

Upgrade to Family History Concepts, Procedures, and Tools

Increase Researcher Productivity by 100 to 1000 Times

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How To Quickly Finish the Basic Genealogy for the Western World

We Have the Data

There are about 1 million published books containing about 1 billion unique names, presented in descendent sequence.

We Have the Technology

The manual procedures and Internet programs are now available for assembling all these names, in descendent sequence, with connections through marriages to supply all possible pedigrees.

We Have the People

A small portion of the LDS Church volunteer staff could do the job.
15,000 people could finish it in two years

Let's Organize and Cooperate To Finish It

We can finish all the basic genealogy for the Western world in 2 to 4 years.
We need to add a complete new method to do this part efficiently.

A New Procedure For
**Assembling The Highest Quality Temple Names
100 times Faster
using specialization and cooperation**

Get 100 times the results, with the same amount of effort,
using specialization and cooperation.

“Hard to explain, but easy to do.”

It is only difficult to explain because we have to replace most of the traditional pre-Internet genealogy thinking on name-assembly techniques with Henry Ford thinking. No one has done that before.

“Doing the engineering is hard. Doing the research work is easy.”

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Assembling The Highest Quality Names For Use In The Temples

Choose:

1 million a year -- FamilySearch Methods

or

100 million a year -- ProgenyLink Methods

The Overall Goal:

Complete 1 billion names, to the highest quality standards, within 10 years.

This new process could

- 1) provide the 10 million names needed each year for temple work, or go further and
- 2) Do 100 million names and keep up with all the other name-preparation processes -- digitizing microfilm and Online Indexing. That could soon provide up to 100 years of temple work input.

Details and Definitions

Matching the speeds of all the processes

The preliminary processes of capturing, digitizing, and indexing names in public documents can proceed at speeds of up to 500 million names per year. However, the final and critical process of assembling names into a high-quality, multi-generational database for actual temple work is currently moving much more slowly, producing as few as 1 million newly finished names a year. It appears that this tremendous mismatch of production speeds needs to be resolved as soon as possible to meet general Church goals.

Define Highest Quality:

By high quality names, I mean those names which are completely new, completely unique, completely unduplicated, and which are linked into multigenerational pedigrees at least 5 generations deep, with a database 10 to 15 generations deep where the available records allow it. They also have all currently available and applicable public records linked to each unique person to better document the name, and to stop all the usual sources of unintentional duplication. There would be no recycled names from earlier research.

We Have the Data

In the various genealogy libraries of the world, there are about 1 million published books, altogether containing about 1 billion names in family surname groups, most of them arranged in descendent form. (This assumes about 1000 names are taken from each book.) The Family History Library in Salt Lake City holds about 80,000 books of this type, of which about 60,000 have been digitized. For example, the book *Descendants of Englebert Huff of Dutchess County, New York*, contains about 5,000 of his descendants born with the Huff surname across 13 generations. The ancient ancestor, Englebert, was born about 1637 in Norway. I believe most of these books are quite accurate, although most do not cite the records from which the data was taken. However, with today's extensive online versions of public records, it is relatively easy to verify whether the public records match the published book or not.

This particular collection of 5000 Huff names was assembled in about 10 years, which is about the same time in which a pedigree-sequence researcher might have completed the Herculean task of six full generations comprising about 150 names. This simple comparison indicates that the descendent-sequence method of assembling names is about 30 times more efficient for assembling a complete, high-quality database. What follows is a sample page from that book, showing a typical way to number and organize those same-surname groups of family members.

Sample page from published genealogy book.

A name may appear just once in the book, as a child, if that person had no offspring. If there were offspring, then the name typically appears twice, once as a child and once as a parent. On this page, those names with a “+” prefix are those who appear later as a parent.

1767. Beatrice Sarah⁸ Huff (Sidney Wright⁷, Solomon⁶, Paul⁵, Solomon⁴, Paul³, William², Engelbert¹) was born on 24 September 1896 in Detroit, Wayne County, Michigan. She married James Clark, born in 1897. James died in 1979, and Beatrice on 15 February 1988.

Beatrice and James had three children:

- + 2677. James Edward Clark, 30 November 1924-.
- 2678. Harold Huff Clark, 1930-1940.
- + 2679. Jean Moorhouse Clark, 16 March 1932-.

1769. Sidney Wright⁸ Huff, Jr. (Sidney Wright⁷, Solomon⁶, Paul⁵, Solomon⁴, Paul³, William², Engelbert¹) was born on 24 September 1903 in Detroit, Wayne County, Michigan. He followed his father in the coal business. On 15 September 1926, he married Marian Elizabeth Garlick, born on 31 December 1904. He died on 25 May 1972 and is buried in Roseland Park Mausoleum, Detroit. Marian was still living in 1987.

Sidney and Marian had two children:

- + 2680. Nancy Elizabeth Huff, 9 April 1928-.
- + 2681. Richard Wright Huff, 26 August 1930-.

1773. William⁸ Van Allen (Jane⁷ Huff, David Wright⁶, Paul⁵, Solomon⁴, Paul³, William², Engelbert¹) was born in 1876. He married Clara Van Laan, born in 1885. William died in 1962, Clara in 1973. Nothing further is known of them, except that they had five children:

- 2682. Marjorie E. Van Allen, 1909-1925; n. f. i.
- 2683. D. Ross Van Allen, 1910-1937; n. f. i.
- + 2684. Mildred Van Allen, 1912-.
- 2685. William Van Allen, Jr., ca 1914-; n. f. i.
- 2686. Norma Van Allen, 1915-1939; n. f. i.

1777. Ross^{8b} Huff (William Walter⁷, David Wright⁶, Paul⁵, Solomon⁴, Paul³, William², Engelbert¹) was born on 2 December 1880 in Kent Bridge, Kent County, Ontario. He married Lena Catherine McCoig. Nothing is known of their lives. She died on 5 July 1921, and he on 16 September 1934, in Chatham, Kent County, Ontario; both are buried in Maple Leaf Cemetery, Chatham.

They had two children:

- + 2687. James Ross Huff, 30 November 1913-1986.
- 2688. Gordon Mac Huff, 20 February 1917; married Angela Newman, who died on 21 September 1989; as of 1990, living in Blackburn, Ottawa-Carleton Regional Municipality, Ontario; no issue.

1782. William Carl⁸ Huff (William Walter⁷, David Wright⁶, Paul⁵, Solomon⁴, Paul³, William², Engelbert¹) was born on 20 March 1898 in Chatham, Kent County, Ontario. He was a farmer. On 10 November 1928, he married Isabel Ford, born in 1898. He died on 23 September 1966, and Isabel in 1968.

^bThe name is given as Roscoe in the family Bible, but appears to have been regarded as Ross by the family.

Scale of effort

Comparison:

The 1940 census contained about **140 million names**. It took the Online Indexing crew only about 4 months to complete it last year.

There are only **70 million people** who died in the United States before 1930. That is only half as many names to process. These are all clearly names that we can prepare for temple work without anyone being concerned.

(Not many are still living from the 1930 census. They would have to be at least 83. There are still quite a few people who are still living whose names appeared in the 1940 census. The youngest might only be 73 now.)

