The Role of Investigative Genetic Genealogy in the Field of Criminal Justice

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The Role of Investigative Genetic Genealogy in the Field of Criminal Justice

Chloe Haas

HNRS 4980: Honors Project

Advisors: Colleen Boff and Catherine Pape
Abstract

Investigative genetic genealogy is an investigative method used by law enforcement to solve crimes. It involves the uploading of DNA found at a crime scene to genealogy databases to narrow down the suspect pool. The research question for this study is: Is law enforcement’s use of investigative genetic genealogy ethical? I conducted ten interviews with individuals who had a background in the Criminal Justice field, the legal field, the forensics field, and the field of genealogy to see their opinions on this topic. A majority of the participants in this study stated that they believe that law enforcement should be allowed to access these databases. A majority were also in support of law enforcement utilizing these databases to solve violent crimes, crimes involving children, and missing persons cases. However, they were not in support of law enforcement utilizing these databases to solve nonviolent crimes. A few of the participants brought up concerns regarding hacking. They felt that additional government protections should be put into place to protect them against potentially having their data hacked. Future studies could look further into this topic to see if this affects potential usage of these genealogy databases.
Introduction

There are several different methods that law enforcement can turn to when investigating a crime. One investigative method that law enforcement uses to assist with analyzing DNA evidence is investigative genetic genealogy. The use of investigative genetic genealogy, also commonly referred to as forensic genetic genealogy, has been increasing over time. One of the most prominent cases that was solved utilizing this method of investigation was the case of the Golden State Killer that was solved in 2018. The Golden State Killer was actively engaging in criminal behavior throughout the 1970s and the 1980s in California. He was a serial killer who committed at least thirteen murders during this time, all of which went unsolved until law enforcement uploaded DNA to a genealogical database in 2018. This allowed law enforcement to identify the Golden State Killer as Joseph James DeAngelo (Cavellier, 2023). This is only one example of the many different cases that have been solved due to this method.

As of December 31st, 2022, 545 cases were solved with the use of investigative genetic genealogy. In determining this number, there were several criteria that had to have been met for these cases to be included within the 545 cases. One of the criteria was that the investigation for these cases had to be led by a public entity, not a private one. This could include law enforcement agencies as well as medical examiners. Another one of the criteria was that investigative genetic genealogy was significant in solving the case (Taylor, 2023). The number of cases being solved through this investigative method is still increasing. The increasing use of investigative genetic genealogy has resulted in an increase in public awareness about law enforcement’s use of these databases. As a result, public interest in this topic has raised questions regarding the ethical and privacy concerns stemming from using these databases. The overarching research question for this study is as follows: Is law enforcement’s use of
investigative genetic genealogy ethical? It is hypothesized that the results from this study will find mixed answers to the research question. Additionally, it is also hypothesized that the results from this study will yield similar results to the results in previous research articles.

**Literature Review**

Similar to the use of investigative genetic genealogy, the literature on this topic has also been increasing in recent years. DNA plays a major role in criminal investigations and in the field of Criminal Justice as a whole. The first time that DNA was used to assist in solving a criminal case was in 1986. Ever since then, there have been numerous advancements in DNA technology to aid law enforcement in solving crimes. Investigative genetic genealogy is one of those advancements made in DNA evidence, which has proven to be extremely helpful in solving cases (Cavallier, 2023). This investigative tactic has been successfully used in several cases, both those that are currently active and those that have gone cold. However, although it seems like a simple process, there are several factors that go into solving a case utilizing this method of investigation. Genealogy sites such as Ancestry, 23andMe, GEDmatch, MyHeritage, etc. can allow law enforcement to have access to the information in these databases. These genealogy databases allow users to upload their own DNA in order to find biological relatives who share similar DNA to them. The law enforcement searches of these sites typically involve the investigators working with an individual or company who is qualified to conduct this type of search. They will upload the DNA that was found at the crime scene to these databases, either one site or multiple sites, and this will generate a list of biological relatives detailing how close and/or distant they are based on the DNA match. However, it is then up to the investigators to determine from there who the perpetrator actually is (Greytak et al., 2019; Lynch, 2023). The law enforcement searches of these genealogy databases can potentially narrow one’s identity down to
less than twenty people. Even if the individual that the investigators are looking to identify has not submitted their own DNA to the databases, it is still possible to identify them through a relative’s submission of DNA (Kaiser, 2018). Although helpful to law enforcement, this method can be controversial regarding the privacy concerns that it raises.

