over creation.
- ▶ The Bible describes one time creation.

- ▶ It can also be seen as a fundamental dispute over creation.
- ▶ The Bible describes one time creation.
- ▶ Al Ghazali thought that Allah continually creates the world afresh.

- ▶ It can also be seen as a fundamental dispute over creation.
- ▶ The Bible describes one time creation.
- ▶ Al Ghazali thought that Allah continually creates the world afresh.
- ▶ In Western theology, this is called the debate on providential intervention.

- ▶ It can also be seen as a fundamental dispute over creation.
- ▶ The Bible describes one time creation.
- ▶ Al Ghazali thought that Allah continually creates the world afresh.
- ▶ In Western theology, this is called the debate on providential intervention.
- ▶ Can God intervene in the affairs of the world (e.g. in response to prayers)?

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The philosophers in Islam

and causality

- ▶ Muslim philosophers (Ibn Sina, al Razi et al.) were hakims

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The philosophers in Islam

and causality

- ▶ Muslim philosophers (Ibn Sina, al Razi et al.) were hakims
- ▶ meaning wise men and healers.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The philosophers in Islam

and causality

- ▶ Muslim philosophers (Ibn Sina, al Razi et al.) were hakims
- ▶ meaning wise men and healers.
- ▶ To cure an ailment one needs to know its cause.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The philosophers in Islam

and causality

- ▶ Muslim philosophers (Ibn Sina, al Razi et al.) were hakims
- ▶ meaning wise men and healers.
- ▶ To cure an ailment one needs to know its cause.
- ▶ Hence, they subscribed to the belief in causality.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Meaning of causality

- ▶ The word “causality” means many things

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Meaning of causality

- ▶ The word “causality” means many things
- ▶ often diametrically opposite to each other.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Meaning of causality

- ▶ The word “causality” means many things
- ▶ often diametrically opposite to each other.
- ▶ One meaning is “mechanical causality” in the sense of physics:

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Meaning of causality

- ▶ The word “causality” means many things
- ▶ often diametrically opposite to each other.
- ▶ One meaning is “mechanical causality” in the sense of physics:
- ▶ the present state of the world is an effect of its past and cause of its future.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ This gives rise to the idea of a “chain of causes”

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ This gives rise to the idea of a “chain of causes”
- ▶ The present state of the world is caused by the past

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ This gives rise to the idea of a “chain of causes”
- ▶ The present state of the world is caused by the past
- ▶ and the past is caused by its past and so on

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ This gives rise to the idea of a “chain of causes”
- ▶ The present state of the world is caused by the past
- ▶ and the past is caused by its past and so on
- ▶ leading back to a single moment of creation.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

on causality

- ▶ But if everything has a (mechanical) cause

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Al Ghazali

on causality

- ▶ But if everything has a (mechanical) cause
- ▶ there is room for creativity, so

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Al Ghazali

on causality

- ▶ But if everything has a (mechanical) cause
- ▶ there is room for creativity, so
- ▶ there is nothing for Allah to do.
- ▶ Hence, al Ghazali denied causality (in the above mechanical sense)

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Tahafut al Falasifa

- ▶ Al Ghazali said Allah creates smoke **with** fire

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Tahafut al Falasifa

- ▶ Al Ghazali said Allah creates smoke **with** fire
- ▶ as a matter of **habit**

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Tahafut al Falasifa

- ▶ Al Ghazali said Allah creates smoke **with** fire
- ▶ as a matter of **habit**
- ▶ He is not compelled to do so.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Tahafut al Falasifa

- ▶ Al Ghazali said Allah creates smoke **with** fire
- ▶ as a matter of **habit**
- ▶ He is not compelled to do so.
- ▶ If he wanted, he could create fire without smoke and smoke without fire.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Al Ghazali

Tahafut al Falasifa

- ▶ Al Ghazali said Allah creates smoke **with** fire
- ▶ as a matter of **habit**
- ▶ He is not compelled to do so.
- ▶ If he wanted, he could create fire without smoke and smoke without fire.
- ▶ Observation does not prove the contrary.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Al Ghazali

Tahafut al Falasifa

- ▶ Al Ghazali said Allah creates smoke **with** fire
- ▶ as a matter of **habit**
- ▶ He is not compelled to do so.
- ▶ If he wanted, he could create fire without smoke and smoke without fire.
- ▶ Observation does not prove the contrary.
- ▶ (In Western philosophy, this last is known as “Hume’s” unanswerable objection.)

