

# WorldCiv

February 5, 2018

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# **1 History 1310 - Science and Technology in World Civilization**

Date: <2019-01-18 Thu> Lecturer: Driggers

## **1.1 Questions? :email: edriggers@tnitech.edu Office Hours:**

T-Th: 4:30-6 What are office hours for?

- Problems reading and retaining information from lecture or textbook.
- Questions about grades, performance, participation, attendance, Etc
- Go over a test or paper
- Recommendations about improvement

## **2 Lecture 1 - What is the meaning of Science?**

- Where is the use of science?
- Are there ways that science can be improperly?
- Is science value free?
- How do non-epistemic

values figure into scientific investigations?

- What are the role of
- contextual values in science?
- Whose values will impact scientific work?

### **2.1 What do I mean by Values???**

- Epistemic-Traditionally means values in the internal processes of science? like measurement, quantification, ?Testable?
- Non-Epistemic-Means those not in the internal process, often effecting the conceptualization of questions and interpretation of ?data,? things like experiences, psychological worries, political values, ideas about race, gender &c.
- Objectivity is a changing standard throughout history!

## **2.2 Traditional Conception of Scientific Investigation**

- Scientists:
  - Observe phenomena, Measure it, and Understand and make products; control phenomena; offer recommendations
  - Who are scientists?
  - What is deemed phenomena?
  - What counts as proper measurement?
  - Why are conclusions drawn, verified, and communicated to professionals and the public(s)?
  - Is science objective?
    - What questions are we as society comfortable with asking?
    - What is the role of ethics in scientific investigations?

### **2.2.1 Nazi Medical Experimentation and the body**

- Examples include, but not limited to:
  - High Altitude experiments
  - Drug experiments
  - Freezing water

### **2.2.2 Drug Testing and Children**

- Case of anti-depressants and adolescents
- Re-branding of drugs for profit \* Arthritis ##

### **2.2.3 Conception and understanding of life**

- The "Sperm and Egg" Model Traditionally the woman's reproductive system was considered pretty passive, now we know that isn't the case. The woman's body is responsible for "weeding out" the weak of the Man's sperm

#### **2.2.4 Interventions in the environment**

+Iron sulfave (Fertilizer) dumping into ocean

### **3 Lecture 2 - Babylon and beyond**

:Lecturer: Driggers :DATE: <2018-01-23 Tue>

#### **3.1 Orientation:**

- Survey of history if science, technology, medicine, etc. throughout greater Mesopotamian history
- General Details, geography, Etc.

#### **3.2 TODO Theroretical Point: *Verify quotes...***

- where SHOULD we start this class? Most professors start much later, with the greeks; look at history through their eyes
- The power of narrative
- Keep Reading!
- Problem with Near Eastern Studies - Far East Studies??? To have a proper *Near east study* you have to be *near east*, most aren't.

#### **3.3 Geographic location:**

- Framed in Today's Geopolitical Landscape

#### **3.4 Home to diverse groups of people**

- Sumerians
- Akkadians
- Persians
- Babylonians
- **Some of the oldest societies**



Figure 1: Fertile Crescent of early agriculture

### 3.5 Hummurabi and his Code

- If any one finds runaway male or female slaves in the open country and bring them to their masters, the master of the slaves shall pay him two shekels of silver.
- If any one is committing a robbery and is caught, then he shall be put to death.
- If a tavern-keeper (feminine) does not accept corn according to gross weight in payment of a drink, but takes money, and the price of the drink is less than that of the corn, she shall be convicted and thrown into the water.
- If a son strike his father, his hands be hewn off.
- If a man knock out the teeth of his equal, his teeth shall be knocked out.
- If a barber, without the knowledge of his master, but the sign of a slave on a slave not to be sold, the hands of the barber shall be cut off.



Figure 2: More modern representation of area.

- If a slave says to his master: "You are not my master" - if they convict him his master shall cut off his ear.

### 3.6 Timeline

- Goes back to 3500 BC
- Civilization arose around present day Iraq
- Communicated through a written language: cuneiform

### 3.7 Literature: *The Epic of Gilgamesh*

- Written around 2100 BC
- About 12 books, or about 5 epic poems



Figure 3: Cuneiform tablet writing

- He saw the Secret, discovered the Hidden, he brought information of (the time) before the Flood. He went on a distance journey, pushing himself to exhaustion, but then was brought peace (1.5-8)

### 3.8 Technological Achievement

- Metalworking (Bronze, Copper, Gold, and eventually iron)
- Glass making
- Textile Weaving
- Water Storage/control

#### 3.8.1 Walls of Babylon *Part of Seven Wonder*

Provides great security, allows for focus on other aspects of life.