There are numerous cases that have been solved as a result of law enforcement utilizing investigative genetic genealogy as a tool. Investigative genetic genealogy has been used to assist in solving violent crimes and missing persons cases. Many of the cases that have been solved using this investigative method are cases that have remained unsolved for decades before this technological advancement in forensic science (Kennett, 2019). One of the more prominent cases solved using this method was the Golden State Killer case. The use of genetic genealogy allowed law enforcement to identify Joseph James DeAngelo as this infamous serial killer who had evaded being caught for decades. However, this is not the only case that has been solved through this method. Another case solved due to this investigative tactic was a 1964 murder that remained unsolved for almost sixty years until a genealogy database revealed a family tree that allowed for the police to identify the killer in 2022 (Cavellier, 2023). A forty year old cold case involving the murder of a young woman was recently solved using investigative genetic genealogy. In 1981, Laura Kempton was found murdered and DNA evidence of the killer was found on the scene, however, at the time they were unable to locate a suspect for the crime. In 2022, law enforcement used investigative genetic genealogy to reanalyze the DNA sample that was found on the scene. The results from this matched the DNA to two relatives and from there they were able to identify the killer as Ronney James Lee (Katersky & Deliso, 2023). Similar to standard DNA evidence, problems can arise within investigative genetic genealogy, primarily because of issues with DNA collection. A case in 2012 resulted in a man being put in jail for five
months because his DNA was matched to the DNA on a murder victim’s fingernail. However, he was in the hospital at the time of this murder. Prosecutors later determined that the paramedics who responded to the crime scene must have accidentally transferred his DNA to the victim after they had dropped him off at the hospital prior to the murder. These DNA transfers can result in wrongful convictions and can further complicate the searches that are turned up by the use of investigative genetic genealogy. However, in contrast, this practice has also been used to exonerate people who have been wrongfully convicted. In one case, a man had spent twenty years in prison after he was coerced into a false confession even though his DNA did not match the DNA that investigators found at the scene of the crime. However, the use of investigative genetic genealogy turned up the actual perpetrator and resulted in the exoneration of an innocent man (Lynch, 2023).

With investigative genetic genealogy growing in practice, there are also growing concerns in terms of the ethical and privacy concerns stemming from this method. There is a challenge to law enforcement using these databases when it comes to the genetic privacy of the individuals using these databases. There are terms and conditions that have been added to these databases that users must accept acknowledging that law enforcement can have access to these sites in violent crime investigations. However, an issue stemming from this is that some people who have used these websites prior to these terms and conditions being added may have been unaware of the way that these databases can be used at the time that they uploaded their DNA information (Greytak et al., 2019). A survey conducted in a 2018 study collected data from over a thousand respondents in order to see the public’s opinions on this topic and to see what privacy concerns are raised by the use of this investigative tactic. The survey results showed that a majority were in support of police having the ability to search these databases. The results of the
survey also showed that the respondents were much more likely to support this if it was being used to investigate violent crimes and identify missing persons when compared to it being used to investigate nonviolent crimes. Results also showed that females were much more likely to support the police use of these databases than males (Guerrini et al., 2018). When surveying the public, results have found that many agree that the use of this tactic needs to be regulated in that it should not be allowed to be utilized for petty crimes, but rather its use should be limited to investigating violent crimes (Kaiser, 2018). A lot of concerns regarding investigative genetic genealogy involve the privacy and the security issues that can stem from this practice because even though the person who uploaded their DNA to these genealogy databases consented to this, it gives law enforcement the ability to see their relatives who may not have consented or even uploaded their DNA at all. One survey of 1587 US adults found that a majority were in favor of law enforcement having access to these databases. However, they were only in favor of it being used to solve violent crimes and identify missing persons, not for non-violent crimes. The authors of this article also discuss the societal implications of using such methods. The effects of this technology are far-reaching because even if one individual has not uploaded their DNA, a relative, even a very distant one, may have uploaded their DNA which can turn up results for their family tree. Eventually, it may even be possible to identify anyone because of how many relatives have used these sites, which can potentially increase privacy concerns (Kennett, 2019).