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Habits, not laws

- ▶ That is, al Ghazali believed in

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Habits, not laws

- ▶ That is, al Ghazali believed in
- ▶ habits not “laws”

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Habits, not laws

- ▶ That is, al Ghazali believed in
- ▶ habits not “laws”
- ▶ (habits can be broken, laws cannot be)

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Habits, not laws

- ▶ That is, al Ghazali believed in
- ▶ habits not “laws”
- ▶ (habits can be broken, laws cannot be)
- ▶ creativity (of Allah) not causal necessity.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Al Ghazali

Habits, not laws

- ▶ That is, al Ghazali believed in
- ▶ habits not “laws”
- ▶ (habits can be broken, laws cannot be)
- ▶ creativity (of Allah) not causal necessity.
- ▶ To better understand al Ghazali let us also look at the anti-thesis in post-Crusade church theology.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Crusades

General background

- ▶ Crusades aimed to convert Muslims by force, like Europeans.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Crusades

General background

- ▶ Crusades aimed to convert Muslims by force, like Europeans.
- ▶ All Crusades after the first were military failures.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Crusades

General background

- ▶ Crusades aimed to convert Muslims by force, like Europeans.
- ▶ All Crusades after the first were military failures.
- ▶ Muslims did not accept the Christian scriptures.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Crusades

General background

- ▶ Crusades aimed to convert Muslims by force, like Europeans.
- ▶ All Crusades after the first were military failures.
- ▶ Muslims did not accept the Christian scriptures.
- ▶ Hence, the church turned to “persuasion”.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Christian rational theology

and Islamic rational theology

- ▶ To be more persuasive to Muslims,

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Christian rational theology

and Islamic rational theology

- ▶ To be more persuasive to Muslims,
- ▶ the church adapted Islamic rational theology (aql-i-kalam)

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Christian rational theology

and Islamic rational theology

- ▶ To be more persuasive to Muslims,
- ▶ the church adapted Islamic rational theology (aql-i-kalam)
- ▶ to Christian rational theology (of Aquinas and schoolmen).

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Christian rational theology

and Islamic rational theology

- ▶ To be more persuasive to Muslims,
- ▶ the church adapted Islamic rational theology (aql-i-kalam)
- ▶ to Christian rational theology (of Aquinas and schoolmen).
- ▶ Same dispute arose in Christian theology between “chain of causes” and divine intervention.

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Thomas Aquinas

and laws of nature

- ▶ Aquinas studied Al Ghazali but sided with his opponent Ibn Rushd (Averroes).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Thomas Aquinas

and laws of nature

- ▶ Aquinas studied Al Ghazali but sided with his opponent Ibn Rushd (Averroes).
- ▶ In *Summa Theologica*, 1st part of 2nd part, 91,1, he declared that God runs the world with eternal laws

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Thomas Aquinas

and laws of nature

- ▶ Aquinas studied Al Ghazali but sided with his opponent Ibn Rushd (Averroes).
- ▶ In *Summa Theologica*, 1st part of 2nd part, 91,1, he declared that God runs the world with eternal laws
- ▶ "the very Idea of the government of things in God the Ruler of the universe, has the nature of a law. . . this kind of law must be called eternal".

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The Dunces

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

- ▶ The opposite viewpoint (belief in divine intervention)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The Dunces

- ▶ The opposite viewpoint (belief in divine intervention)
- ▶ was championed by John Duns,

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The Dunces

- ▶ The opposite viewpoint (belief in divine intervention)
- ▶ was championed by John Duns,
- ▶ whose followers were labelled dunsmen or dunces,

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

The Dunces

- ▶ The opposite viewpoint (belief in divine intervention)
- ▶ was championed by John Duns,
- ▶ whose followers were labelled dunsmen or dunces,
- ▶ "proof by ridicule" (a stock Western technique).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Church theology of “laws of nature”

Summary

- ▶ Belief in “laws of nature” is a key part of church dogma

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Church theology of “laws of nature”

Summary

- ▶ Belief in “laws of nature” is a key part of church dogma
- ▶ since the Crusades.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Church theology of “laws of nature”

Summary

- ▶ Belief in “laws of nature” is a key part of church dogma
- ▶ since the Crusades.
- ▶ This church dogma antedates the same belief in science.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Theology of “laws of nature”

More details

- ▶ Difference between church theology and Islamic theology due to belief in

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Theology of “laws of nature”

More details

- ▶ Difference between church theology and Islamic theology due to belief in
- ▶ one-time creation vs continuous creation

