

A Family Fingerprint Project

By JAMES S. McCANN

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There seemed to be several good reasons for embarking on a project to take the fingerprints of the 24 members of our family. Primarily, the prints would provide a positive means of identification should the need ever arise in the future. Secondly, an analysis of the pattern distribution might just possibly reveal some inherited trends. Thirdly, some interesting or unusual patterns might turn up. And finally, an article about such a project might well prompt several other members to undertake similar projects, and follow-up articles for publication in IDENTIFICATION NEWS conceivable might result.

For purposes of clarification, and in all due modesty, I hasten to explain that the 24 family members involved in the project do not represent my wife and myself and our 22 children! On the contrary, the group is made up of my parents, their four sons and three daughters, and their 15 grandchildren. The spouses of the married children were not included in the project, with one exception that will be explained later in this article. Hopefully, in the years ahead, all of the spouses and additional grandchildren. The spouses of the married children were not included in the project, with one exception that will be explained later in this article. Hopefully, in the years ahead, all of the spouses and additional grandchildren and great-grandchildren will be fingerprinted in order that a complete and continuing "family chart" will be recorded.

Pattern Designations and Symbols:

Many readers may not be fully aware of the various fingerprint pattern types, so a brief word of explanation seems appropriate at this point. Generally speaking, the patterns that randomly appear on the outer joint of the fingers are referred to as Ulnar loops, Radial loops, Whorls, Arches and Tented Arches. For purposes of this article, the symbols U, R, W, A and T will be used to designate these patterns.

Perhaps one additional statement should be made for those readers who are not fingerprint oriented. Statistics compiled during the past 50 years or more by various researchers show that approximately 65% of all fingerprints are Loops (Ulnar or Radial), about 30% are Whorls, and the remaining 5% are composed

of Arches and Tented Arches. Any type of pattern (i.e., U, R, W, A or T) may appear on any one of the fingers. The pattern distribution on a person's right hand may be the same as on the left hand, or it may be completely different. All of this, of course, is well known to fingerprint technicians who, in their daily task of classifying and searching, come across just about every combination of patterns . . . although, I guess, it is still true that no one has yet run across a set of prints in which all 10 patterns are Radial Loops.

Project Results:

Using the symbols referred to earlier, Figure 1 represents the pattern distribution of the 24 members of the family. In each case, the 10-section box containing the symbols shows the right hand across the top row, from thumb to little finger, and the left hand across the bottom row from thumb to little finger. The two boxes at the top of Figure 1 represent my parents; the seven boxes running horizontally below them represent their seven children (including myself) in order of birth from left to right, and the vertical rows of boxes represent the grandchildren in order of birth in each instance.

FIGURE 1 CENTERFOLD

O. K., now, you fingerprint technicians, do you see in Figure 1 any indication of inherited trends as regards genera I pattern distribution? How about any rather unusual combinations of pattern types? Well, more about that later. In case you are wondering whether the family is statistically normal, the distribution shows that there are 122 (or 51%) Ulnar Loops, 5 (or 2%) Radial Loops, for a total of 53% Loops, 101 (or 42%) Whorls, 10 (or 4%) Arches, and 2 (or 1%) Tented Arches. In other words, when compared against the statistics compiled by the researchers, we are short on Loops, heavy on Whorls, and just about average on Arches and Tented Arches.

There certainly seems to be nothing particularly unique as regards the pattern distribution of my parents when compared to their seven children. However, we did notice that Annette, the oldest of the seven, has a pattern distribution of Whorls and Ulnar

(Turn Page Please

PAUL

W	W	U	W	W
W	U	U	W	U

ANNETTE

W	W	U	U	U
W	W	U	U	U

DAVID

U	U	A	A	W
U	W	U	U	U

MARY BETH

W	A	U	W	U
U	A	A	U	U

STEPHEN

W	W	U	W	U
W	W	W	W	U

MARIANNE

U	W	U	W	W
U	W	U	W	W

BRIDGET

U	U	A	U	U
W	U	U	U	U

EDWARD

W	W	U	W	U
U	W	U	W	U

JOSEPH

U	U	U	W	W
U	U	U	W	W

KEVIN B.

U	U	U	U	U
U	U	U	U	U

JEFFREY

W	W	W	W	U
U	W	U	U	U

GREGORY M.

W	W	W	W	W
W	W	W	W	W

MEGAN

W	R	U	U	U
W	U	U	U	U

GREGORY F.

U	W	W	W	U
U	W	U	W	U

JANET

W	W	U	W	W
W	W	U	W	W

WE
WI

J.

W	V
W	V

K.