A sample of DNA from one suspect can put their entire family’s DNA under investigation from law enforcement through these databases. One concern that has been found with this practice is the use of investigative genetic genealogy to identify the mothers of abandoned babies. This has raised the concern of whether or not this tactic should only be allowed to be used in violent criminal cases (Kling et al., 2021). The Electronic Frontier
Foundation, which is one of the leading nonprofit organizations that focuses on defending the civil liberties involved with technology and digital privacy, looked into the concerns involving investigative genetic genealogy. The article from this foundation looks into the fourth amendment issues and challenges that come with this practice, and it also discusses how this practice can potentially misidentify suspects as well as be used to help exonerate suspects that have been wrongfully convicted. *California v. Greenwood* is a 1988 case that ruled that discarded items containing DNA, such as straws or cups for example, are allowed to be collected and searched for DNA by law enforcement without the need for a warrant because the suspect abandoned their interest in their privacy rights when they discarded those items containing their DNA. There have been cases using investigative genetic genealogy where the law enforcement have collected these discarded DNA samples and then uploaded them to these databases which can yield several results. This can raise privacy and fourth amendment concerns through the use of this practice. The practice of investigative genetic genealogy is not without its flaws. There have been cases where it has misidentified suspects and resulted in the arrest of innocent people. One case in 2014 focusing on a cold case in Idaho resulted in the arrest of an innocent person because of the several matches that this search turned up. These misidentifications can occur simply because of issues with DNA collection (Lynch, 2023).

Another concern with this investigative practice is how to obtain consent for these types of searches, which raises discussions on whether or not law enforcement should have access to these genealogy databases. These genetic genealogy databases are estimated to have over 30 million individuals. This increases the chance that a relative, whether close or distant, can be identified using this type of search. A 2020 study interviewed people in regards to their opinions on the consent needed for this type of search. Some answers have turned up issues stating that
they believe people should have the right to block this use and some were not aware of this potential use at the time that they signed up for this. Others have stated that they would feel guilty if a family member was implicated as a result of them uploading their DNA to these databases. Of course, others were in favor of this type of search and were concerned with the suspect being caught rather than feeling guilty over a family member being found guilty as a result of their DNA. Overall, the interviews turned up many different responses ranging from in favor of this kind of practice to feeling the need for more detailed consent to be used in these cases (Samuel & Kennett, 2020).

Methods

The Institutional Review Board (IRB) at BGSU was consulted in this process and it was determined that this project does not meet the definition of human subject research under the purview of the IRB according to federal regulations.

Participants and Sampling

This is a qualitative study that used semi-structured interview questions. Interviews were conducted with ten participants. Four were women and six were men. They ranged in age from twenties to seventies. These individuals were chosen based on their experience with genealogy and/or the Criminal Justice field. Some of the individuals interviewed have personally submitted DNA to these databases in order to see if this had an impact on their opinions on investigative genetic genealogy.

Measures

Demographics. The demographic questions for these interviews were age, gender, and race. The age of the participants was measured in terms of decades: 20s, 30s, 40s, 50s, etc. The participants were asked to state their gender and their race.
**Usage of databases.** The participants were all asked at the beginning of the interview whether or not they have ever used a genealogy database. If they responded with yes, they were asked a follow-up question to determine which of the databases they used.

**Terms and conditions.** There are a couple of different questions that ask participants about the terms and conditions associated with the genealogy service they used. The first question on this topic was only asked to the individuals who responded “yes” to having used a genealogy database. They were asked whether or not they read through all of the terms and conditions when signing up for those databases. The second question on this topic was asked to all of the participants. The individuals were asked to respond on a scale of one to five (one being never to five being always) how often they read through the terms and conditions for any given website. The third question for this topic was also asked to all of the participants. This was an open-ended question and asked them to identify what circumstances it would take for them to read through all of the terms and conditions.

**Awareness.** There are a few questions that explore participants' knowledge of law enforcement’s use of genealogy databases for their work. The first question asked them whether or not they were aware, prior to the interview, that law enforcement could have access to these databases. The participants were then asked whether or not the knowledge of law enforcement having access to these databases did, or would, have an effect on them uploading their own DNA.