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Theology of “laws of nature”

More details

- ▶ Difference between church theology and Islamic theology due to belief in
- ▶ one-time creation vs continuous creation
- ▶ transcendence vs immanence.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Theology of “laws of nature”

More details

- ▶ Difference between church theology and Islamic theology due to belief in
- ▶ one-time creation vs continuous creation
- ▶ transcendence vs immanence.
- ▶ For more details of the underlying politics of this church dogma

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Theology of “laws of nature”

More details

- ▶ Difference between church theology and Islamic theology due to belief in
- ▶ one-time creation vs continuous creation
- ▶ transcendence vs immanence.
- ▶ For more details of the underlying politics of this church dogma
- ▶ see my article “Benedict’s Maledicts” (just google).

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ The first lesson in science today is about Newton's laws.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ The first lesson in science today is about Newton's laws.
- ▶ These are formulated using ordinary differential equations (ODEs).

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ The first lesson in science today is about Newton's laws.
- ▶ These are formulated using ordinary differential equations (ODEs).
- ▶ The solution of an ODE is determined by initial data.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ The first lesson in science today is about Newton's laws.
- ▶ These are formulated using ordinary differential equations (ODEs).
- ▶ The solution of an ODE is determined by initial data.
- ▶ Thus, ODEs capture the "chain of causes" idea.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Newton was influenced by the prevailing belief of church rational theology

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Newton was influenced by the prevailing belief of church rational theology
- ▶ that God rules the world with “laws of nature”

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ Newton was influenced by the prevailing belief of church rational theology
- ▶ that God rules the world with “laws of nature”
- ▶ and does not intervene directly.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Newton's laws

- ▶ Newton (in his notes) cancelled “hypothesi” and wrote “lex” (law)

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Newton's laws

- ▶ Newton (in his notes) cancelled “hypothesi” and wrote “lex” (law)
- ▶ since he thought that God had **revealed** his laws to him

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Newton's laws

- ▶ Newton (in his notes) cancelled “hypothesi” and wrote “lex” (law)
- ▶ since he thought that God had **revealed** his laws to him
- ▶ since he was a prophet,

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Newton's laws

- ▶ Newton (in his notes) cancelled “hypothesi” and wrote “lex” (law)
- ▶ since he thought that God had **revealed** his laws to him
- ▶ since he was a prophet,
- ▶ for he was born on 25 December

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
http:
//ckraju.net

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Newton's laws

- ▶ Newton (in his notes) cancelled “hypothesi” and wrote “lex” (law)
- ▶ since he thought that God had **revealed** his laws to him
- ▶ since he was a prophet,
- ▶ for he was born on 25 December
- ▶ (according to a wrong calendar)!

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Newton's laws

contd

- ▶ Newton's "laws" have failed.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Newton's laws

contd

- ▶ Newton's "laws" have failed.
- ▶ As we will see, they failed because of Newton's **conceptual confusion** about time

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Newton's laws

contd

- ▶ Newton's "laws" have failed.
- ▶ As we will see, they failed because of Newton's **conceptual confusion** about time
- ▶ arising from his misunderstanding of the calculus.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Newton's laws

contd

- ▶ Newton's "laws" have failed.
- ▶ As we will see, they failed because of Newton's **conceptual confusion** about time
- ▶ arising from his misunderstanding of the calculus.
- ▶ He believed like Aquinas that "laws of nature" must be eternal

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Newton's laws

contd

- ▶ Newton's "laws" have failed.
- ▶ As we will see, they failed because of Newton's **conceptual confusion** about time
- ▶ arising from his misunderstanding of the calculus.
- ▶ He believed like Aquinas that "laws of nature" must be eternal
- ▶ hence must use "perfect" mathematics (calculus was then suspect).

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Did Newton's laws fail because he had the wrong laws which must be corrected?

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Did Newton's laws fail because he had the wrong laws which must be corrected?
- ▶ Or, did they fail because there are regularities, but no strict laws of nature?

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Did Newton's laws fail because he had the wrong laws which must be corrected?
- ▶ Or, did they fail because there are regularities, but no strict laws of nature?
- ▶ How do we know that there are any laws of nature?

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Did Newton's laws fail because he had the wrong laws which must be corrected?
- ▶ Or, did they fail because there are regularities, but no strict laws of nature?
- ▶ How do we know that there are any laws of nature?
- ▶ To decide scientifically, we must examine our experience.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Belief in “laws of nature” contrary to experience

- ▶ We plan our everyday lives on the belief

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Belief in “laws of nature” contrary to experience

- ▶ We plan our everyday lives on the belief
- ▶ that (a tiny part of) the future is decided by **our** actions.