Workload:

Obviously, 70 million names is only half of the 140 million names in the 1940 census, so the process should move along quickly, even though a little more work is required for each name. A large portion of the 70 million names are already in a format that only requires data entry. Original research might only be necessary for perhaps 20% of the names. In other words, the process could move along almost as quickly as the 1940 census. If it took twice as long, implying 4 times as much work for each name, it could still be completed in about 8 months. Participants could each enter names at the rate of at least 5000 a year in fulltime work.

Completing the World's Genealogy Research

Old Strategy	Everybody Does the Impossible	We Finish Nothing
New Strategy	Everybody Does the Possible	We Finish Everything

Assignments and Accomplishments

Individuals Try to Do	We Accomplish
Everything	Nothing (almost)
A carefully chosen segment of problem – subdivide, specialize, cooperate	Everything

This is the basic logic for all efficient industrial manufacturing

Subdivide and Complete The Assignment Through Specialization and Cooperation

<input checked="" type="checkbox"/>	1000 to 5000 unique names	Up to 1 year's work for a person.	<input checked="" type="checkbox"/>
		Check off each block as completed.	
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>

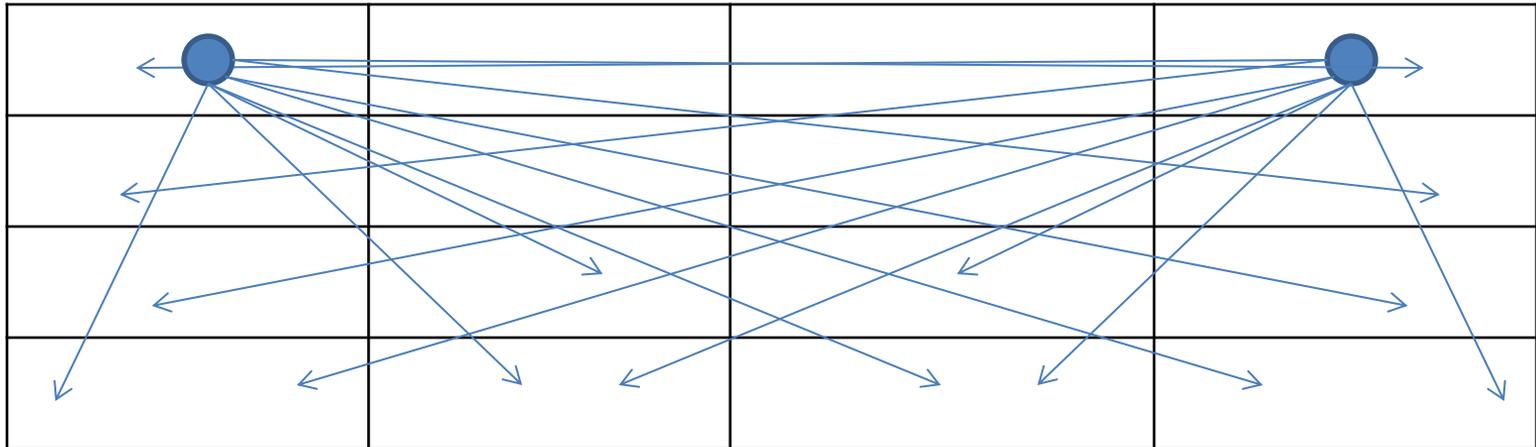
Each participant finishes one non-duplicating portion, usually his own surname. If time allows, choose another and finish it. Choose from perhaps 32 surnames of near ancestors.

Available methods to subdivide and specialize:

1. Male-line-only descendent-sequence. Use surnames to subdivide work and complete sections. Use published books and Internet publications as input. Most general method.
2. "Community studies." Use geography to subdivide work and complete sections. This method requires more organizational effort

Today's Path to Extensive Duplicate Effort and Chaos :

Each person chooses a place to start, but then tries to do everything.
That process is impossible to complete for any one individual.

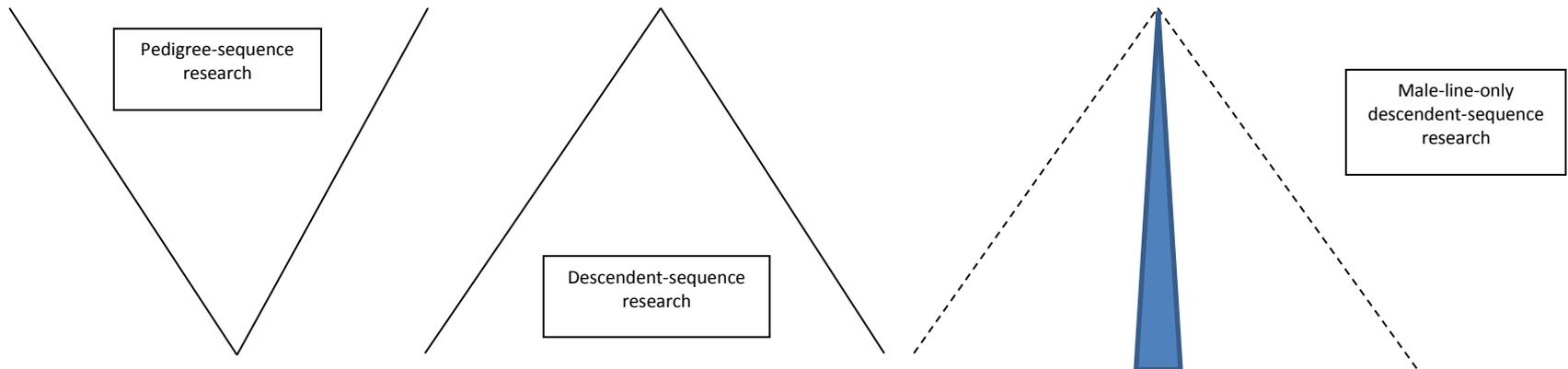


Go From Impossible to Possible

By a Change In Procedure

Accomplish at least 100 times as much, with no extra effort.

General research pattern possibilities



Pedigree-sequence research for 15 generations =

about 65,000 names.

Requires about 1,000 lifetimes to complete.

Impossible to complete.

Descendent-sequence research for 15 generations =

About 1 billion names.

Requires about 1,000 lifetimes to complete.

Impossible to complete.

Male-line-only descendent-sequence research for 10-15 generations = about

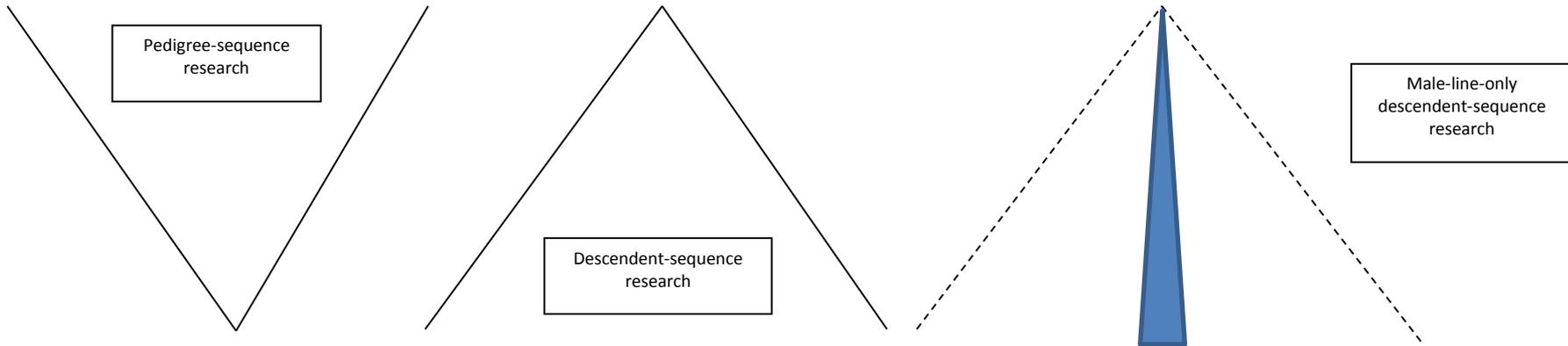
1,000 names to 5,000 names.