W	V
W	V

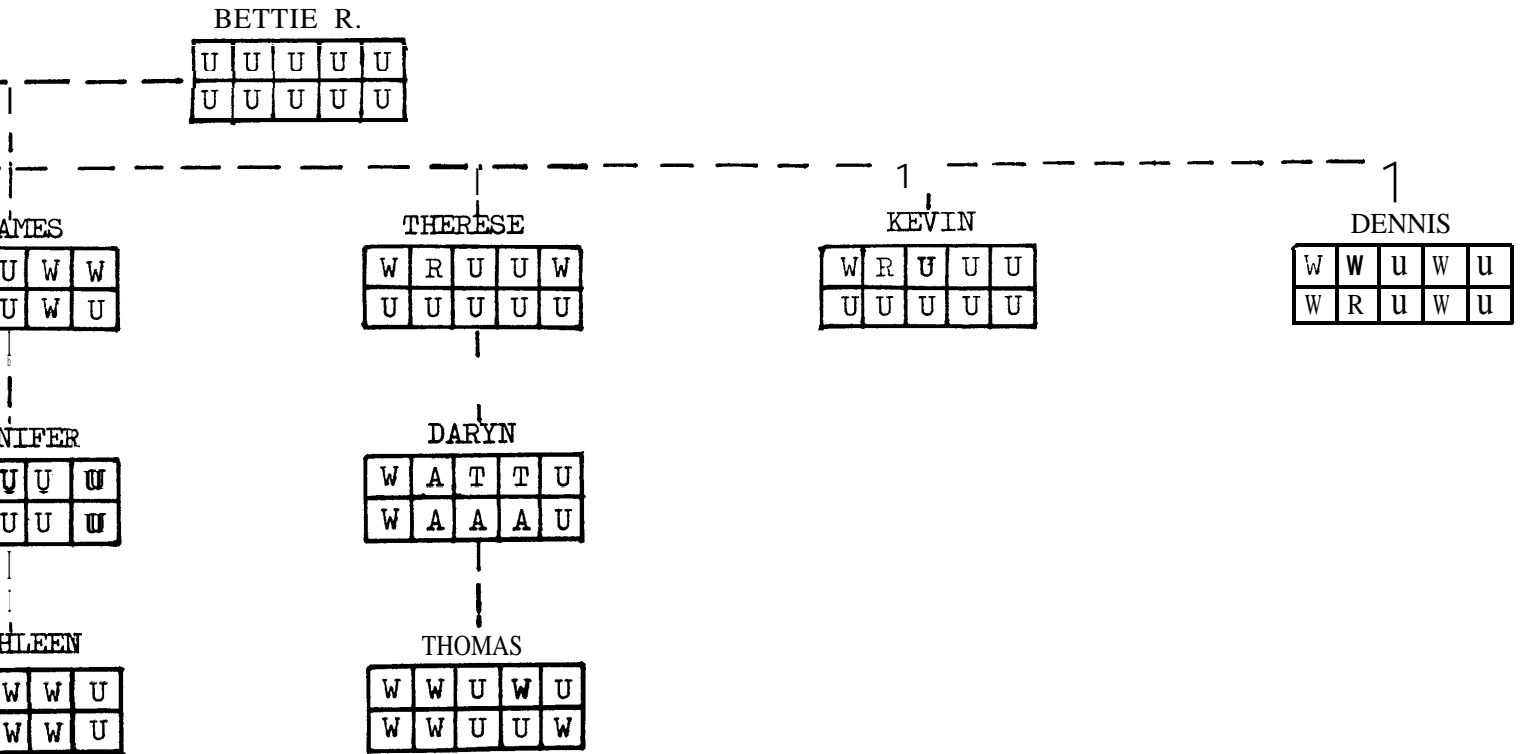


FIGURE 1
FAMILY FINGERPRINT CHART

Loops only, which are the patterns of both parents. Conversely, David and Mary Beth, who are next in succession, have Arch patterns. The next three in succession (myself, Therese and Kevin) all have the W R combination in the right thumb and index, and Dennis has the same W R combination, but in his left hand. Whether these factors give any hint of inherited trends is something that could undoubtedly provide the basis of a lengthy debate, and I will leave the decision to the researchers.

Interesting Patterns:

Half of the fun of such a project for a fingerprint technician is to see whether there are any interesting patterns in the family. We noticed a couple in looking over the results of our work. For example, the two patterns shown in Figure 2 are the thumb prints of my brother, Dennis. They are Whorl type patterns, and to the technician would be more accurately defined as Central Pocket Loops, which are quite common in fingerprint work.

Right Thumb



Left Thumb



FIGURE 2.

The prints are somewhat unusual in this case, however, because the pattern in his right thumb had the ridge flow that would normally appear in the left hand, and the pattern in his left thumb has the features of a right hand print. According to brother Kevin, "he either has his arms on backwards, or else the arms are O.K. but his body is facing in the wrong direction". Well, maybe there is some truth to what he says, because Dennis also has a "wrong way" nutant loop in his left index finger, as shown in Figure 3.

Left Index



FIGURE 3.

About the only other pattern that was slightly off the beaten path was the left index of my brother David, shown in Figure 4. Technically, it is a Whorl type pattern of the lateral pocket sub-group, and for single print classification purposes would require a reference as an Accidental.

Left Index



FIGURE 4.

Mirror Prints:

If you will refer to Figure 1 again, you will notice that Annette and her four sons all have Whorl patterns in their index fingers in both hands. The term "mirror prints" is used by researchers in such cases, to indicate that a particular finger in one hand has the same pattern type as the corresponding finger of the other hand. Such "mirroring" is not at all uncommon when applied on a finger to finger basis, and statistical probabilities of such occurrences have been well documented over the years.

When the entire pattern distribution in the right hand conforms to the entire pattern distributions in the left hand, it is referred to as "whole hand mirroring". Some combinations are quite common as, for example, the U type patterns in all 10 fingers. As fingerprint technicians know, there are several other combinations that also appear with some degree of regularity in the daily intake of fingerprint cards in a large identification bureau. Figure 1 shows that "whole hand mirroring" occurs in several instances within our family, including the prints of my mother, my sister Annette, my own two children, my nephew Kevin, and all four children of my brother David.

We felt that this might be quite an unusual **coincidence**. As you can see, David's prints have no such mirroring trend, so we thought it would be interesting to check the prints of his wife, Nancy. Sure enough, analysis of her patterns showed that she indeed has the **same** type of mirroring that is true of the four children. Figure 5 shows this interesting situation quite clearly.