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Belief in “laws of nature” contrary to experience

- ▶ We plan our everyday lives on the belief
- ▶ that (a tiny part of) the future is decided by **our** actions.
- ▶ That would not be possible if future were entirely decided by laws (like Newton’s laws).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Belief in “laws of nature” contrary to experience

- ▶ We plan our everyday lives on the belief
- ▶ that (a tiny part of) the future is decided by **our** actions.
- ▶ That would not be possible if future were entirely decided by laws (like Newton's laws).
- ▶ Thus, belief in “laws of nature” is immediately refuted by common experience.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Belief in “laws of nature” unscientific

since not refutable

- ▶ Anyone who denies the preceding argument **must** explain how to **refute** the belief in “laws of nature”.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Belief in “laws of nature” unscientific

since not refutable

- ▶ Anyone who denies the preceding argument **must** explain how to **refute** the belief in “laws of nature”.
- ▶ In fact, such denial makes the belief in eternal “laws of nature” **not refutable**,

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Belief in “laws of nature” unscientific

since not refutable

- ▶ Anyone who denies the preceding argument **must** explain how to **refute** the belief in “laws of nature”.
- ▶ In fact, such denial makes the belief in eternal “laws of nature” **not refutable**,
- ▶ hence **unscientific** on Popper’s criterion of refutability (falsifiability).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Belief in “laws of nature” unscientific

since not refutable

- ▶ Anyone who denies the preceding argument **must** explain how to **refute** the belief in “laws of nature”.
- ▶ In fact, such denial makes the belief in eternal “laws of nature” **not refutable**,
- ▶ hence **unscientific** on Popper’s criterion of refutability (falsifiability).
- ▶ Belief in regularities (“habits”), models, OK.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Laws of nature

summary

- ▶ The belief in laws of nature first arose as a church dogma.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi

<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Laws of nature

summary

- ▶ The belief in laws of nature first arose as a church dogma.
- ▶ This church dogma crept into science through Newton's laws.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Laws of nature

summary

- ▶ The belief in laws of nature first arose as a church dogma.
- ▶ This church dogma crept into science through Newton's laws.
- ▶ Newton's belief that he had found the laws of nature failed.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Laws of nature

summary

- ▶ The belief in laws of nature first arose as a church dogma.
- ▶ This church dogma crept into science through Newton's laws.
- ▶ Newton's belief that he had found the laws of nature failed.
- ▶ The belief in laws of nature is contrary to everyday experience and is hence a superstition.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Laws of nature

summary

- ▶ The belief in laws of nature first arose as a church dogma.
- ▶ This church dogma crept into science through Newton's laws.
- ▶ Newton's belief that he had found the laws of nature failed.
- ▶ The belief in laws of nature is contrary to everyday experience and is hence a superstition.
- ▶ This shows how church dogma creeps into science and then the authority of science is used to attack all non-Christian beliefs.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Stephen Hawking's creationism

Religious propaganda through "advanced" science

- ▶ Another example is Stephen Hawking's creationism using the mathematical concept of singularity.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Stephen Hawking's creationism

Religious propaganda through “advanced” science

- ▶ Another example is Stephen Hawking's creationism using the mathematical concept of singularity.
- ▶ A singularity (not “Big bang”) is a true moment of creation.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Stephen Hawking's creationism

Religious propaganda through “advanced” science

- ▶ Another example is Stephen Hawking's creationism using the mathematical concept of singularity.
- ▶ A singularity (not “Big bang”) is a true moment of creation.
- ▶ What exactly is a singularity?

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Hawking: characterization of singularity

"the moment of creation where all the laws of physics break down"

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Hawking: characterization of singularity

"the moment of creation where all the laws of physics break down"

- ▶ This agrees with church dogma.

Hawking: characterization of singularity

"the moment of creation where all the laws of physics break down"

- ▶ This agrees with church dogma.
- ▶ Concordance with Augustine's theology explained for the layperson in my book *The Eleven Pictures of Time*, (Sage, 2003)

Hawking: characterization of singularity

"the moment of creation where all the laws of physics break down"

- ▶ This agrees with church dogma.
- ▶ Concordance with Augustine's theology explained for the layperson in my book *The Eleven Pictures of Time*, (Sage, 2003)
- ▶ Consequence?