Requires up to 1 year's work to complete.

Easy to complete. Use single-surname.

Duplication Rate Considerations

General research pattern possibilities



Pedigree-sequence research for 15 generations =
about 65,000 names.

Requires about 1,000 lifetimes to complete.

Impossible to complete.

200,000 average duplication rate for 300 million US citizens doing 15 generations using traditional methods.

Descendent-sequence research for 15 generations =
About 1 billion names.

Requires about 1,000 lifetimes to complete.

Impossible to complete.

4 billion average duplication rate for 300 million US citizens doing 15 generations using traditional methods.

Male-line-only descendent-sequence research for 10-15 generations = about
1,000 names to 5,000 names.

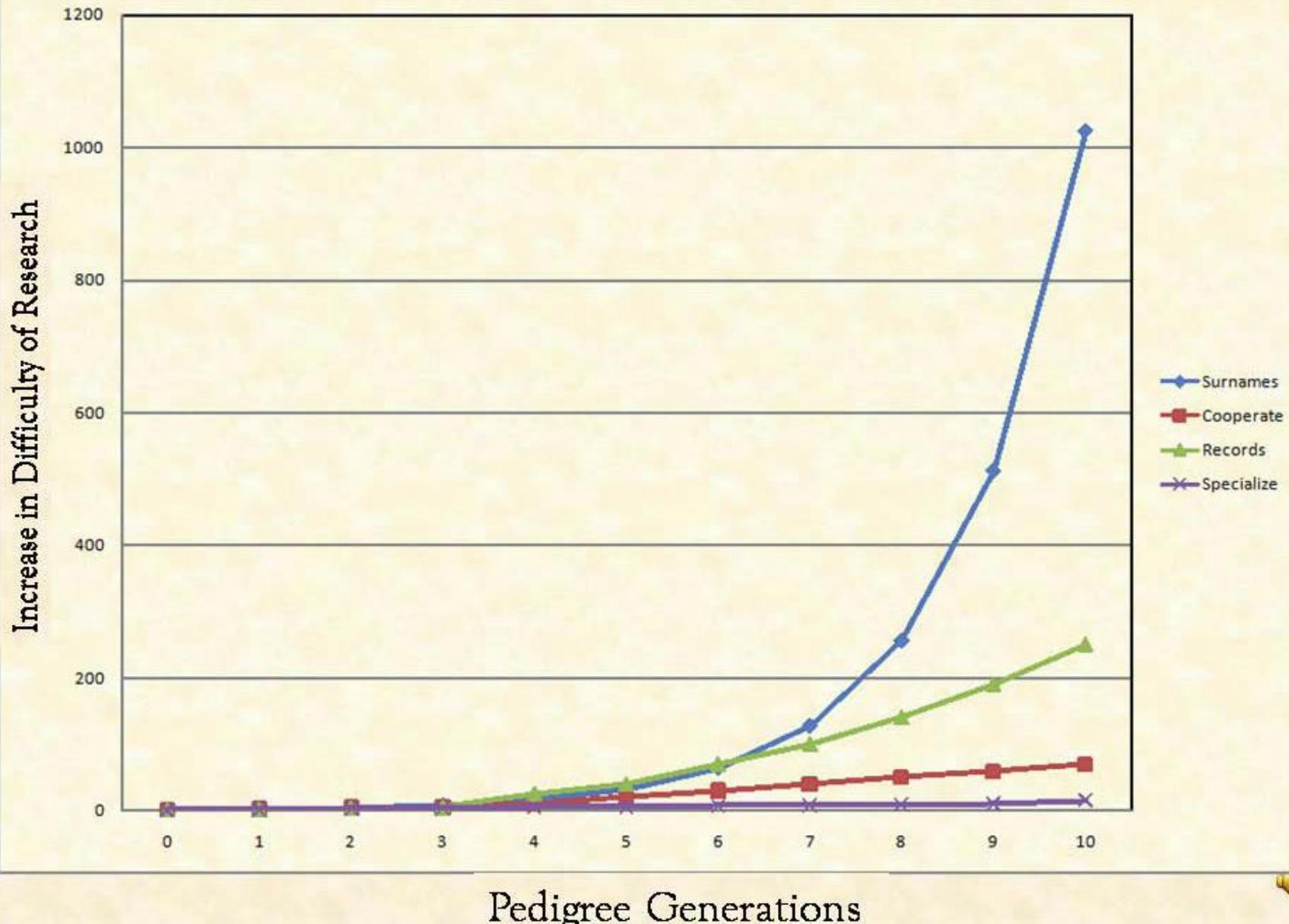
Requires up to 1 year's work to complete.

Easy to complete. Use single-surname.

Zero (0) duplication rate.

(Some minimal planned duplication is actually helpful in tying together the various single-surname family groups.)

Overcoming Exponential Increases in Workload and Difficulty



Flatten Surname line to Cooperate line. Flatten (old) Records line to Specialize line.

Overcoming Exponential Increases in Workload and Difficulty. Flatten the Lines.

