

An Ancestral Lines Pairing System: Uniquely Numbering Each Ancestral Line, Generation, Pairing and Sibling

By Capers W. McDonald

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A new ancestral numbering system has been developed that visibly displays component lines and generations of pedigrees in either text or chart formats. This “Ancestral Lines Pairing System” meets essential requirements of being easy to read and understand while maintaining the integrity of its unique indicators, and of recording relationships briefly with as much useful information as possible.

All ancestors are individually numbered without first compiling a comprehensive set or naming every individual. The new system first organizes and numbers each direct Line in a manner ideally suited to presenting these as continuous ancestral lineages – setting and maintaining the direct “ancestor line” numbers. It next visibly numbers successive Generations along each Line as simply as possible, with each father's and mother's Generation number always being one greater than the Generation number of their children. Line numbers are added in the new system at one half the rate individuals are added in the Ahnentafel method, and these smaller numbers continue to be used into the deeper ancestries. These therefore are not merely “index” locator numbers; they also visibly convey additional information beginning with the individual's family line and generation.

The Ancestral Lines Pairing System – *Ancestral Lines* for short – is particularly well suited for displaying ancestral lineages in a variety of formats. These reflect some of the more important considerations a genealogist should address in selecting and applying a numbering system. The initial Lines and Generations calculated for direct ancestors, displayed in a straightforward two-number format, can be used effectively in many applications.

The next important alternative to consider is to build on this basic framework in a three-number format and uniquely number all Siblings and paternal or maternal half-Siblings of the direct ancestry consecutively. This assigns Sibling numbers continuously through all ancestral Pairings, using numbers representing temporal or other rankings appended to the calculated Line and Generation numbers of each direct Line. This fundamental alternative is particularly satisfactory for presenting any pedigree of direct ancestors and their full Siblings. However, by numbering all offspring consecutively, it excludes visibly identifying half-Siblings as being from collateral, non-ancestral Pairings.

To fully account for Sibling relationships, there is the option first to number all the Pairings of each direct ancestor and thereafter number all offspring as Siblings within their Pairing. With this alternative, a four-number format assigns a number for each Pairing by Line and Generation in the entire collateral family, and then assigns a number for each Sibling within their nuclear family. This extended approach most clearly identifies different Pairings as well as the half-Siblings of collateral Pairings, of which there may be several in any Generation, both paternal and maternal.

Ancestral Lines readily supports both the Y-DNA and mtDNA studies often paired with traditional family research. These two distinct ancestral lineages are prominent and easily followed in the new system. Patrilineal Line 1 conveniently always represents the Y-DNA line, and *Ancestral Lines*' straightforward Generational numbering matches with the testing companies' and others' supporting software formats that indicate the probabilities of when a Most Recent Common Ancestor (MRCA) is shared.

Ancestral Lines is mathematically based and readily computerized. Numbers given to the Maternal Lines paired in each Generation are equal to the partner's Paternal Line number plus a consistent “Generation Constant.” This added number increases for all Lines in each ancestral Generation, growing as should be expected as multiples (or powers) of the “coupling” number, two.

OVERVIEW

When working with ancestral lineages, both professional and non-professional genealogists most often deal with family “lines” and “generations.” However, there is no accepted ancestral numbering system that addresses this apparent need to reliably assign and clearly indicate both lineage and generational information.^{[1], [2], [3]} This is particularly concerning, since it has been acknowledged for decades that the “selection of a numbering system is one of the key decisions the writer of a family history will have to make. It should, therefore, be made with care.”^{[4], [5]}

The widely-used Ahnentafel method of sequentially numbering individuals in ancestral pedigrees does not directly indicate antecedent lines or generations.^[6] This also is the case for the Dollarhide and similar approaches, most derived from the Ahnentafel indexing method.^[7] Until now, there has been no generally accepted mathematically-based alternative to Ahnentafel numbering.^[8]

In many endeavors, specific precursors, "lines of reasoning" or "sequences of information" give rise to the need to uniquely identify all contributors and how each is correlated with another in a primary, secondary or more distant relationship. In all cases, maintaining the integrity of the relevant "lines" or "sequences" is paramount, and recording the relationships to indicate succinctly as much useful information as possible is always important and usually the basis of any systematic approach to record keeping.