Hawking: characterization of singularity

"the moment of creation where all the laws of physics break down"

- ▶ This agrees with church dogma.
- ▶ Concordance with Augustine's theology explained for the layperson in my book *The Eleven Pictures of Time*, (Sage, 2003)
- ▶ Consequence?

Tipler

Hawking singularities make "Judaeo-Christian theology a part of physics."

Mathematics and eternal truth

- ▶ Let us now turn to the matter of “eternal” in “eternal laws of nature”. The focus is now of **eternal**.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

**Mathematics and
eternal truth**

Mathematics and eternal truth

- ▶ Let us now turn to the matter of “eternal” in “eternal laws of nature”. The focus is now of **eternal**.
- ▶ It was believed in the West that “the laws of nature” are written in the language of mathematics

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

**Mathematics and
eternal truth**

Mathematics and eternal truth

- ▶ Let us now turn to the matter of “eternal” in “eternal laws of nature”. The focus is now of **eternal**.
- ▶ It was believed in the West that “the laws of nature” are written in the language of mathematics
- ▶ just because the West believed that mathematics contains eternal truths

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Mathematics and eternal truth

- ▶ Let us now turn to the matter of “eternal” in “eternal laws of nature”. The focus is now of **eternal**.
- ▶ It was believed in the West that “the laws of nature” are written in the language of mathematics
- ▶ just because the West believed that mathematics contains eternal truths
- ▶ and is “perfect” (without errors).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ Belief that mathematics contains eternal truths is NOT a universal belief.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Belief that mathematics contains eternal truths is NOT a universal belief.
- ▶ Indian śulba sūtra explicitly speaks of mathematical knowledge (value of π) as **non-eternal** (*sa anitya*).

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Belief that mathematics contains eternal truths is NOT a universal belief.
- ▶ Indian śulba sūtra explicitly speaks of mathematical knowledge (value of π) as **non-eternal** (*sa anitya*).
- ▶ and **imperfect** (*sa viśeṣa* = with error).

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ This belief (in math as eternal truth) began life as a religious belief.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ This belief (in math as eternal truth) began life as a religious belief.
- ▶ The very word mathematics derives from mathesis

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ This belief (in math as eternal truth) began life as a religious belief.
- ▶ The very word mathematics derives from mathesis
- ▶ which means arousing the soul.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ This belief (in math as eternal truth) began life as a religious belief.
- ▶ The very word mathematics derives from mathesis
- ▶ which means arousing the soul.
- ▶ to make it remember its past lives.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Mathesis

- ▶ The West related math to religious belief, right since Plato

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Mathesis

- ▶ The West related math to religious belief, right since Plato
- ▶ (who borrowed it from black Egypt).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Mathesis

- ▶ The West related math to religious belief, right since Plato
- ▶ (who borrowed it from black Egypt).
- ▶ "Mathematics" derives from "mathesis" which means learning.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Mathesis

- ▶ The West related math to religious belief, right since Plato
- ▶ (who borrowed it from black Egypt).
- ▶ "Mathematics" derives from "mathesis" which means learning.
- ▶ According to Plato, learning was achieved by arousing the soul to make it recollect its past lives.

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Socrates (in Plato's *Meno*) claims that learning takes place by arousing the soul:

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Socrates (in Plato's *Meno*) claims that learning takes place by arousing the soul:
- ▶ “all learning is recollection”

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ Socrates (in Plato's *Meno*) claims that learning takes place by arousing the soul:
- ▶ “all learning is recollection”
- ▶ He demonstrates this by eliciting a slave boy's innate knowledge of mathematics.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ Socrates (in Plato's *Meno*) claims that learning takes place by arousing the soul:
- ▶ “all learning is recollection”
- ▶ He demonstrates this by eliciting a slave boy's innate knowledge of mathematics.
- ▶ Socrates then claimed he had proved the existence of the soul.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ Proclus explains that **mathematics contains eternal truths**

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Proclus explains that **mathematics contains eternal truths**
- ▶ hence is best suited to arouse the eternal soul

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Proclus explains that **mathematics contains eternal truths**
- ▶ hence is best suited to arouse the eternal soul
- ▶ on the principle of sympathetic magic

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Proclus explains that **mathematics contains eternal truths**
- ▶ hence is best suited to arouse the eternal soul
- ▶ on the principle of sympathetic magic
- ▶ that “like arouses like”.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

**Mathematics and
eternal truth**

Reinterpretation of math

- ▶ That “pagan” (and early Christian) notion of soul cursed by the post-Nicene church in the 6th c.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

