Word Count: 620 **Tiya Chokhani**

Archeologists excavated a settlement in New Mexico from the 1700s and their main findings included a trash pit and 11 graves. They found that the pit contained all the typical domestic trash of the 4 households and had three distinct stratigraphic layers, whereas the graves all contained the remains of one individual and their artifacts each.

We can consider the trash pit to be a secondary context as through cultural and natural transformation processes, the locations and relationships of physical remains have changed from that of the systemic context (Silberman, 2012). The objects trashed weren’t necessarily used in the same place as they were found nor were they intentionally placed in the archaeological context making it more secondary context than primary. Furthermore, objects that were created by and used by multiple individuals ended up in this pit so they've all gotten mixed together, conflating social groups and individuals, making it much harder to determine what was used by and belongs to which resident.

On the other hand, the locations and associations of the artifacts found in the individual graves are close to the systemic context and haven't been modified, therefore we can consider this to be primary context. We can tell they’re close to the systemic context as the artifacts found were used by the people they’re buried with and the precise spatial relationship of the events they took part in has been preserved because they were purposefully buried (Silberman, 2012). If we were to compare this to the trash pit, finding the systemic context proves harder as even if objects are found close together we still don’t know exactly which individual used what or if they relate, whereas, we know objects that are buried together in the graves go together.

Stratigraphy is a relative dating process which can be helpful in determining the order of use of the objects in the trash pit. Using the first law of stratigraphy, the law of association, which states that the objects in the same layers are closer together in time than those in different we can tell which artifacts were being used together or at the same time. The second law, the law of superposition, which says that the deposition of things in deeper layers occurred before those in top layers (Pollard, A.M., 2009) helps us make a timeline of which layers of artifacts came first.

While stratigraphy can help establish a relative timeline and establish a sequence of events it can’t help us estimate exactly which decade the trash came from. To do that we can use other dating methods like radiometric dating which depends on the radioactive decay of isotopes. It looks at the proportion of radioactive isotopes left over in the objects and calculates their age using the isotope’s half life. By using radiocarbon dating on the dead plants or other organisms found in the pit we can estimate the century of trash deposition, the decade however could prove difficult as even radiometric dating techniques have an uncertainty and never give us the exact year.

We should make sure to date multiple objects from each layer of the pit as the quality of the date derived is dependent on the quality of archeology (Pollard, A.M., 2009) and as mentioned by Pollard (2009), a single date should be regarded with suspicion. By dating a dozen different objects from the pit we can compare and make sure that no one date is off or inaccurate. Alongside this we can date the same object multiple times and use the mean of the values to get a more accurate result. We can get the most precise and accurate dates by using both stratigraphic and radiometric data together.