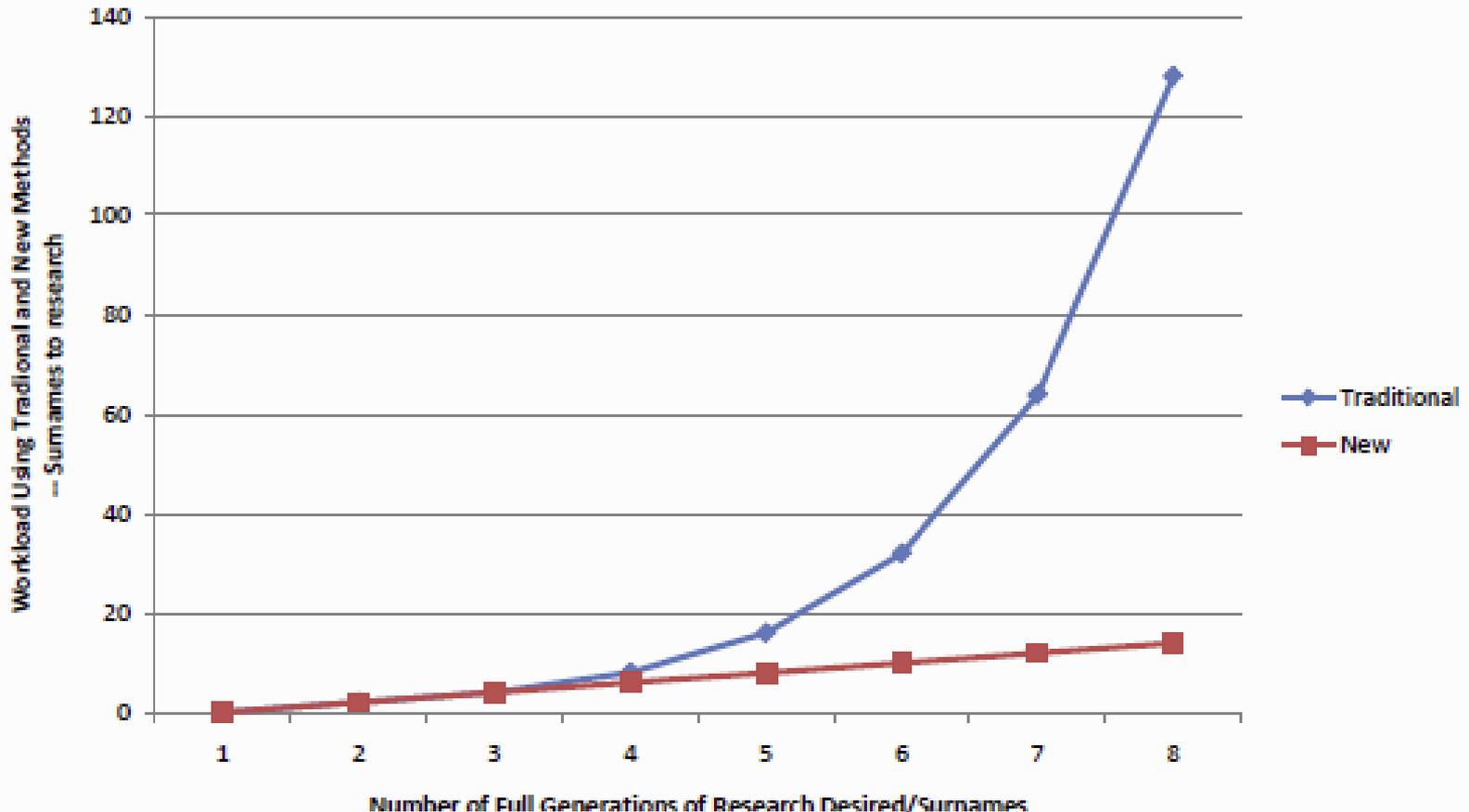
Explain the graph

Workload. It is obvious that there is a binary exponential increase in genealogy research workload as one goes back through family generations. Two parents become 4 grandparents, 8 grandparents, and so on. It appears to be impossible for one reasonably dedicated person to go back more than 5 generations in one lifetime of work. That is 32 surnames, and 64 actual ancestors. Our public records go back about 10 to 15 generations, so the 5 generations is a very minimal amount of work. How do we ever get our research to match the records available? For example, there are 32 times as many names and surnames if one goes back 10 generations – 1024 surnames and 2048 people. At 15 generations, there are 32,768 surnames and 65,536 people. That is 1024 times the 5-generation lifetime practical limit on research work. Who has 1024 lifetimes to spend on genealogy? If the process is changed to stop all wasteful duplication and gain maximum efficiency through cooperation, 10 generations of data are easier to complete than the 5 generations were before. The curve is flattened through a change in procedure.

Difficulty. As we go back in time, often the records that are available are harder to read and use, perhaps because of image quality, formatting, the minimal data recorded, the source language, etc. In many cases a researcher who has developed an expertise in a particular set of records can get more accurate data out of those records than can a novice. Those specialists can help everyone by converting those records into a more usable form.

Research Workload Comparison

Crossover at about 8 surnames (Great Grand Parents -- 3 gen. back)
(There are 1024 surnames at 10 generations back -- 128 times as much data)



Comparing time and effort, completing 10 generations of research the new way is about equal to doing 3 or 4 generations the old way.

Cooperation Versus Isolation in Genealogy Research

The 10 Generation Project

	Generations back	Surnames	Total names	Times more work to reach 10 gen	Lifetimes to complete <small>(at traditional speeds)</small>
	10	1024	2047	1	32
	9	512	1023	2	16
	8	256	511	4	8
Industrial strength cooperation is required to progress further.	7	128	255	8	4
Assemble high quality names 100s of times faster.	6	64	127	16	2
Possible to finish alone in one lifetime -- just a few generations.	5	32	63	32	1
	4	16	31	64	.5
	3	8	15	128	
	2	4	7	256	
	1	2	3	512	
	0	1	1	1024	

Cooperation Versus Isolation in Genealogy Research

Explain the graph above

The main feature of this graph is the dotted line between five generations of research work and 10 generations of research work.

If genealogy researchers work individually in isolation, as is typical with traditional methods, they can expect to spend an entire lifetime completing five generations of their pedigree. That is, they might find only 64 names (with 32 surnames) of their ancestors after expending perhaps 10,000 hours of effort

In contrast, with the new “industrial-strength” cooperation procedures, they should be able to establish 10 generations of their ancestors to a high quality level, and do it in far less than the 10,000 hours (5 years) required today. They would find 2048 ancestors with 1024 surnames, or 32 times the amount of data for just five generations.

At an estimated two hours per name doing research in descendant sequence, which is about 30 times faster than doing research in pedigree sequence, an individual might devote about 4,000 hours (2 years) to completing their part of the 10 generation process, rather than the 10,000 hours estimated for the traditional five generation process.

If everyone finished only five generations using the new process, each person might be able to finish their part in as little as 150 hours (one month).