An improved ancestral numbering system is needed that, at a minimum, displays component lines and generations. Any such new system must meet the more general requirements of being easy to read and understand, and of recording relationships briefly with as much useful information as possible, while maintaining the integrity of its indicators. To complete this undertaking, the new system also should provide options to informatively record the entire collateral family, uniquely assigning individual numbers for ancestral pairings and siblings comprising each nuclear family.

An “Ancestral Lines Pairing System” therefore has been developed for uniquely numbering each ancestral line, generation, pairing and sibling in any genealogical record. Called *Ancestral Lines* for short, it was developed by the author, Capers W. McDonald, beginning in 1984, with expansion and descriptive updates since.^[9]

A NEW ANCESTRAL NUMBERING SYSTEM

The Ancestral Lines Pairing System is an antecedent pairs numbering system that is designed to consistently calculate and clearly display both lineage and generational information reliably and succinctly. It also enables users to account for all members of each nuclear family, including all pairings and the siblings or half-siblings of collateral partners.

Most generally, *Ancestral Lines* is a method for representing genealogical information in a mathematical array by ordering and numbering direct ancestors and their siblings. This information can be presented coherently in text or book formats as well as in tabular or other diagrammatic forms.

With *Ancestral Lines*, ancestors are individually numbered without first compiling a comprehensive set or definitively naming all individuals, requiring only connecting how each relates to a selected descendant or another known ancestor. Complex relationships among ancestors – such as generation intervals for Y-DNA analyses; maternal line tracing with mtDNA implications; how generations in different lines share time periods; or clear indications of generations and pairing order for half-siblings – readily are ascertained based on this numbering.

Two types of numerical records constitute *Ancestral Lines*. First, relationships are calculated for all direct ancestral Lines and Generations, and then individuals can be assigned numbers relative to their Pairings and Siblings.

Figure One shows an example of a pedigree chart of four generations in a well-known early American family ^[10] using *Ancestral Lines* numbering.



The initial Line and Generation numbering relationships for *Ancestral Lines* are shown in Figure Two. The inherent symmetry of the newly numbered Lines appearing in each Generation is shaded, to emphasize how both the relative

positions or “branching” of these, as well as the sequence of Generations along each Line, are systematically organized to provide the most useful information in a basic format.



SIBLING ASSIGNMENTS IN A THREE-NUMBER FORMAT

A three-number format of *Ancestral Lines* assigns Sibling numbers continuously through all ancestral Pairings. In this approach, a number representing temporal or other ranking based on birth date or other information for each Sibling is appended to the first two, calculated Line and Generation numbers of each Paternal Line. For example, as shown in Figure Three, the first and second Siblings born in direct Paternal Line 7 in Generation 4 for another well-studied early American family^[11] would be numbered 7.4:1 and 7.4:2, respectively. This fundamental, three-number format is particularly satisfactory for presenting any ancestral pedigree of direct ancestors and their full siblings, but excludes visibly identifying half-siblings as being from collateral pairings.

The extended, four-number format of *Ancestral Lines* assigns numbers for both Pairings and Siblings, thereby providing the inherently valuable indication of different marriages or other Pairings, as well as clearly identifying half-siblings of collateral partners. For additional insights into all of these numbering relationships, please see the Portable Document Format (PDF) version of this article.



ORGANIZATION OF ANCESTRAL LINEAGES

By design, *Ancestral Lines* organizes and numbers each direct line in a manner ideally suited to presenting these as continuous family lineages. For example, the first 16 of these lines comprise a compelling start to almost any ancestral pedigree. Completing these through their inherent first four generations of ancestry could be an initial goal for many researchers – one that might take years to reach or, for some, be found to be unreachable.

