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Midterm - INTD262

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1 Unit 3

1. Recall the fascinating story about psychological research, in which the author shares that 67 percent of psychologists who were asked to share there data did not share it. (a) Were the rates of error higher or lower in the studies for which the authors did not share data? (b) In whose favor were the errors?

   Studies show that the data was not shared and that of which wasn't, was found to have higher rates of error. The errors in the studies where data was not shared tended to favor the creators idea, the authors.

2. "Recent research in behavioral economics has shown that groups are often better than individuals at finding errors in reasoning." (a) Why do you think this is the case? (b) Can you give an example of the wisdom of crowds thus far in our study of Latin American science?

   I think this is the case because by allowing yourself to convers in groups you are fostering ideas in different perspectives, you can healthily argue with other people by challenging their ideas and prevent biases from occuring. Latin American Science + Technology is an example of a group effort and round about platform that introduces innovative ideas.

3. Recall the story of cold fusion. (a) List three facets of the peer review process that went wrong in this episode. (b) How long, from start to finish, did it take for the scientific community to sort out the errors in the cold fusion research?

   Three facets would include the lack of verification, the early publication and the failure to replicate the results. It took about 10 years for the science community to sort out the errors in cold fusion research

4. Note that we encountered several examples of viceregal engineers becoming Latin American leaders. (a) What are some examples of professions that involved modern technical skill in Río de la Plata and Perú? (b) What is the primary profession of modern US leaders, for example, elected to The United States Congress?

   Some examples would be military engineers, architects + builders, + miners The primary profession of modern U.S leaders, would be lawyers, businessmen, and politicens.

5. José Mariano Mociño and others were ordered by the Mexican viceroy on an expedition to Nootka Island. What was the purpose of the expedition? (Take INTD255 to learn more!)

   The three main purposes of expedition would be to [redacted] explore/ collect data, view all the potential, natural resources, and to strengthen spanish claims.

6. In Perú, we must take note of the work of Hipólito Unánue. (a) What are some of his other scientific contributions? (b) In Nueva Granada, we must take note of the work of José Celestino Mutis. What are some of his main contributions?

   Some other scientific contributions include medicine, public health, the study of plants, philosophy and education. Some main contributions would be Mutis botanic study that help develop the foundation, the drains and influence of it.

7. (a) When did Latin American wars of independence begin, approximately? (b) Give some examples of scientists and engineers who fought and died for their countries.

   They began in the early 1800s. Juan Castelli, Andrés Bello, and Bernardo O'Higgins are all examples of people who have died and fought for their countries.

2 Unit 4

1. How long after Semmelweis's solution to childbed fever was germ theory introduced?

Semmelweis's solution to childbed fever was created about 19 years to germ theory.

2. Where did the practice of autopsies begin? In what way does performing an autopsy fit with the scientific attitude?

The practice of autopsies began when people started to realize they can gather further information on the deceased. Performing an autopsy fits in with the scientific attitude by exercising observation, confirmation, and skepticism.

3. (a) Do you think the discovery of penicillin was an accident? Why or why not? (b) Louis Pasteur is quoted as saying "chance favors the prepared mind." What did he mean by this? (c) In light of (a) and (b) do you regard the discovery of cinchona as accidental or scientific?

~~Although I think it was an accid~~ ~~No, I do not think it was an accident, because~~ Although I do think I was an accident I think the intention behind his methods carried much scientific purpose. His quote relates to the fact that was no surprise really was it that person is prepared for everything. I think it's accidental but regardless of if it is or not I think he worked how circumstances to this resolution.

4. What event catelyzed the formation of the Establecimiento de Ciencias de Médicas in 1833?

The event that catalyzed the formation of ~~Establecimiento~~ de Ciencias de Medicas in 1833 was the Revolución de Mayo.

5. (a) List some reasons the authors give to explain why medical reforms were slow to materialize in Nueva Granada, relative to the struggle for reform in Nueva España. (b) Who led the medical reform process in Nueva Granada in the 18th century? (c) When and where was the Facultad de Medicina reestablished in Nueva Granada, and what happened next?

Some reasons included the political corruption, the lack of colonial support, and the tension behind local authorities. Francisco José de Caldas was the leader of Nueva Granada. Inquisition 1827 is when the Facultad de Medicina was reestablished and in the city of ~~Bogotá~~ Bogotá.