Today's possible methods of cooperation

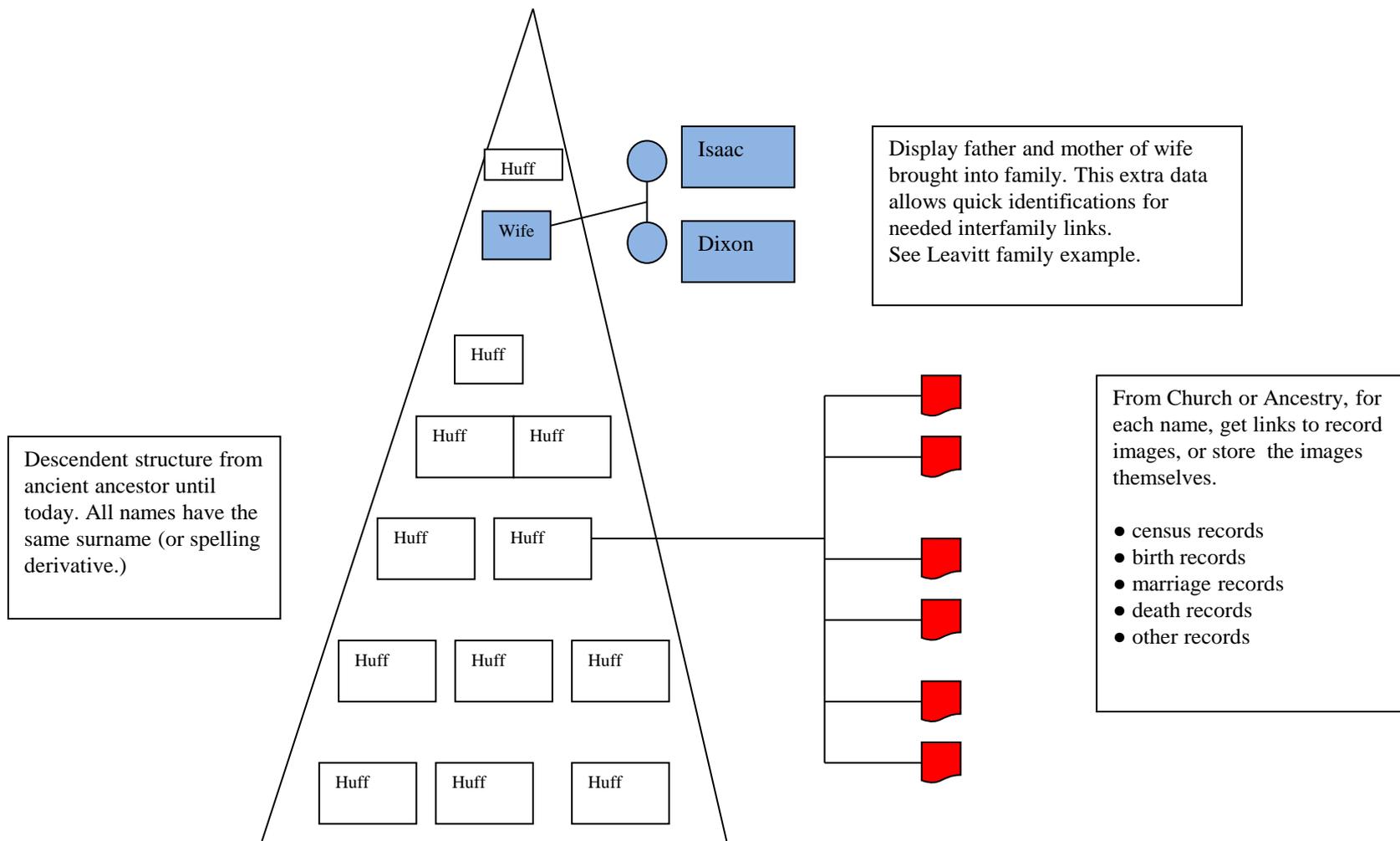
1. Put raw public records online (anonymous, uncoordinated activity).
2. Compile records into families and put online (anonymous, uncoordinated activity).
3. Search compiled families and online raw records (anonymous, uncoordinated activity).
(Many researchers today imagine that this is the highest possible form of cooperation.)

The next item does not exist and needs to be established:

4. Plan specific work to gain assistance and avoid duplication (synchronized, coordinated activity).

Offers up to 1,000 times overall productivity improvement.

Assemble 100 Million High Quality Names A Year Using Single-Surname Descendent Structures As The Cooperation Mechanism



The Suggested Strategy and Procedure

1. Research and recording of results is done in descendent sequence because that is at least 30 times faster than the typical pedigree-sequence way of finding and recording data. Some people have managed to make their process up to 200 times more efficient than traditional methods, as, for example, when they take an entire city and lineage-link all of the families and intermarriages, using all available records.

The descendent structure is built with or without the use of Church or Ancestry data, and then the data is made verifiable by using Church and Ancestry online data to link all appropriate public records to each name and event. The data held by the Church and Ancestry totals perhaps 10 billion record entries, which will document perhaps only 1 billion people, assuming multiple records exist per individual.

The data of the Church and Ancestry is exhausted, or used up once, when large portions of that data are connected to the genealogical structure in a high-quality database. With all public records linked to each appropriate unique name, the data is "finished" to the extent that one can do using public records. After that, family members can add pictures, stories, etc. – items which are not typically found in public records.

Completing the basic descendent structure is sufficient, but it is helpful to include the parents of the wife drawn from another family, where possible. That will make possible very quick linking together of descendent structures to construct pedigrees. See the Leavitt family website for an example.

The Strategy and Procedure (continued)

2. In step 1 above, a researcher can clearly see and experience the efficiency of gathering data and recording it in the descendent mode described above. The second step, where all of these descendent structures are linked together to form pedigrees, is not so obvious, but it is magical when researchers reach that point and can take immediate advantage of the work of all other participants. They can almost immediately receive a 1000 times increase in the overall efficiency in assembling of their desired pedigree, simply because all the necessary names are ready for their use, as they connect the families together through the women. A 10-generation pedigree thus becomes far easier to do than creating a 5-generation pedigree using today's rules, even though the 10-generation pedigree contains 32 times as many names.

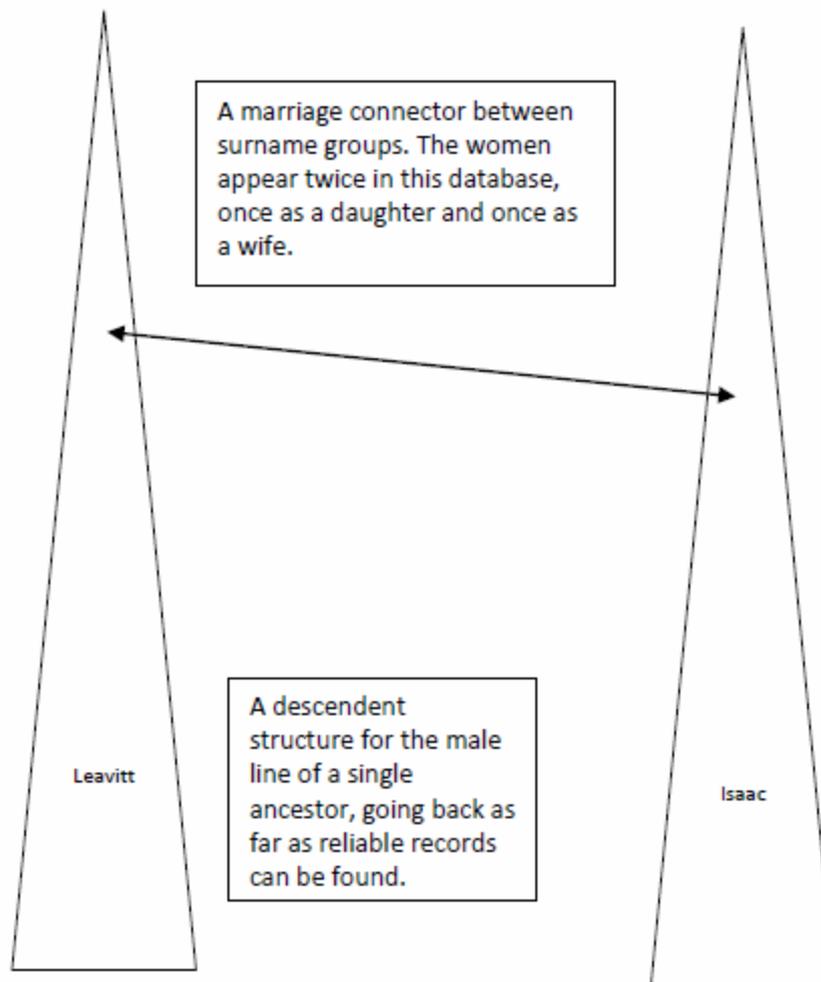
Symbols used on next two Database Organization Graphs