For better-known ancestries, with perhaps centuries of development behind them, the initial 16 lines still could serve as the beginning of a much longer and broader genealogical journey. One presentation, for example, would be a variation of the “multi-surname approach” described by Curran for the “writer who chooses to group his ancestral lines by surname, presenting them one at a time...”^[12] Alternatively, after presenting these first 16 as deep lineage chapters, the genealogist could group all other lines first appearing in the earlier cohorts by generation, similar to a traditional Ahnentafel, but with considerably easier reference to the relationships of the first numbered lineages as well as to other lines and each numbered generation. Several other presentation formats also are possible.

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Ancestral Lines is currently conducting a very brief, secure online survey about professional and non-professional work with ancestral lineages. This consists of nine questions with multiple-choice answers and should take participants about 3 to 4 minutes to complete. Their interests are nonprofit, and participants' responses will be grouped with those of others.

There are two choices of how to participate, and they both involve the same survey.

1. If you would like to participate later in the survey, perhaps at a more convenient time, please email researcher@ancestrallines.net, and you will be emailed an invitation soon. Or...

2. Please [click here to participate now](#) in the survey.

Your contribution will be greatly appreciated!

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- 1 Joan F. Curran, Madilyn Coen Crane, and John H. Wray. *Numbering Your Genealogy: Basic Systems, Complex Families, and International Kin*. (Arlington: National Genealogical Society, rev. ed., 2008).
- 2 Richard A. Pence, "Numbering Systems in Genealogy," National Genealogical Society Computer Interest Group, rev. 1993, published online 1995 at www.saintclair.org/numbers, accessed 21 April 2011.
- 3 Donn Devine, "How to Number People in Pedigrees and Genealogies," Ancestry Newsletter, vol. 4, no. 1 (Salt Lake City: Ancestry, 1986).
- 4 Joan F. Curran, "Numbering Your Genealogy: Sound and Simple Systems," *NGS Quarterly* 79 (September 1991), 189. Published with same title as an individual monograph, NGS Special Publication no. 59 (Arlington: NGS, 1992).
- 5 John Frederick Dorman, ed., *The Virginia Genealogist* 37:1 (1993), 66-67, review of *Numbering Your Genealogy: Sound and Simple Systems*, "...the Editor...recognizes the value of adherence to standard forms and strongly recommends that anyone contemplating the publication of a genealogy should follow Mrs. Curran's advice. The advice given here should be followed in most publications, especially when many generations of a family are to be discussed."
- 6 Donn Devine, "How to Number People in Pedigrees and Genealogies," Ancestry Newsletter, vol. 4, no. 1.
- 7 Terry Cole, "Dollarhide System," Encyclopedia of Genealogy (Eastman's Online Genealogy Newsletter), published online 2008 at www.eogen.com/DollarhideSystem, accessed 1 September 2011.
- 8 Joan F. Curran, Madilyn Coen Crane, and John H. Wray. *Numbering Your Genealogy: Basic Systems, Complex Families, and International Kin*.
- 9 "Numbering System for Antecedents and Outcomes," U. S. Utility Patent pending also covered by international Patent Cooperation Treaty Regulations (Washington, DC: USPTO, 2011). A specific application of this patent, the Ancestral Lines Pairing System (*Ancestral Lines*) is freely available for personal record-keeping, research, educational and other non-commercial uses, and readily may be licensed for commercial purposes.
- 10 Alicia Crane Williams, ed., *Family of John Alden, Mayflower Families Through Five Generations* (Plymouth: Gen. Soc. Mayflower Descendants, 2002), vol. 16, pt. 1.
- 11 Robert S. Wakefield, rev. ed., *Family of William White, Mayflower Families Through Five Generations* (Plymouth: Gen. Soc. Mayflower Descendants, 1997), vol. 13.
- 12 Joan F. Curran, Madilyn Coen Crane, and John H. Wray. *Numbering Your Genealogy: Basic Systems, Complex Families, and International Kin*.