DNA in Practice

Class 3: Determining Recent Parentage

Christopher C. Child, cchild@nehgs.org

DNA testing can uncover unexpected results, be it cases of adoption or misattributed parentage. While records of adoption can have several legal and other challenges, DNA tests have offered a new avenue of research not previously available. The number of people who have DNA tests in the United States make the possibility of finding biological relatives much more likely. Adoptees often go to DNA as a first resort or, in some cases, only learn of their adoption after taking a DNA test. While people will often learn of a misattributed parentage because of taking a DNA test, the DNA companies then serve as the solution to finding recent biological parents or other relatives. Sometimes the whole picture of one's adoption or misattributed parentage may not be completely understood, and a solution may be discovered years later.

Types of DNA tests

While Y-DNA and mtDNA tests, which follow the patrilineal and matrilineal lines respectively (with the former only available to men), have been commercially available now for over two decades, the tests were not really specific for someone that was trying to identify an unknown parent or parents, beyond possible surnames and ultimate continental origins in a single line.

Autosomal DNA tests (atDNA), focus on the chromosomes we inherit from both of our parents, who in turn received their DNA from their parents. Certain close kinships can be much more specific. Second cousins or closer always will share autosomal DNA, and depending on the size of a family, someone may have a few dozen to a few hundred second cousins, increasing the likelihood of finding near matches.

Companies offering tests

The "Big Four" companies that offer tests are (in order of number of participants) Ancestry.com; 23andMe; MyHeritage; and FamilyTreeDNA. All offer autosomal tests. 23andme identifies the haplogroups of your Y-Chromosome (if applicable), mtDNA, and shows x chromosome matches. FamilyTreeDNA offers matches along the X chromosome. Based on numbers alone and the usefulness of trees, Ancestry.com is my recommended first test for determining recent parentage. One never knows what company a "key" relative may have tested with, so being in all four databases can have its advantages. You can download your "RawDNA" from any of the four companies and upload it onto MyHeritage, FamilyTreeDNA, and the third party site GedMatch. Ancestry and 23andME require DNA test be taken directly and do not allow "RawDNA" uploads (but they do allow downloads).

Going through Your results

Using "DNA Autosomal Statistics" is key when looking at your results in terms of how a centimorgan match might be. You'll want to take lots of notes on your matches, figuring out which people are common matches, and thinking of your ancestry in terms of halves, quadrants, and eighths. It is also especially important to screenshot your closer matches (especially if you end up with a close family match) as sometimes a match may "go to sleep," after seeing your close result. In addition to capturing your centimorgan match, also copy their genealogical tree information if provided.

Ethnic Amounts

While it's common to focus on the "ethnic amounts," (percent German, French, etc.), keep these amounts with some degree of caution and do not let it limit your research if seeing matches with surnames of other nationalities. Jewish and "Multi-continental" (African, European, Native American, Asian) amounts can have their benefits especially when comparing them to matches with or without those common ethnic backgrounds.

Other Tools

What Are The Odds? (https://dnapainter.com/tools/probability) lets you use the amounts of DNA you share with multiple matches to help figure out where you might fit into their tree. You enter your target name and year of birth, build a simple tree or upload a GEDCOM, enter the amounts of shared DNA, and then either add your own hypothesis or have the tool suggest a hypothesis for you. This site then generates an odds ratio for each hypothesis. These scores themselves cannot give you a definitive answer, but they can guide you in the right direction.

Case Studies – Amanda

Amanda was born in 1986 and raised by a single mother. She learns the name of her biological mother from her original birth certificate. Amanda's biological mother is not sure who the biological father is, and acknowledges relationships with three men – brothers Wesley and Curtis, as well as *their* father Curtis (Sr.)

- In looking at matches with the surnames in this family, we find several relatives related to the mother of Wesley and Curtis (Jr.), which appears to eliminate Curtis, Sr. as a candidate
- Julie, a niece of both Wesley and Curtis Jr. (a daughter of their sister) appears as match.
- Julie's match with Amanda is "too low" for a first cousin relationship
- A third unrelated close match is discovered, revealing an additional surprise behind the birth of Amanda's biological father.

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John, Samantha, and Laura

Three people—John, Samantha, and Laura—all take DNA tests. They were raised by married parents in different states from one another.