1

A single person, unconnected to other family members

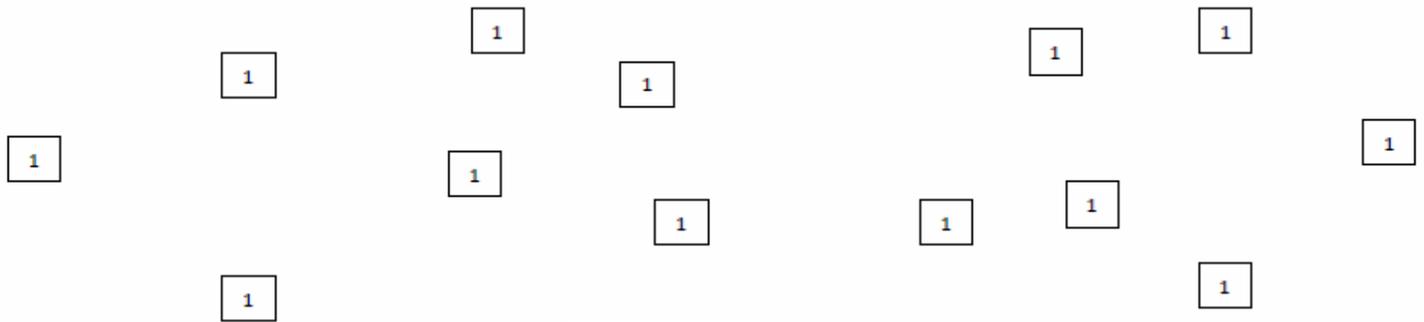


A full 5-generation pedigree, plus one surname line extended further back.

