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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?
a) the error rates where higher. entire data set/work not shared with editors
b) 96.1% of the data was confirmed in favor of the author. this is a good example of confirmation bias: enormous pressure to discover something data suggests is right

* 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?
a) it allows for different points of views/perspectives, along with questions.
b) wisdom crowds is the concept of groups of people are smarter than an individual. in order to catch possible data flaws scientists have come up with three techniques; data sharing, replication, peer review, quantative methods. latin american scientists typically formed groups that would inspire, encourage, critisize their ideas, they also shared information.

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?
a) they held the press conferance before the data was peer reviewed
2) reproduceability of heat was a failure, 3) methods & data was not shared, 4) gamma rays / radiation was not reproduced, 5) their second time publishing peer reviewers rejected the the theory.
b) it took about 2 months for the entire investigation. march 1989 was the announcement of cold fusion and later in 1989 errors were agreed upon.

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?
a) professons included minning (mercury) to geosiver, cartography & geography (borders & maps), establishing an economy by locating natural resources, and sailors (longitude & latitudes).
b) primary profession of congress where lawyers, doctors, venture capitalists, and bankers.

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 purpose of the expedition was for mociño to study animals, minerals, plant wealth of the area, whale oil (for heat lamps), and possible borders. his overall job was to facilitate commerce Alaska.

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?
a) some other scientific contributions of unanue is political (with his role as secretary and discovery of the nation), medical, botanical (with coca discovery), geographical, historiographic, and finally military guide.
b) mutis main contributions include modern math & physics, expedition botanica in nueva granada. "correct" mon acid to and complete the linnaean classification system

→ 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. a) 1800-1820 during the reign of king Ferdinand of
cont. on next
spain. b) examples include: from sico jose de caldas (murdered), hipolito unanue (stripped

b) continued along with anyone else who was connected to the expedition botanican

Unit 4

1. How long after Semmelweis's solution to childbed fever was germ theory introduced?
In 1846 semmelweis had his theory that germs existed during child bed fever issue. It took about 15 years after for germ theory to be introduced.

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 in paris, and the way that autopsys fit with the scientific method is it was used to test and confirm what someone believed and if their initial diagnosis was correct. His evidence that allows for other subject diagnosises later.

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?
a) no because although someone may have stumbled upon something by applying the scientific attitude and real life application they are able to take a "failure/accident" & make sence of it. It was a coincidence that it was observed but not a coincidence that it was solved.
b) pasteur means that the people who had the intelligence & scientific background to research & understand discover things by "chance". You have to capitalize & be curious enough to discover something. c) The individual was sick & went to the woods & drank "bitter water" rather than coming back & ignoring the miracle he was curious & interested in the why, so no I do not think its accidental

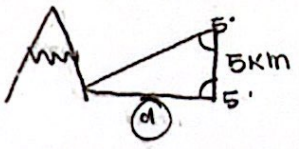
4. What event catelyzed the formation of the Establecimiento de Ciencias de Médicas in 1833?
The mexican war for independence was the catelyst for the formation. There was already a mixture of greece & european medical practices, both order for their to be a medical reform they had to be a social/political reform as well.

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?
a) medical reforms were slow to materialize because there was a lack of institutions. there was a low population in nueva granada compared to nueva espania, and slow materialization.
b) Jose celestino Mutis, and his goal was to save lives with the ideas he brought back from his travels.
c) the Facultad de medicina was restablished in 1802 in Rosario and after graduating only two doctors between 1636 & 1765 the war for independence occured in 1810 and it wasn't reopened until 9 years later.

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?
a) there were no medical schools in Brazil until the 18 century. They only had one medical school "Hospital Real de san Jose de Lisboa".
b) in 1807 the portuguease royal family took their court and ran from napoleonic war and went to brazil. They then funded and sparked more medical schools.

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?
1) la Lancenta (medical journal) - they brought back anatomical & physiological medicine from paris
2) standards/processional associations - (boards/AMA)
3) medical schools (to replace curanderismo with more modern thought.

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?



$d = \frac{b}{\theta}$ $\frac{1\text{km}}{0.087 \text{ radians}} = \approx 11.49 \text{ km}$

The mountain is about ≈11.49 km away.

5° → radians

$\frac{5°}{1} \cdot \frac{\pi}{180} = \frac{5\pi}{180°} = 0.087$

$= 0.087$ radians

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?

(b) $s = \theta R \cos\theta$

$600\text{km} = \theta\, 6371\text{km} \cos\theta$

$= \frac{600\text{km}}{\cos(\theta)}$ 0.133 radians

a) $s = R\theta$

$s = \frac{6371(0.5°)\pi}{180} = \frac{10,007.54}{180} \approx 55.60 \text{ km}$

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?

a) medical journals were published in columbia in 1852 with la caneta, and later in 1864 la Gracela medica de columbia, and columbia medica was published.

b) 1700 is when the mexican publications occured and mexico produced columbia with journal publications because they were not always affiliated to universities, and they didn't want to make a whole school

c) Dr. Antonio Vargas began in 1865 took medical journals and made a curriculum.

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

1) Facultad de medicina
2) Real Escuela de Cirugia
3) de Ciencias medicas

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?

we would consider this medicine because it involves anatomy, physical therapy, and chiropractic. In latin America some holistic medicine include variety of plant based medicine, and cupping. If we have acupuncture, PT, ? chiropractic but I would consider it medicine.

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?

a) Dom Joao 3 the rest of the portugeaze court moved to brazil and they then created doctors and institutions.

b) brazil declared independence in 1822

c) modern medical reforms were then introduced to medical schools 7 years after they declared independence.

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.

The quote uses the term Flexnerian in relation to Abraham Flexner who did the infamous report on the different medical schools to see facilities not follow proper procedure. Flexnerian went on to establish the laboratory medicine reforms.

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?

a) due to brazils tropical rainforest, and crowded areas, many epidemics occured in the area therefore it sparked a need for modern epidemiology in Brazil.

b) the purpose of the Tropicalist school of medicine was for them to research tropical tropical epidemics and tuberculosis

c) the bubonic plague entered brazil via rats on ships in 1899, and the brazilians responded by isolating + quarantining most who were infected. they then developed a vaccine by Dr. Oswaldo Cruz for the plague.