- The three connect as they are all predicted to be half-siblings
- Analysis of these results show they paternal half-siblings. None of them have expected kinships with any of their "biographical fathers" or expected paternal relatives. The three learn all of their parents used artificial insemination services after having difficulty conceiving.
- A search for their shared biological father is undertaken. The closest shared match any of them have is a third cousin.
- John takes a Y-DNA test. Kits are uploaded on Gedmatch, MyHeritage, and FamilyTreeDNA. The biological half-siblings take tests from Ancestry.
- Three disparate geographical regions are identified of unrelated shared matches.
- Extensive genealogical research is done on the three clusters, determining where they come together.
- The smallness of the qualifying family, although very specific information on one member, help find a solution.

Richard, a Boston "foundling," born in 1902

James's father Richard Hopkins (1902-1958) was found in front of a police station in Boston in January 1902, likely a day or so old and was adopted by a local family. No paper clues exist on his biological heritage. James takes an atDNA test.

- James has several close matches with a Simpson family in nearby Framingham, Massachusetts, initially appearing that his father Richard may have been a child born to a married couple with several children – Robert and Jennifer (Bates) Simpson, as James is closely related to several of their descendants, as well as descendants of sisters of both Robert and Jennifer, making them appear to be a likely "ancestral couple."
- However, one person who would be a first cousins once removed, is too low of a match.
- Jennifer had two children by her first cousin Mark Williams, and James matches a descendant of the son.
- Additionally, James is also matching descendants of Mark Williams by his *second* wife Pam.
- How can James match so closely with descendants of Jennifer and Robert, Jennifer and her first husband Mark, and Mark and his second wife Pam?
- One possible solution was determined, satisfying all of the centimorgan matches, and a providing a compelling reason a child was abandoned.

El Dorado 1914

Frequent blogpost contributor Jeff Record has chronicled his search for finding the roots of his paternal grandmother, Katheryn Ogle, who was born in Kansas in 1914 originally as Georgia Lee Young before being adopted. His quest to get her original birth certificate only identified her mother, leaving her father blank.

- I recommend Jeff's father, Jack Record, the son of Katheryn (who is deceased), first take a DNA test from Ancestry, based on the better likelihood of matches.
- Jack's matches, at the level of second cousins – are organized into three groups: 1) The Youngs (the family of his mother's biological mother); 2) The Records (his father's family); and 3) The Unknowns.
- Two of the three unknowns – Jason Mitchell and Annabell Harris - have trees and are shown to be second cousins once removed to each other through the Jackson family of a nearby state.
- "M.F." the highest match, does not have an online tree, but appears to be the Michael Ford included in a tree managed by his wife.
- Michael Ford is a half-first cousin once removed to Annabelle and a second cousin to Jason, all through the same Jackson family.
- Michael's grandfather, J. Martin Jackson, lived in El Dorado, Kansas from 1911 to 1918, right where Jack's grandmother was living when she became pregnant.
- A search of any other members of Martin's family is undertaken, and a clean conclusion is reached.

Testing Companies – *referenced in this presentation*
- FamilyTreeDNA: https://www.familytreedna.com/
- AncestryDNA: http://dna.ancestry.com/
- MyHeritage: https://www.myheritage.com/
- 23andMe: https://www.23andme.com/

Genetic Genealogy Resources:
- Autosomal DNA statistics: https://isogg.org/wiki/Autosomal_DNA_statistics
- Percent of DNA shared: http://www.isogg.org/wiki/File:Cousin_tree_(with_genetic_kinship).png
- Shared cMs for various relationships: http://www.isogg.org/wiki/File:Shared-cM-Project-Image-2.png also http://thegeneticgenealogist.com/2017/08/26/august-2017-update-to-the-shared-cm-project/
- Blogs
  - Blaine Bettinger: The Genetic Genealogist http://thegeneticgenealogist.com/
  - CeCe Moore: Your Genetic Genealogist http://www.yourgeneticgenealogist.com/
  - Roberta Estes: DNAeXplained - Genetic Genealogy http://dna-explained.com/
  - Judy Russell: The Legal Genealogist http://www.legalgenealogist.com/category/dna/
  - Chris Child, "El Dorado 1914," https://vita-brevis.org/2018/02/el-dorado-1914/ (referenced in case study)

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