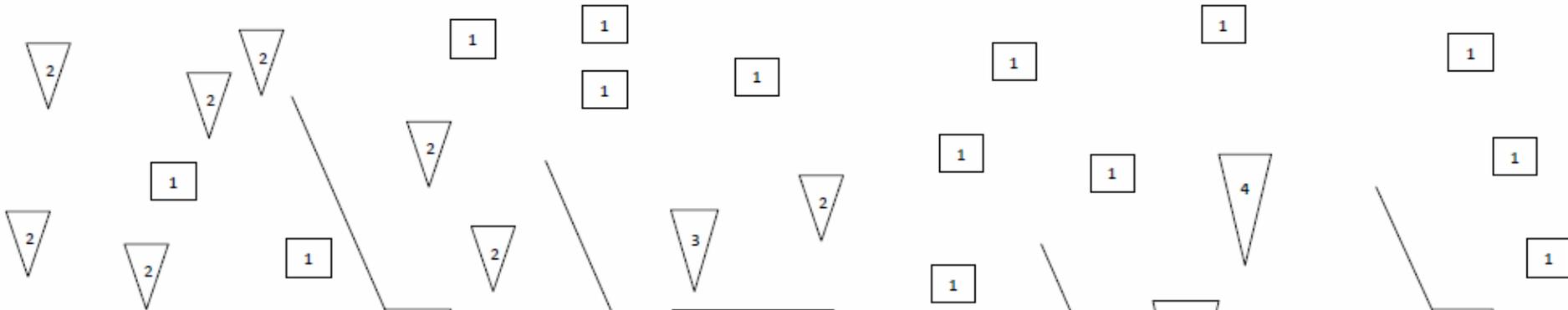


(Assumed) Current Church Database Organization

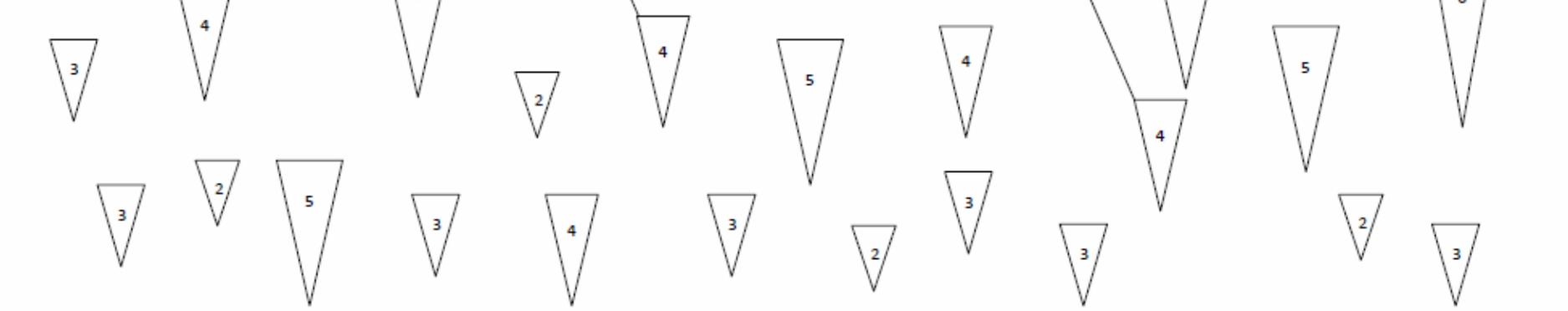
15 Generations



10 Generations



5 Generations



(Assumed) Current Church Database Organization

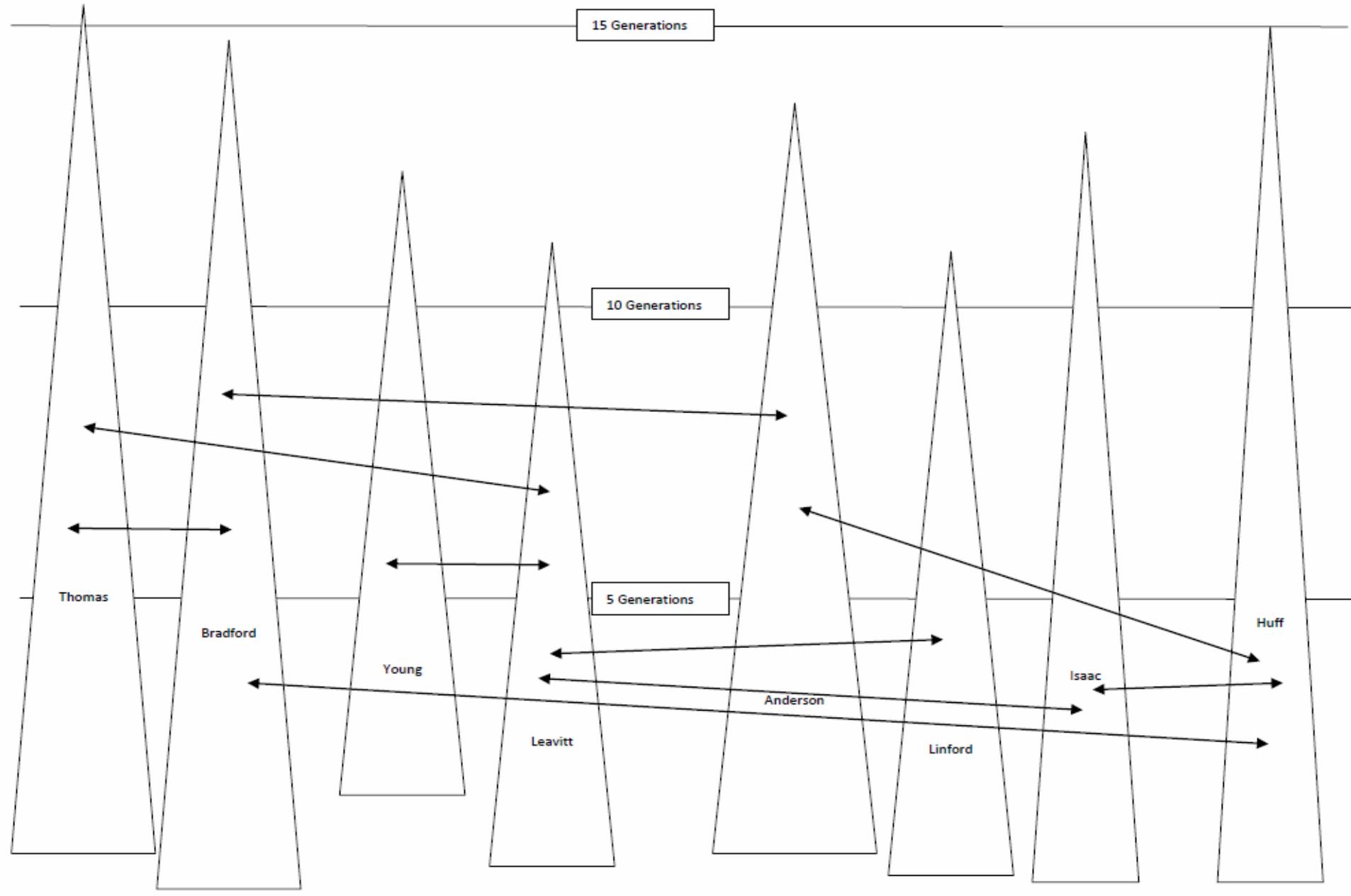
Explain the graph above

I do not have access to detailed statistics on the internal structure of the current LDS Church database, but based on a review of all the assumptions and practices I am aware of, including the practical limit on completing five generations in a lifetime of work using traditional methods, this is what the database is likely to look like. There are likely to be numerous five-generation pedigrees, with a very small number of 6-generation pedigrees, and quite a large number of 2, 3, and 4 generation pedigrees. There is also a great deal of duplication, meaning that many of these pedigrees overlap again and again, probably reaching an average duplication rate of about 30. It is not difficult to find a name duplicated 200 times in the database, and a few names are duplicated 10,000 times in this database.

There are also very large numbers of names which were submitted for ordinance work without any connection to other individuals. The records in the database which are shown as “a square with 1 in it” represent those “floating” records. Because of the continuing pressing need for names to support temple ordinance work and worship, I believe that the number of names submitted for temple ordinance work may represent up to 10 times the number of names which are submitted which are connected into multi-generational family groups.

In the ideal case which I am suggesting, every name in the new database would be unduplicated, and would appear in multi-generational family structures 5 to 15 generations deep.

Desired Future Database Organization



Desired Future Church Database Organization

For efficiency and quality purposes, it is highly desirable that the new database be assembled and stored in descendent sequence. (It can also be presented in pedigree sequence.) This new assembly process gets rid of all the duplication and assures that no names are missed. The descendent family structures (or surname groups) are first created intact, and then links are made among all of the surname groups based on the names of the women. They appear once as a daughter in one surname group, and again as a wife in another surname group. With all these connections made between women in their duplicate roles, then all possible pedigrees can be read out from the database. In summary then, the data is entered in descendent sequence because of the great superiority in efficiency, and then, at the end, the desired pedigrees all become available.

Causes and Cures of Duplication in Genealogy Research

The current Church genealogy system fosters duplication on a very large scale from several sources:

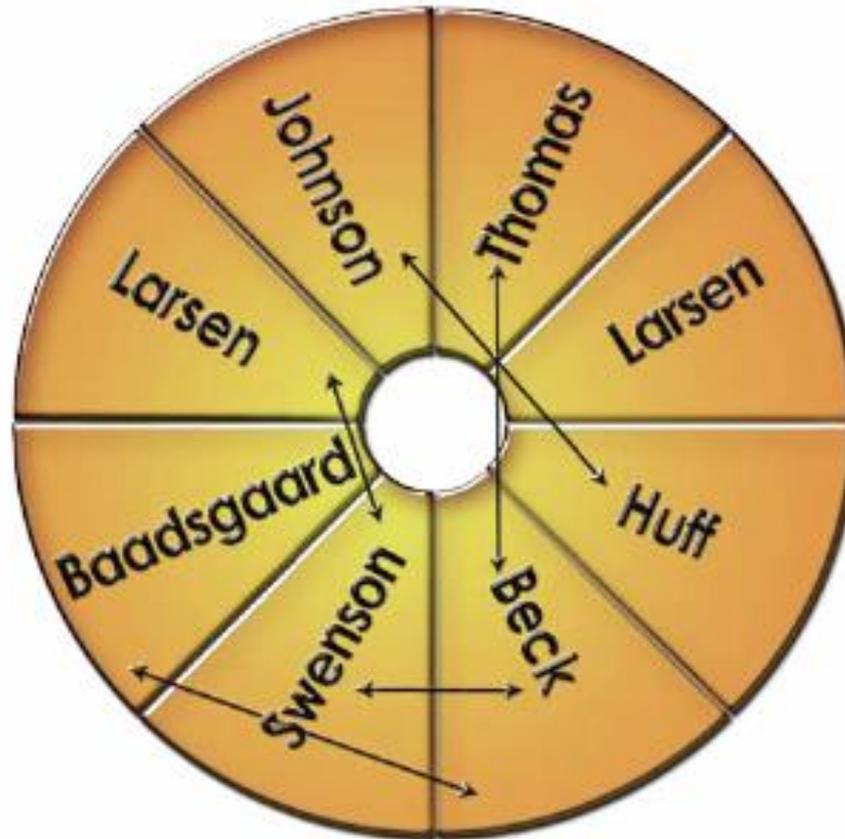
1. The name of a single unique person may appear in a dozen public records, as in the case of multiple censuses, birth, and marriage, death, land, etc. Without proper prior synchronization, all these appearances are likely to be treated as different people for temple processing purposes.
2. Many people may be researching the same set of names at the same time, but they are unaware of each other's efforts, so there is a large amount of unnecessary duplicate research, and unnecessary registering of duplicate results.
3. Sometimes people simply submit names to the temple "just to be sure" that the names have been processed correctly. This also may happen when people are anxious to have names to use in the temples, but do not have time enough to do original research, so they simply reuse names which have been processed before.

More on case number 2 – Duplicate research effort – because researchers can't coordinate or cooperate:

I think it often happens that people do a few generations of research, perhaps somewhere between three and five generations back, since they may have personal access to much of that data, often through living relatives. However, when they want to go further back in time, they might then seek to get data from the work of other people. However, if almost everyone limits their personal original research to somewhere between three and five generations, then almost no one will have data going back further which will be of much value to anyone else. In general, it is very hard to cooperate with anyone else on pedigree-sequence research, since each researcher may have up to 32 surnames to be followed, with a different set of surnames for each individual researcher, and it is difficult to locate someone who is actively working on the same surname line who might be willing to cooperate.