**Mathematics and
eternal truth**

Reinterpretation of math

- ▶ That “pagan” (and early Christian) notion of soul cursed by the post-Nicene church in the 6th c.
- ▶ when mathematics and philosophy banned from the Roman empire.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

**Mathematics and
eternal truth**

Reinterpretation of math

- ▶ That “pagan” (and early Christian) notion of soul cursed by the post-Nicene church in the 6th c.
- ▶ when mathematics and philosophy banned from the Roman empire.
- ▶ Accepted back during the Crusades to persuade Muslims who accepted reason (Islamic rational theology or *aql-i-kalam*).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Reinterpretation of math

- ▶ That “pagan” (and early Christian) notion of soul cursed by the post-Nicene church in the 6th c.
- ▶ when mathematics and philosophy banned from the Roman empire.
- ▶ Accepted back during the Crusades to persuade Muslims who accepted reason (Islamic rational theology or *aql-i-kalam*).
- ▶ At that time church theology was again changed (Christian rational theology), and math was reinterpreted as a doctrine of persuasive metaphysical proof to fit the church agenda of persuasion.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Reinterpretation of math

- ▶ That “pagan” (and early Christian) notion of soul cursed by the post-Nicene church in the 6th c.
- ▶ when mathematics and philosophy banned from the Roman empire.
- ▶ Accepted back during the Crusades to persuade Muslims who accepted reason (Islamic rational theology or *aql-i-kalam*).
- ▶ At that time church theology was again changed (Christian rational theology), and math was reinterpreted as a doctrine of persuasive metaphysical proof to fit the church agenda of persuasion.
- ▶ (That was when “Euclid” was invented to claim ownership of reason.)

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Eternal truths to perfection

- ▶ The doctrine that math is eternal truth should have lost relevance after the changed notion of soul

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Eternal truths to perfection

- ▶ The doctrine that math is eternal truth should have lost relevance after the changed notion of soul
- ▶ but it persisted in post-Crusade theology on the belief that logic binds God (“God cannot create an illogical world”), hence mathematical/logical truths are eternal truths.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Eternal truths to perfection

- ▶ The doctrine that math is eternal truth should have lost relevance after the changed notion of soul
- ▶ but it persisted in post-Crusade theology on the belief that logic binds God (“God cannot create an illogical world”), hence mathematical/logical truths are eternal truths.
- ▶ This led to the belief that mathematics is perfect and cannot neglect the smallest error (e.g. Berkeley).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Perfectly summing an infinite series

- ▶ The belief in perfection led to problems with summing the infinite series of the Indian calculus.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi

<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Perfectly summing an infinite series

- ▶ The belief in perfection led to problems with summing the infinite series of the Indian calculus.
- ▶ A finite approximation (e.g. $\pi = 3.1415$) good enough for practical purposes was regarded as not mathematics, since not “perfect”.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Perfectly summing an infinite series

- ▶ The belief in perfection led to problems with summing the infinite series of the Indian calculus.
- ▶ A finite approximation (e.g. $\pi = 3.1415$) good enough for practical purposes was regarded as not mathematics, since not “perfect”.
- ▶ However, physically summing an infinite series would take an infinity of time.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Perfectly summing an infinite series

- ▶ The belief in perfection led to problems with summing the infinite series of the Indian calculus.
- ▶ A finite approximation (e.g. $\pi = 3.1415$) good enough for practical purposes was regarded as not mathematics, since not “perfect”.
- ▶ However, physically summing an infinite series would take an infinity of time.
- ▶ (Descartes' folly): “the ratios of curved and straight lines are beyond the capacity of the human mind.”

Metaphysics of math

- ▶ Hence, the West came to the conclusion that infinite series can be summed in a perfect way metaphysically.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Metaphysics of math

- ▶ Hence, the West came to the conclusion that infinite series can be summed in a perfect way metaphysically.
- ▶ **Newton's error:** To make sense of $\frac{d}{dt}$ Newton made time metaphysical (to make it “flow” evenly, whatever that means).

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Metaphysics of math

- ▶ Hence, the West came to the conclusion that infinite series can be summed in a perfect way metaphysically.
- ▶ **Newton's error:** To make sense of $\frac{d}{dt}$ Newton made time metaphysical (to make it “flow” evenly, whatever that means).
- ▶ His physics failed for that reason.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Metaphysics of math

- ▶ Hence, the West came to the conclusion that infinite series can be summed in a perfect way metaphysically.
- ▶ **Newton's error:** To make sense of $\frac{d}{dt}$ Newton made time metaphysical (to make it “flow” evenly, whatever that means).
- ▶ His physics failed for that reason.
- ▶ Today we teach formal real numbers, or the continuum, never used in any practical application.