Figure 4: Wall of Babylon

### **3.8.2 TODO Archimedes Screw: Verify location of possible garden's location with Driggers.**

Some scholars believe that this was how the supposed *hanging gardens* were irrigated.

### **3.8.3 Assyrian Pottery**

Allows travel to further distances away from immediate water access.

### **3.8.4 Astronomy - Wrote down observations**

This allows us to *track* backwards in time and *line up* our time line, and understandings with theirs.

### **3.8.5 Mathematics**

Mostly derived from needs of scribes, and clerks, doing tax calculations, record keeping was also important.

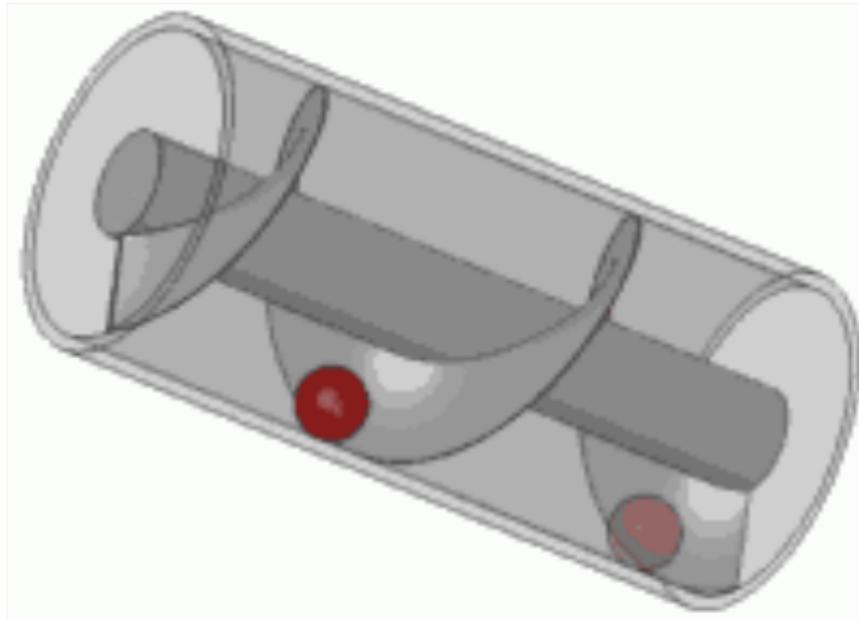


Figure 5: Archimedes Screw

### 3.8.6 Medicine

Scholars of early medicine started taking *notes* about what methods worked, and those that didn't



Figure 6: Hanging Gardens



Figure 7: Possible location of gardens

1	↷	11	◁↷	21	◁◁↷	31	◁◁◁↷	41	↶↷	51	↶↷
2	↷↷	12	◁↷↷	22	◁◁↷↷	32	◁◁◁↷↷	42	↶↷↷	52	↶↷↷
3	↷↷↷	13	◁↷↷↷	23	◁◁↷↷↷	33	◁◁◁↷↷↷	43	↶↷↷↷	53	↶↷↷↷
4	↷↷↷↷	14	◁↷↷↷↷	24	◁◁↷↷↷↷	34	◁◁◁↷↷↷↷	44	↶↷↷↷↷	54	↶↷↷↷↷
5	↷↷↷↷↷	15	◁↷↷↷↷↷	25	◁◁↷↷↷↷↷	35	◁◁◁↷↷↷↷↷	45	↶↷↷↷↷↷	55	↶↷↷↷↷↷
6	↷↷↷↷↷↷	16	◁↷↷↷↷↷↷	26	◁◁↷↷↷↷↷↷	36	◁◁◁↷↷↷↷↷↷	46	↶↷↷↷↷↷↷	56	↶↷↷↷↷↷↷
7	↷↷↷↷↷↷↷	17	◁↷↷↷↷↷↷↷	27	◁◁↷↷↷↷↷↷↷	37	◁◁◁↷↷↷↷↷↷↷	47	↶↷↷↷↷↷↷↷	57	↶↷↷↷↷↷↷↷
8	↷↷↷↷↷↷↷↷	18	◁↷↷↷↷↷↷↷↷	28	◁◁↷↷↷↷↷↷↷↷	38	◁◁◁↷↷↷↷↷↷↷↷	48	↶↷↷↷↷↷↷↷↷	58	↶↷↷↷↷↷↷↷↷
9	↷↷↷↷↷↷↷↷↷	19	◁↷↷↷↷↷↷↷↷↷	29	◁◁↷↷↷↷↷↷↷↷↷	39	◁◁◁↷↷↷↷↷↷↷↷↷	49	↶↷↷↷↷↷↷↷↷↷	59	↶↷↷↷↷↷↷↷↷↷
10	↶	20	↶↶	30	↶↶↶	40	↶↶↶↶	50	↶↶↶↶↶		

Figure 8: Cuneiform Mathematics symbols.

