The Most Interesting Annotation I've Read

Two colleagues were discussing their thoughts on the article, *The Historian's Macroscope: Big Digital History; An experiment in writing in public, one page at a time, by* S. Graham, I. Milligan & S. Weingart. These colleagues, **vanessaowusupiameng** and **xvictoriajordan**, wrote their annotations in regards to paragraph 4, the section discussing the "Data Mining With Criminal Intent Project". When **vanessaowusupiameng** wrote that they would like to explore more about this subject, they also asked a relevant question: "I will like to explore more about the 'Data Mining with Criminal Intent Project' and how it relates to the criminal system today. Has it changed over time?"

This made me think of a recent interview I watched on television regarding a revolutionary new DNA technology through genetic genealogy used to solve old unsolved cases. Barbara Rae-Venter is an American genetic genealogist who utilized Genetic genealogy in order to track down suspects in cold, high-profile unsolved cases. Questions of the ethics regarding the use of shared genetic data by law enforcement in the United States have come up. Despite this, she has solved cases such as the Bear Brook Murders, the Golden State Killer, and is currently working on the Boy in the Box case in Pennsylvania. Venter uses public genetic databases and family trees to contribute to criminal investigations using an open data personal genomics database and genealogy website called GEDmatch. Using this, she worked on profiles that were identified to create family trees which could be used to identify the killer, by working back to find common ancestors, and then

building out the younger generations in the families to find a suspect. Those who question the ethics and legality of this innovative technique argue that the customers of genealogy companies did not consent to help criminal investigations, although GEDmatch discloses that profiles could be used to investigate violent crimes. Due to the large amount of DNA information presented in public databases, Venter takes help from volunteers to help her search. For the Bear Brook Murders, it took her and the volunteers an approximate 20,000 hours of work. Despite the ethical questions and the amount of effort and time that is invested in this new technology, it's proven to solve these cold cases that were probably impossible to solve without Venter's efforts.

I believe that this relates to Vanessa's question about the change over time in the criminal system. Without Venter's utlization of genealogy in order to discover DNA linking to available evidence in order to discover the suspects, this field would not be able to evolve. Equally as important is the digital historians; those who've spent hours upon hours taking and organizing records of the known information are vital to this process. Without digital history, we wouldn't be able to look back on unsolvable crimes let alone decipher them.

As technology has evolved, scientists have been able to develop the process of DNA sequencing technology. The future of genetics in forensics sees systems that can take the information given and create a prediction of the physical profile of a suspect, like a virtual sketch artist. DNA testing has helped federal, state and local law enforcement convict tens of thousands of criminals. Small differences in many genes interact to give rise to differences in physical appearance. Companies such as

“Parabon Nanolabs” and “Identitas” hope to exploit the growing knowledge of genetics to create profiles of victims and suspects from DNA samples alone. DNA testing in forensics science has proven to be a powerful tool for both catching criminals and exonerating innocent people.

With all of this information presented, digital historians are the reason why this data is available to us. Record keeping and data mining done has helped us continue the evolution of the use of technology in the field of law. Justice expects law enforcement to be fair, and the use of DNA has expanded to further our expectations of how the justice system works.