**Comfort with access.** There are several questions that look at how comfortable the participants are with law enforcement’s access to these databases. One question asks them to explain whether they think law enforcement should or should not be allowed to access these databases. Another question asks whether or not they feel that law enforcement having access to
these databases is an invasion of privacy. There are five questions on this topic that attempt to
gauge the individual’s comfort level by using a scale from one to five (one being not comfortable
at all to five being extremely comfortable). The first one asks them to use that scale to rate how
comfortable they are with law enforcement having access overall. The next four questions look
at how their comfort changes based on the type of crime. They were asked to use the scale to rate
how comfortable they feel with law enforcement using these sites to solve violent crimes, crimes
involving children, missing persons cases, and nonviolent crimes.

**Regulation and transparency.** There are a few questions on the topic of regulation and
transparency. The first question asks the participants whether or not they believe that the use of
these sites is something that the government should regulate more, and why or why not. The
second question asks whether or not they believe there should be more transparency in terms of
how law enforcement uses these sites, and why or why not. The final question on this topic asks
if they believe that there should be other investigative methods or tools that should be used
before resorting to investigative genetic genealogy, and why or why not.

**Open-ended response.** The last question of the interview was left open-ended. It asked
the participants if they had any final thoughts that they wanted to add on the topic that was not
covered by the questions that were asked in the interview. This allowed the participants to bring
up anything that they found important that they may not have had the chance to address during
the interview.

**Results**

**Demographics.** All ten of the individuals who were interviewed for this project were
white. Six of the individuals were male and four of the individuals were female. Age was
measured in terms of decades: 20s, 30s, 40s, 50s, etc. Two participants were in their 20s, two were in their 40s, four were in their 50s, one was in their 60s, and one was in their 70s.

**Have you ever used a genealogy database such as Ancestry, 23andMe, FamilySearch, MyHeritage etc.?** Six out of the ten individuals being interviewed have used a genealogy database. A follow-up question asking which of the databases they used was asked to these six individuals. Ancestry.com was the most frequently used of the genealogy databases, with five people reporting having used it. Two people reported that they used 23&Me. One of the individuals who used 23&Me also uploaded their DNA to Ancestry.com. One participant also stated that, in addition to Ancestry.com, they used: FamilySearch, Fold3, GenealogyBank, Newspapers.com, and Heritage Hub. However, the only one they uploaded their own DNA to was Ancestry.com. One of the participants that stated that they used Ancestry.com did not upload any DNA to the website, however, they stated that their mother did upload her DNA to the website.

**Did you read through all of the terms and conditions when you signed up for this service?** This question was only asked to the six participants who had used a genealogy database. Only one of these individuals stated that they read through all of the terms and conditions when they signed up for the service. Four stated that they did not read through all of the terms and conditions. However, of the four, two said that they did read some of the conditions but not all of them. As for the individual who used Ancestry.com but did not actually upload DNA to the website, they said that they did not have to read through the terms and conditions since they were not uploading DNA. However, they stated that, in regards to the terms and conditions, “That’s definitely something that I would read very closely if I were to upload data.”
On a scale from 1-5 (1 being never to 5 being always) how often do you read the terms and conditions for any given website/app? The results for this question are displayed in Figure 1. Five of the participants responded with a one on the scale. Three participants responded with a two on the scale. Two participants responded with a three on the scale. Overall, a majority of the individuals answered with “Never” in terms of how often they read the terms and conditions for any website or application.

Under what circumstance would you read the terms and conditions? The individuals were then asked about what circumstances it would take for them to read through all of the terms and conditions. There were varying responses to this question. One individual said that they would be most likely to read through all of the terms and conditions if they were short, and only one or two paragraphs long. Two individuals said that it would have to be extremely important if they were going to have to read through them all. Four individuals said that they would be more inclined to read through all of the terms and conditions if they felt that there were some privacy
concerns that needed to be addressed such as the use of DNA, medical records, and scientific research. Three individuals said that they would be most likely to read through all of the terms and conditions if there was a monetary or financial aspect to the terms, such as banking information, purchasing a car, and/or purchasing a house.

**Prior to this interview, did you know that law enforcement can access some of these genealogy databases?** Seven of the ten individuals stated that prior to this interview, they did know that law enforcement could access some of these genealogy databases. Three of the ten individuals stated that they were not aware that law enforcement could access these databases. However, two of the three individuals who said no mentioned that they were not surprised by this information.