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Metaphysics of math

- ▶ Hence, the West came to the conclusion that infinite series can be summed in a perfect way metaphysically.
- ▶ **Newton's error:** To make sense of $\frac{d}{dt}$ Newton made time metaphysical (to make it “flow” evenly, whatever that means).
- ▶ His physics failed for that reason.
- ▶ Today we teach formal real numbers, or the continuum, never used in any practical application.
- ▶ E.g. computers use floating point numbers.

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

Contrary to all non-Christian beliefs

- ▶ There are even deeper problems.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Contrary to all non-Christian beliefs

- ▶ There are even deeper problems.
- ▶ Western metaphysics of math **contrary to all Indian religions**

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Contrary to all non-Christian beliefs

- ▶ There are even deeper problems.
- ▶ Western metaphysics of math **contrary to all Indian religions**
- ▶ since it rejects empirical proof as inferior

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Contrary to all non-Christian beliefs

- ▶ There are even deeper problems.
- ▶ Western metaphysics of math **contrary to all Indian religions**
- ▶ since it rejects empirical proof as inferior
- ▶ whereas all schools of Indian thought accept empirical proof, as the first means of proof

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Contrary to all non-Christian beliefs

- ▶ There are even deeper problems.
- ▶ Western metaphysics of math **contrary to all Indian religions**
- ▶ since it rejects empirical proof as inferior
- ▶ whereas all schools of Indian thought accept empirical proof, as the first means of proof
- ▶ as does Islam.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Contrary to all non-Christian beliefs

- ▶ There are even deeper problems.
- ▶ Western metaphysics of math **contrary to all Indian religions**
- ▶ since it rejects empirical proof as inferior
- ▶ whereas all schools of Indian thought accept empirical proof, as the first means of proof
- ▶ as does Islam.
- ▶ Thus, simply by accepting formal math, you reject Islam, whether or not you understand it.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Reason not universal

- ▶ Reason based on logic.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Reason not universal

- ▶ Reason based on logic.
- ▶ Post-Crusade church theology blindly assumed that logic is universal since it binds even God

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Reason not universal

- ▶ Reason based on logic.
- ▶ Post-Crusade church theology blindly assumed that logic is universal since it binds even God
- ▶ (hence believed logical proof stronger than empirical proof)

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Reason not universal

- ▶ Reason based on logic.
- ▶ Post-Crusade church theology blindly assumed that logic is universal since it binds even God
- ▶ (hence believed logical proof stronger than empirical proof)
- ▶ However, logic not culturally unique. Buddhist logic of *catuṣkoṭi*, and Jain logic of *syādavāda* not 2-valued or even truth-functional.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Metaphysics of math

- ▶ For more details, see *Cultural Foundations of Mathematics*

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

Metaphysics of math

- ▶ For more details, see *Cultural Foundations of Mathematics*
- ▶ *Euclid and Jesus: how and why the church changed mathematics and Christianity across two religious wars*

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Metaphysics of math

- ▶ For more details, see *Cultural Foundations of Mathematics*
- ▶ *Euclid and Jesus: how and why the church changed mathematics and Christianity across two religious wars*
- ▶ My article in *The Hindu* and related supporting material posted on my blog <http://ckraju.net/blog> and

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

Metaphysics of math

- ▶ For more details, see *Cultural Foundations of Mathematics*
- ▶ *Euclid and Jesus: how and why the church changed mathematics and Christianity across two religious wars*
- ▶ My article in *The Hindu* and related supporting material posted on my blog <http://ckraju.net/blog> and
- ▶ at <http://ckraju.net/papers>.

Islam and science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
<http://ckraju.net>

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

PEARSON LONGMAN

History of Science, Philosophy and Culture
in Indian Civilization

General Editor D. P. Chattopadhyaya

Volume X Part 4

Cultural Foundations of Mathematics
The Nature of Mathematical Proof and
the Transmission of the Calculus
from India to Europe in the 16th c. CE

C. K. RAJU

PHISPC

Centre for Studies in Civilizations

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth



Euclid and Jesus



C. K. Raju


Multiversity


Citizens International

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth



- ▶ Let me conclude with a simple example.

Islam and
science.
2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Let me conclude with a simple example.
- ▶ What difference does it make to $2+2=4$?

