

1. Urbanism and Paleodemography
 - a. Cities develop in the last 5000 years
 - a. Greater risk of famines and nutritional stress
 - a. Increased fifth diseases
 - i. Acute community infections crowd diseases
 1. Small pox
 1. Diphtheria
 1. Rubella
 1. Flues
 1. Measles
 - a. Require a minimum host population of 500,000
 1. Chicken pox
 - a. 10,000
 1. Polio
 - a. 250,000
 1. All these require a minimum host population "critical population size"
- a. Urban populations exhibit
 - i. Chronic under-nutrition
 - i. High levels of infection
 1. Filth diseases
 - i. Shorter life spans
 1. High infant mortality rate ("graveyards of babies") up until 18th century
 - i. Cities less healthy than rural life, until less than 100 years ago
 - i. Global infant mortality rate in 1900s 165 p/ 1,000 births
 1. By 1915 it was about 10%
 1. Big thing that changed this was the invention of the modern sewage system
 - i. **Law of Natural Urban Decrease:** urban mortality so high, cities depend on immigration from countryside to maintain population because so many people died
 1. Storey wanted to see if this law applied to ancient cities also, so she tested the theory at the great archaeological site
 1. **Mortality at Teotihuacan**
 - a. Teotihuacan covered about eight square miles
 - b. Was abandoned abruptly in 750 AD and was there 1 AD
 - i. Had about 200,000 residents
 - a. Had pyramids of sun and moon and an "Avenue of the Dead"
 - b. Commoners lived in apartment complexes self contained walled off complexes and 4-5 apartments inside
 - i. Laid out in a grid fashion
 - ii. About 10,000 of these apartments
 - i. There were rich and poor neighborhoods, ethnic neighborhoods, occupational neighborhoods
 - a. Tlajinga 33
 - i. Apartment 33 in Tlajinga district (lower middle class working class neighborhood)
 - i. Custom was to bury the dead under the house floor
 - i. It was occupied 200-650 AD

- i. Generations of crafts-people (not farmers)
- i. Originally people made jewelry
- ii. Excavation there exposed 68 people in separate graves and 42 people found in the trash (captured warriors and sacrificed and made into a stew)
 - 1. Porotic hyperostosis but anemia was rare
 - 2. Really low life expectancies, when you were one there was a good chance you'd live for 28.6 more years
 - 3. High infant mortality rate
 - 1. Lots of biological stress (teeth, bones)
 - 1. Age 2-3 highest growth halt because they are being weaned off breast milk and put on contaminated food supply
 - 1. Most likely gastroenteritis because of severe diarrhea causing dehydration
- i. Overall:
 - 1. High infant mortality low life expectancy, couldn't keep its population up
 - 1. Law of natural urban decrease active
 - 1. Level of health = 17th century London
 - 1. Cross-cultural implications of an "urban" life
 - 1. Immigration of the city
 - Price 2000 Article
 - Can tell where someone came from based on bone chemistry
 - Homeland and migration: Strontium ^{86}Sr vs. ^{87}Sr
 - Bed rock -> soil -> groundwater -> humans
 - 1. Ratio in food chain varies place to place depending on local geology
 - Ratio permanently fixed in teeth when they form but change in bone when you move
 - 1. If you don't move anywhere your bone and teeth are equal ratio
 - 1. Bones will take ratio of where you live as an adult
 - ^{18}O and ^{16}O ratio
 - Differences in local rain water (reflects pattern of temperature, humidity, altitude, distance from

the sea) -> taken up in food chain -> fixes in teeth

- Compare bone to teeth
 - Teeth have homeland (where childhood is spent)
 - Total time-span seen in teeth is 6 months to a year
 - Bones have ratio of where adulthood is spent
- Apply this to Teotihuacan
 - Tlahinga 33
 - 29% of inhabitants were long term immigrants but spent their childhood outside the city then moved here this applied to both male and females, no evidence that they were immigrants they were completely assimilated into the culture of the city
 - Same burial