6. (a) How many medical schools were there in Brazil in the eighteenth century? (b) What happened to the Portuguese Crown in 1807? What influence did this have on medical reform?

There was two schools. In 1807, the event of the Portuguese court to Brazil occured. This changed the medical reform by establishing medical schools, medical institutions and expanded scientific institutions.

7. As the generation of doctors in Columbia returned from France in the late 19th century, what three cultural institutions did they establish to enhance medical practice?

The three include the Colombian Medical Association, National Institute of Hygiene and Faculty Medicine at the National University of Colombia

8. **Triangulation** Suppose you observe a distant mountain from a flat plain. Suppose you walk a baseline of 1 km, perpendicular to the direction towards the mountain. The difference between the compass headings to the mountain at either end of the baseline is 5 degrees. How far away is the mountain?

$\tan(\theta) = \frac{\text{opposite}}{\text{adjacent}} = \frac{\text{baseline}}{D}$ $D = \frac{1\text{km}}{\tan(5^\circ)}$ (Calculator) $\tan(5^\circ) \approx 0.087$

$D = \frac{1\text{km}}{0.087} \approx$ ~~11.44km~~ 11.44km distance to the mountain is about 11.44km.

9. **Latitude and Longitude** (a) Suppose two cities lie along a constant line of longitude. If we measure a change of 30 minutes (0.5 degree latitude) between them, how far apart are they, in km? (b) Suppose two cities lie along a constant latitude of 45 degrees North. If they are 600 km apart, what is the change in longitude between them?

$D = 0.5 \times 111.32\text{km} = 55.66\text{km}$

$d = \frac{40,075\text{km}}{360^\circ} \approx 111.32\text{km}$

$111.32\text{km} \cdot \cos(45^\circ)$

≈ 0.707

$\frac{600\text{km}}{78.6} \approx 7.64^\circ$

a. 55.66

b. 7.64

3 Unit 5

1. (a) When were the first medical journals published in Columbia? (Give a few examples). (b) Compare this time frame to the publication of the first mining, chemistry, and physics journals in Mexico. (c) How, or through whom, were these journals connected to medical schools in Columbia?

The first medical journals were published in the 1800s. Examples include Revista de Medicine y Ciencias + Revista de la Facultad de Medicine de Bogotá. In comparison, Mexico had their scientific community established much earlier. These journals were tied to the country's medical needs.

2. In 1833, two Enlightenment period institutions were merged into the beginnings of a modern medical school in Mexico. What were the three institutions?

The Royal and Pontifical University of Mexico, the Royal ~~Medical~~ Medical and Physical Institute and The College of Surgery.

3. Consider our major in kinesiology and nutrition science (KNS). To what extent would we consider this medicine, in the absence of modern germ theory? That is, are there other holistic forms of medical development we encountered in Latin American history besides vaccines and drugs that fight bacteria and viruses?

KNS would not be considered as medicine based off the absence of germ theory. Yes, we discovered humoral medicine, indigenous medicine, and traditional ~~healing~~ healing.

4. (a) What historical event in 1808 led to the creation of the first medical and surgical schools in Brazil (b) When did Brazil declare independence from Portugal? (c) How long after independence did the Brazilians introduce modern reforms into the medical schools in Bahia and Rio de Janeiro?

The arrival of the Portuguese royal family in 1808. Brazil declared Independence in ~~1808~~ 1822. It took many decades for Brazil to introduce modern reforms into the medical schools in Bahia and Rio de Janeiro.

5. In Columbia, the Escuela de Medicina was founded in 1865. It was centered on hospital-based anatomy and physiology. Consider the following quote from the text: "The second phase is notable for the slow progress of laboratory-based medicine, especially etiopathological procedures. Its final stage, staring in the 1950s, is defined by the introduction of Flexnerian reforms from North American technological medicine." What does quote mean by Flexnerian? Think back to our reading in The Scientific Attitude.

This quote ~~explicit~~ exemplifies the big shift of ~~the~~ scientific standards and its approaches company both the second phase and final phase.

6. (a) What was a major driver of modern epidemiology in 19th Century Brazil? (b) What was the purpose of the Tropicalist School of medicine? (c) When did the bubonic plague enter Brazil, and how did the Brazilians respond?

The major modern epidemiology in 19th century Brazil was the outbreaks of infectious diseases. The purpose was to understand diseases and develop treatments. The bubonic plague first came to Brazil in 1899. They responded by quarantining everyone, sanitized as much as they could and promoted medical research