**How would/did the knowledge of law enforcement having access affect whether or not you used these databases?** Two individuals said that they would not upload their DNA to one of these databases because of their concerns. One of these two was more concerned about the possibility of being hacked than they were concerned about law enforcement’s usage. The other individual said they felt deterred from using these databases and stated: “I am not a big fan of centralized government and government access to my data is not something I’m totally against, but it’s something that I’m trepidatious of.” The other eight individuals said that this knowledge either did not or would not affect whether or not they used these databases. Four of these eight stated that they were not concerned with law enforcement having access because they have not committed any crimes so they did not see an issue with it. In response to this question, one individual stated: “I follow a lot of like unidentified decedents, and when they get identified, they’re always getting identified through genealogy. And I was like oh, how cool if I’m like the third cousin of one and they find somebody.”
On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement having access to these databases? The results for this question are displayed in Figure 2. Three of the individuals responded with a two on the scale. Three of the individuals responded with a three on the scale. Two individuals responded with a four on the scale. One individual responded with a five on the scale. One individual’s response is not depicted in Figure 2. This individual felt that there was not one set answer that they could give to this question. They explained that in terms of comfort with the legality of law enforcement’s use they were a five on the scale, but in terms of personal comfort they were a one on the scale. They stated that: “I’m a five, totally comfortable legally. I’m a one in my level of comfort as to whether they’re following a protocol where people actually understand what the fuck they’re doing. Do I feel like I got, like, screwed over legally? No. Do I feel like they could do a better job communicating what the issues are to the people that agree? Yes.”
Why do you think that law enforcement either should or should not be allowed to access these databases? Eight of the participants stated that they believed that law enforcement should be allowed to access these databases. Two of these eight individuals specified that they should only be allowed if they get a warrant and follow the proper procedures. Six of these eight individuals said that the use of these databases can be very beneficial because a lot of these cases would have gone unsolved without these websites. One individual emphasized their feelings on the importance of law enforcement using these databases for unidentified people. They said, “I mean like there’s no other way to identify them. Like a lot of people, they don’t even know, like their family members dead or missing, and sometimes they’re getting connected to second or third cousins. And like, those are people who’ve never even met the actual person who’s gone. So I think it’s good. To me, being able to find out what happened to people like that is priceless.” None of the participants specifically said that they think that law enforcement should not be allowed to access these databases. However, two participants were in the middle, and felt that they should be allowed, but only under certain circumstances. They felt that in terms of violent crimes they felt that law enforcement should be allowed to access these databases. One of these two individuals stated: “If something is like a minor infraction or something like that, I really don’t think that law enforcement needs to have access to it.”

Do you think that law enforcement having access to these databases is an invasion of privacy, and why or why not? Eight out of the ten participants stated that they believed that law enforcement’s access to these databases is not an invasion of privacy. Six of these eight explained that they did not view it as an invasion of privacy because the use of these sites requires you to sign off on it. One individual stated in response to this question that “I think in today’s modern world, obtaining a search warrant for either your cell phone or social media or
things like that, I think is more of an invasion of privacy than the police searching a genealogy database.” One of the eight individuals who said it was not an invasion of privacy elaborated by saying that “So since we signed it, it’s not an invasion of privacy. However, my mindset, it sure feels like an invasion of privacy, but technically and legally, it’s absolutely not.” Two individuals, however, stated that they do think that it is an invasion of privacy. One of these two responded by saying “I think it's personal data. It’s something that we have a reasonable expectation of privacy in. And so I think that there is the possibility of Fourth Amendment protections.” The second individual felt that it was an invasion of privacy for the relatives of the person who submitted their DNA. This individual explained that their mother uploaded her DNA to Ancestry.com and explained that: “My mom’s choice to put her genetic data there impacts me, who had no choice.” They further elaborated by stating: “So I do think it’s an invasion of privacy for, like, the third parties who just had no choice in their relatives' decisions.”

Do you think the use of these sites is something that the government should regulate, and why or why not? This question elicited mixed responses from the individuals being interviewed. Two individuals said they did not think that the government should regulate these databases. Both stated that they feel that the government would get in the way and they would rather not have the government involved. Six individuals were in favor of having the government regulate the use of these databases. Two of these six stated that it would not hurt to have more regulations and protections to limit the usage of these websites. Three of these six felt that government regulations would be important in order to address potential hacking concerns and add additional protections on that subject. One individual felt these regulations would be beneficial “on not just these sites, but all sites that require us to agree to terms. No average person that hasn’t gone to law school is going to be able to go through those agreements and
understand them.” Two individuals were in between, and had mixed feelings on the idea of government regulations. One stated that: “I mean, it would be a nice thought to regulate it, but I don’t even understand how that would work.” The other individual stated: “I think government regulation is kind of like a tricky, tricky subject because like you never know when them putting their hand in something could be like too much and have too much control.” However, they also stated that: “I feel like that might need to be regulated in a way depending on the crime.”