In contrast, descendent-sequence research can often be done with the help of cousins, those people who have the same surname and a common ancestor with that surname. All of the descendents of this particular ancestor with their surname might have some interest in that particular ancient person and in their cousins, identified by the same surname. This should offer a natural opportunity for a group of cousins to form some kind of family organization to expand their genealogy research. Notice that all the massive duplication which is typical of the pedigree-sequence research method completely disappears in the descendent-sequence research method.

Database Diagram



Single-surname descendent structures connected together through marriages.

Current System Performance

Goal or Need	Total names processed per year
Digitize microfilm each year (Acceptable rate)	500 million
Capture new images – “born digital” each year (Unacceptable rate) (Process will take 500 years at current rates.) (Needs to be 5 billion per year for about 10 years.)	100 million
Indexing of digitized records each year (Acceptable rate)	500 million
Names required for temple use each year	10 million
Member assembly of unique new names per year. About 300,000 members are engaged in this process. (This very low productivity is not acceptable.) (Assume 9 million duplicate or unresearched names are used yearly to fill up the 10 million names needed.)	1 million

Sample staffing arrangements and expected results

Goal or Need	Participants (FTE)	Names input by each participant	Time period	Total names prepared
Augment regular member submissions	1,000 (up to 10,000 parttime)	5,000 per year	1 year	5 million per year
Fully meet member submission requirements	2,000 (up to 20,000 parttime)	5,000 per year	1 year	10 million per year
Keep up with other LDS name-preparation operations – digitizing, Online Indexing	20,000 (up to 200,000 parttime)	5,000 per year	1 year	100 million per year (use up 500 million input records assuming multiple records per name)
Finish the United States quickly, using Online Indexing people	150,000	500 names total	2 months total	75 million (all who died in the U.S. before 1930)
Finish the United States even faster using all active LDS genealogists	300,000	250 names total	1 month total	75 million (all who died in the U.S. before 1930)
Finish the United States even faster using all active US genealogists	4 million	18 names total	2 weeks total (allow generous 4 hours per name)	75 million (all who died in the U.S. before 1930)

Genealogy Specialists vs. Everybody Doing The Work

I assume that the Church leaders would like everyone to get involved in the genealogy process so that they can feel they have done their part to fulfill the scriptural mandate. I can understand it if Church leaders feel that having a small group of specialists do the work for everyone else is not appropriate from the religious duty standpoint, even though it may be 100s of times faster and more efficient to work as specialists.

However, I see no reason why all Church members who are in a position to do this kind of work (only about 300,000?) should not become specialists, as with the Online Indexing program. In this suggested plan, everyone is assigned to do their own surname line, with the help of their cousins, so it is hard to see any strong objections to this kind of specialization.

2. Development History/Developer's History

Developer

I have spent much of my life working on very large computer systems – telephone systems, airline systems, US Treasury systems, railroad systems, US State Department systems, etc. I also have 2 law degrees and worked as a government attorney.

System development history

As a concerned Church member, I have thought about the genealogy data processing problem for 30 years. After working in the computer industry for 20 years, when I tried to do some genealogy research, I decided the process was so inefficient that I should spend my time trying to find a better solution. Since 2000 I have devoted most of my time to studying the problem and the solution. I have developed 6 different versions of the concept and related computer system. I have watched the Church efforts since the beginning with the 1999 launch of familysearch.org. For many years I tried occasionally to share my findings with the Church technical staff, but until recent years, I could not find anyone who would speak with me who actually understood computer system design principles. When I finally did find someone, of course they had a plan of their own in mind. In spite of the large amount of effort and expense devoted to the current Church genealogy computer solution, I believe it is still at least 100 times less efficient than it could be and ought to be. I hope I can help improve this situation.

3. What is the level of Church interest in improvement of data quality and quantity?

1. A long history of low quality and low quantity of data

It appears to me that for a very long time the Church has had to accept lower quality genealogical data than it would like, and also accept lower quantities of finished data than it would like.

2. The latest improvement efforts

Recently, the Church has invested a huge amount of time, money, and effort in a particular solution, which still seems to fall short of the highest practical standard for quality and quantity. In my professional opinion, it is mathematically impossible for the current system to be incrementally improved to an acceptable level. The process needs to begin with a different concept, which, by design, eliminates all important quality and quantity problems, including the many kinds of duplication which now occur.

3. The level of commitment to making changes?

What is the Church's level of commitment to making changes necessary to reach a high "temple standard" for data -- quality and quantity -- just as building contractors must meet a very high "temple standard" for physical construction? Much better quality and quantity can be achieved with much less expense and effort, so there is no obvious practical downside to making the changes.

4. The Next Step? Procedure Verification and Validation?

To increase institutional confidence in suggested procedures, do a series of brief studies:

1. Survey some genealogists on their pedigree-sequence and descendent-sequence research experience. Attempt to quantify time spent and names found and verified.
2. Examine a sampling of the nearly 1 million books containing descendent studies of families. (About 60,000 of these books have been digitized.) Estimate the number of names which can be used in the new database and the time required to make the transfer and do the verification and source record documentation. See books.familysearch.org. (Up to 1 billion names might be documented in these volumes.)
3. Begin a small trial database using the new rules for a descendent database. Check efficiencies and connectivity among participants' contributed data products.

5. A Complete Solution to Church Genealogy Goals. The Solution Can Be Free.

1. Construct a high quality genealogy database for US and Europe, going back 10 – 15 generations, including all people who died before 1930. Add a minimum of 150 million unique individuals to the database. (3-year project)
2. Introduce data into the \$84 billion annual worldwide market for genealogy data. Collect \$3 billion in revenue. LDS members have the same ancestors as everyone else, and many of these others will pay for data, perhaps \$6 per name.
3. Fund acquisition of all genealogy source records not yet digitized and collected, insuring that these records will not be lost.
Capture 50 billion records at 3 cents each = \$1.5 billion total cost.
Use commercial assistance. Complete process within 10 years.
4. Continue image- and name-processing operations. Finish 100 million unique names a year, with 1 billion names completed every 10 years.
(Assume only 10 million names are needed each year for temple use.)
(Use up 500 million public source records each year, relating multiple source records to each of 100 million unique persons).

Note on Professional Genealogists and Planning

1. New documents online are OK, but new efficiencies in name-assembly are not OK.

It appears that most professional genealogists have their own unique viewpoint on Church involvement in genealogy processes. They are happy to have the huge number of public documents made available to them for free through Church efforts. But many of them would actively resist setting up the rest of the suggested highly efficient and comprehensive approach to genealogical document and name-assembly processing. They would prefer to keep things as they are, where genealogical research is very slow and difficult, and they can justify charging large fees for their specialized work. But of course, the low volume, high cost solution they can supply is entirely inadequate for Church purposes.

2. Give data as \$3 billion gift, or capture all the world's source documents.

On the other hand, if the Church goes ahead and creates this high quality, high volume, relatively low-cost database, and makes it free to the world, these same professional genealogists will most likely find a way to take that data and market it to clients for the full \$3 billion value I have estimated. In other words, the money will simply go into their pockets instead of being used to capture the rest of the world's genealogy source records before they are lost or damaged. This would be a great loss to the Church and to the world. Perhaps at least some of the professional genealogists will come to understand the need to act in this way. (This assumes that the Church would be either unwilling or unable to spend at least \$3 billion on genealogy processes and then make it all a gift to the world, with major benefits going mostly to professional genealogists.)

The End

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