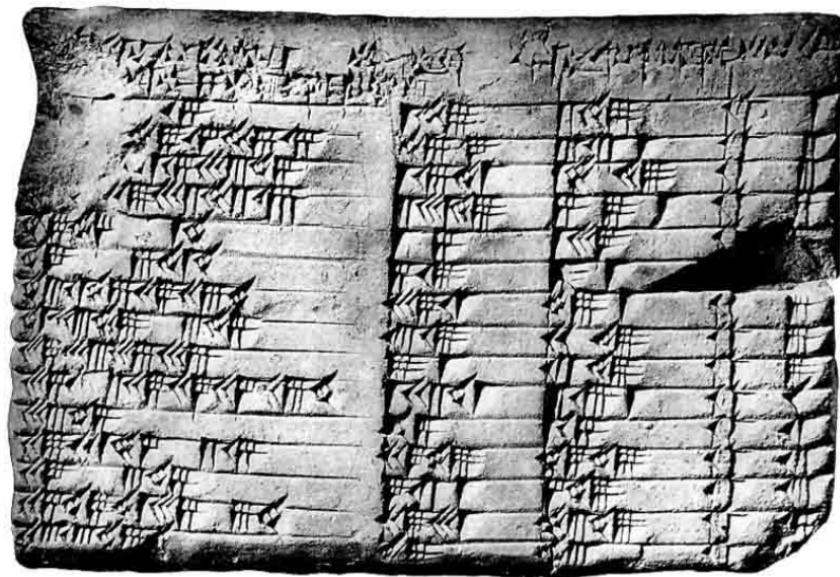
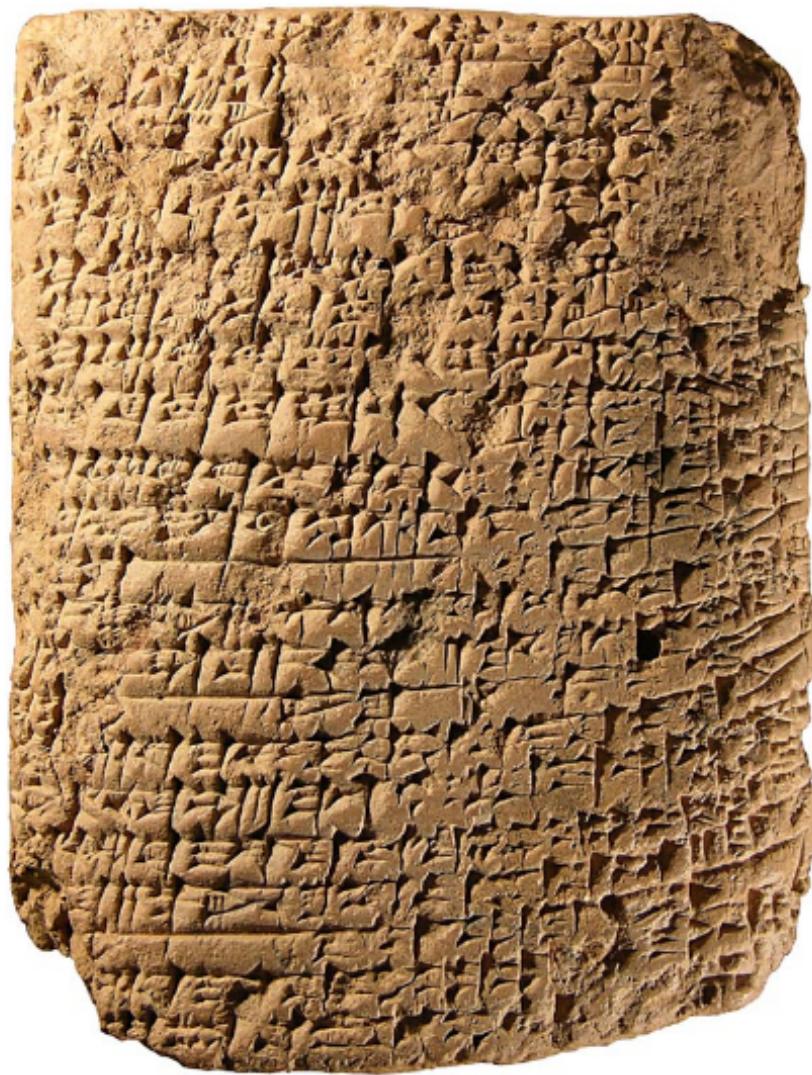


Figure 9: Accounting Records



MS 2670

Diagnoses of medical conditions with prognoses of the outcome.  
Babylonia, ca. 1900-1700 BC

Figure 10: Medical Records