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Let me conclude with a simple example.
- ▶ What difference does it make to $2+2=4$?
- ▶ Most people understand that empirically.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Let me conclude with a simple example.
- ▶ What difference does it make to $2+2=4$?
- ▶ Most people understand that empirically.
- ▶ Declared incorrect on Western math: empirically knowledge is “imperfect knowledge”, hence not math.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ Let me conclude with a simple example.
- ▶ What difference does it make to $2+2=4$?
- ▶ Most people understand that empirically.
- ▶ Declared incorrect on Western math: empirically knowledge is “imperfect knowledge”, hence not math.
- ▶ The term “fish” is not exactly defined.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ Let me conclude with a simple example.
- ▶ What difference does it make to $2+2=4$?
- ▶ Most people understand that empirically.
- ▶ Declared incorrect on Western math: empirically knowledge is “imperfect knowledge”, hence not math.
- ▶ The term “fish” is not exactly defined.
- ▶ So, 2 big fish and 2 small fish may “equal” 3 big fishes or 5 small fishes.

Recap

“Laws” of nature

Crusades and
“laws of nature”

Science and
“laws”

Mathematics and
eternal truth

- ▶ On Western/formal math, $2+2=4$ must be done non-empirically (and $2+2$ may equal 5, just as $1+1$ may be 0.)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ On Western/formal math, $2+2=4$ must be done non-empirically (and $2+2$ may equal 5, just as $1+1$ may be 0.)
- ▶ To define 2 non-empirically, we need something like Peano's axioms.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ On Western/formal math, $2+2=4$ must be done non-empirically (and $2+2$ may equal 5, just as $1+1$ may be 0.)
- ▶ To define 2 non-empirically, we need something like Peano's axioms.
- ▶ Those axioms bring in the metaphysics of infinity by the backdoor.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ On Western/formal math, $2+2=4$ must be done non-empirically (and $2+2$ may equal 5, just as $1+1$ may be 0.)
- ▶ To define 2 non-empirically, we need something like Peano's axioms.
- ▶ Those axioms bring in the metaphysics of infinity by the backdoor.
- ▶ The quickest way to see it is that computers can NEVER do Peano arithmetic, for computers cannot handle infinity.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ That Western metaphysics of infinity is allied to church notion of eternity.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ That Western metaphysics of infinity is allied to church notion of eternity.
- ▶ First creationist conflict was with Proclus over the notion of eternity.

- ▶ That Western metaphysics of infinity is allied to church notion of eternity.
- ▶ First creationist conflict was with Proclus over the notion of eternity.
- ▶ That metaphysics **never** needed for any practical purpose.

- ▶ That Western metaphysics of infinity is allied to church notion of eternity.
- ▶ First creationist conflict was with Proclus over the notion of eternity.
- ▶ That metaphysics **never** needed for any practical purpose.
- ▶ Why continue to use it?

- ▶ That Western metaphysics of infinity is allied to church notion of eternity.
- ▶ First creationist conflict was with Proclus over the notion of eternity.
- ▶ That metaphysics **never** needed for any practical purpose.
- ▶ Why continue to use it?
- ▶ (Because the highest truth for the colonised is to blindly imitate the West!)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Anyway, all this cannot be explained in one day.

Islam and
science.

2: Some details

C. K. Raju
Centre for
Studies in
Civilizations
New Delhi
[http:
//ckraju.net](http://ckraju.net)

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

**Mathematics and
eternal truth**

- ▶ Anyway, all this cannot be explained in one day.
- ▶ Especially if you don't already have a background in math and science.

- ▶ Anyway, all this cannot be explained in one day.
- ▶ Especially if you don't already have a background in math and science.
- ▶ If it was so easy, so many people wouldn't have been fooled for two centuries.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth

- ▶ Anyway, all this cannot be explained in one day.
- ▶ Especially if you don't already have a background in math and science.
- ▶ If it was so easy, so many people wouldn't have been fooled for two centuries.
- ▶ The Western system ensures you have no time to think, not even time to listen.

- ▶ Anyway, all this cannot be explained in one day.
- ▶ Especially if you don't already have a background in math and science.
- ▶ If it was so easy, so many people wouldn't have been fooled for two centuries.
- ▶ The Western system ensures you have no time to think, not even time to listen.
- ▶ However, let us proceed to outline the alternatives.

Recap

"Laws" of nature

Crusades and
"laws of nature"

Science and
"laws"

Mathematics and
eternal truth