**On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve violent crimes?** The results for this question are displayed in Figure 3. Two of the individuals responded with a three on the scale. Three of the individuals responded with a four on the scale. Five of the individuals responded with a five on the scale. Overall, a majority of the individuals responded with extremely comfortable in terms of law enforcement using these sites to solve violent crimes.

![Figure 3](image)
On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve crimes involving children? The results for this question are displayed in Figure 4. One of the individuals responded with a one on the scale. This individual elaborated and said that this category was “Too broad.” Two individuals responded with a three on the scale. Two individuals responded with a four on the scale. Five individuals responded with a five on the scale. Overall, a majority of the individuals responded with extremely comfortable in terms of law enforcement using these sites to solve crimes involving children.

![Bar Chart](image)

**How comfortable would/do you feel with law enforcement using these sites to solve crimes involving children?**

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<th>Scale</th>
<th>Number of Individuals</th>
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On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve missing persons cases? The results for this question are displayed in Figure 5. Four individuals responded with a four on the scale. Six individuals responded with a five on the scale. Overall, a majority of the individuals responded with extremely comfortable in terms of law enforcement using these sites to solve missing persons cases. One individual who responded
with a five elaborated and said: “I actually feel like that’s like almost one of the best ways to use a site like Ancestry.com is for missing persons.”

![Bar graph showing comfort levels](image)

**How comfortable would/do you feel with law enforcement using these sites to solve missing persons cases?**

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**Figure 5**

On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve nonviolent crimes? The results for this question are displayed in Figure 6. Three individuals responded with a one on the scale. Four individuals responded with a two on the scale. Three individuals responded with a three on the scale. Overall, a majority of the respondents tended to lean towards being not comfortable with law enforcement using these sites to solve nonviolent crimes.
Do you think there should be more transparency in terms of how law enforcement uses these databases, why or why not? The responses for this question were evenly split. Five believed that there should be more transparency, and the other five felt that there did not need to be any more transparency. The individuals who said no explained that since they had to opt in on the websites, they felt that it was already transparent. Two of these five individuals said that the police should not be transparent in an ongoing case. One further elaborated by stating: “I would say they don’t need to be transparent in an ongoing case because you don’t want to, I mean, you know, it’s just like any investigation. They’re not going to tell everybody what they’re doing.” All of the individuals who said yes said that it is good to be more transparent so that the public is aware of what they are signing up for. One individual reasoned: “The more transparency, the more understanding that the citizens have about why things happen and how things happen. Then the safer we are and the more accountable the government is for their actions.” Another individual stated: “Thinking about this interview, I think that was my main point. I don’t have a problem when someone signs the agreement, but you need to know what you’re signing for. So
that’s an issue of transparency. And I think that on a scale of one to ten, these companies do a one on doing that.”

Do you think there should be other investigative methods/tools used before resorting to investigative genetic genealogy? All ten of the individuals said that there should be other investigative methods used before resorting to investigative genetic genealogy. One individual stated that: “I think they should try to use all means necessary before that, but at the same time I think it’s been an effective tool of finding people years after an offense has taken place.” Another individual elaborated stating: “They identify a lot with like, you know, teeth and fingerprints and stuff like that. And I think that should always be like the first step. But at some point, you’re going to reach a standstill, not everyone goes to the dentist, some people when they’re killed get their hands cut off. Like you can’t always rely on stuff like that. So yeah, I think last resort, but it should be a resort.”

Are there any final thoughts you have on the topic that were not covered by the questions? One point that was brought up when this question was asked was the idea of privacy versus security. One individual stated: “If you start weighing security versus privacy, well, what if it was a really violent crime? What if it was a crime against children? Then it starts tipping. We are willing, I think generally speaking, to give up more privacy for more security if it helps protect vulnerable members of society.” This same individual then stated: “I’ve tried to think about what a coherent, concise answer was, and I don’t know that I have one. It’s very useful and I’m not comfortable with it.” Another point that was brought up when this question was asked was the change in technology over time. One individual stated: “I think like when crimes were committed twenty or thirty years ago, like no one ever expected people to have the technology available to ever like solve them like this which I think makes people uncomfortable.”
Discussion

The results from these interviews generally supported the published studies on the topic. Researchers in these studies surveyed individuals and found that respondents were generally supportive of law enforcement utilizing these databases to solve: violent crimes, crimes involving children, and missing persons cases. However, the surveys from these previous studies revealed that they were generally not in favor of law enforcement using these databases to solve nonviolent crimes (Guerrini et al., 2018). These interviews bear similar results in terms of looking at whether or not law enforcement should be allowed to use these databases for all crimes or only certain crimes. Similarly, previous literature cited survey data that showed that 79% of individuals were in support of law enforcement being allowed to search genealogy databases (Guerrini et al., 2018). A majority of the participants in my study stated that they believe that law enforcement should be allowed to access these databases.

Unlike the data from the previous published studies, this study relied on interview data that allowed for open-ended responses instead of close-ended survey data. The responses diverged from previous literature in that a few participants brought up concerns regarding hacking. These individuals felt that additional government protections should be put into place to help protect them against potentially having their data hacked.

Conclusion

Overall, the participants in this study had similar responses to each other. In terms of how often the participants stated that they read the terms and conditions for any website, a majority responded with “Never.” In terms of whether or not law enforcement having access to these databases had an effect on their usage, a majority responded by stating that it either would not or did not have an effect. A majority of the participants also agreed that law enforcement should be
allowed to access these genealogy databases. Similarly, a majority also stated that they believe law enforcement’s usage of these sites is not an invasion of privacy because it requires permission before one is allowed to upload their DNA. In regards to the questions that looked at whether or not law enforcement should be allowed to use these databases for all crimes or only certain crimes, the responses were also very similar to each other. A majority of the respondents were comfortable with law enforcement using these databases to solve: violent crimes, crimes involving children, and missing persons cases. However, the majority reported that they were uncomfortable with law enforcement using these databases to solve nonviolent crimes. All of the individuals interviewed agreed that there should be other investigative methods used before resorting to investigative genetic genealogy.

**Implications for Future Research**

There was diversity within this sample in terms of gender and age. There were four women interviewed and six men. The age also varied from twenties to seventies, which gave a pretty wide range of participants interviewed. However, all of the participants interviewed stated their race as white, so this sample was not diverse in terms of race. This could have potentially had an impact on the responses that were given, and as such, is a limitation to this study. Future studies could improve upon this by interviewing a more diverse group of respondents based on race and ethnicity.

A few participants voiced their concern with potentially having these genealogical databases hacked, and having their information being placed in an unsecure database. It was not clear as to what specific concerns they had regarding potential hacking of these databases. Future research could look into this topic to further understand how these hacking concerns affect potential usage of these databases.
Appendix

Interview Questions

1.) Have you ever used a genealogy database such as Ancestry, 23andMe, FamilySearch, MyHeritage etc.?

2.) Did you read through all of the terms and conditions when you signed up for this service?

3.) On a scale from 1-5 (1 being never to 5 being always) how often do you read the terms and conditions for any given website/app?

4.) Under what circumstance would you read the terms and conditions?

5.) Prior to this interview, did you know that law enforcement can access some of these genealogy databases?

6.) How would/did the knowledge of law enforcement having access affect whether or not you used these databases?

7.) On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement having access to these databases?

8.) Why do you think that law enforcement either should or should not be allowed to access these databases?

9.) Do you think that law enforcement having access to these databases is an invasion of privacy, and why or why not?

10.) Do you think the use of these sites is something that the government should regulate, and why or why not?
11.) On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve violent crimes?

12.) On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve crimes involving children?

13.) On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve missing persons cases?

14.) On a scale from 1-5 (1 being not comfortable at all to 5 being extremely comfortable) how comfortable would/do you feel with law enforcement using these sites to solve nonviolent crimes?

15.) Do you think there should be more transparency in terms of how law enforcement uses these databases, why or why not?

16.) Do you think there should be other investigative methods/tools used before resorting to investigative genetic genealogy?

17.) Are there any final thoughts you have on the topic that were not covered by the questions?
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