JULIANS 8 BY 8 STUDY JULY 2023

This study was undertaken to explore whether Bob Leuzarder's recently discovered Y DNA match with Ernest Lloyd Luzadder can be linked to shared Baruch Lousada ancestry. The Y DNA haplotype shared by Bob and Ernest Lloyd was R, and thus was not the E haplotype of the Baruch Lousadas. However, the linkage could be associated with shared Baruch Lousada ancestry via a female line.

While our earlier studies pointed to Bob Leuzarder having Baruch Lousada ancestry, we wanted to see whether this applied to Ernest Lloyd. We therefore examined the autosomal matches of a sample of 8 probable/possible Baruch Lousada descendants. This sample was constructed by deleting Michael Waas from our previous study of 7 relatives, and then adding Bob and Ernest Lloyd. Michael Waas is a relative by marriage (involving the Israel Pereiras and perhaps the Lopes Pereiras) and showed little genetic connection with us.

Our sample of 8 then generated 298 autosomal matches after each sample member was compared with the other 7. I used GEDmatch set at 3cM segment size which is less than the default 7cM. This segment size generates a majority of false positives, so a cautious approach is adopted in drawing conclusions. Thus, following the method pioneered by my 7th cousin John Griffiths, I looked for the potentially interesting multiple overlapping segments.

Of the 298 individual matches, 130 do not overlap other matches but 168 do. (Last time with 133 individual matches 76 did not overlap but 57 did.) Our initial classification of these overlapping cases is:

- 2 overlapping matches - 39
- 3 overlapping matches - 20
- 4 overlapping matches - 2
- 5 overlapping matches - 2
- 6 overlapping matches - 2

Once we remove the inconclusive matches we will be left with a subset showing a probability of Baruch Lousada ancestry. As before we can first delete the 24 weak triplets – which are 2-segment matches where a person matches 2 others who do not match each other. Of the remaining 15 2-segment matches, they all could be 2 overlapping false positives and we delete them. This leaves 26 potentially interesting multiple matches.

To assess these multiples, we need to remember our previous experience. There for comparison we looked at multiple matches generated from an equivalent sample of random people. From this we learnt that many types of unlikely-looking multiple matches can arise at random. Thus, for example, both types of strong triple can occur at random (unlikely though this might seem) and by themselves are not conclusive of our target ancestry.

Let us next review the 20 3-segment matches. 12 of them are weak triples with an overlapping possible false positive while 5 of them are 2 linked weak triples. We consider these are indistinguishable from random occurrences. Of the remaining 3 3-segment matches, one is of 3 overlapping unmatched pairs and again we deem this random. Accordingly of these we deem only the Cr2 and Cr12 matches to be interesting. Thus we have 8 interesting multiple matches – these 2 plus the higher matches. Attachment 1 shows them and the individuals appearing in them.

DISCUSSION OF THE 8 INTERESTING CASES

Last time, in our sample of 7, the 23 multiple matches yielded only 8 interesting cases. Here, from 65 multiple matches we still only generate 8 interesting cases. These are set out in Attachment 1. In the previous study, only 2 ultimately emerged as useful – the Cr2 and the Cr 8 matches. As discussed in Attachment 1 these 2 matches are enhanced in this study as part of which we used Q-match to review the quality of the individual component matches.

Of the remaining 6 matches (on Cr 2 – different from the Cr2 match referred to above, 6, 12, 13, 18, and 21) – 2 of them on Cr 2 and Cr 12 are unadorned strong triples in which Bob or Ernest Lloyd respectively match 3 other 3 people. Because false positives certainly play a role in our analysis, both these matches are uncertain (though the Cr12 match is interesting for another reason as explained in Attachment 4). Of the final 4 matches – on Cr 6, Cr13, Cr18 and Cr 21 – Ernest Lloyd appears in the Cr 6 and Cr13 matches but with only one link in each case which could be a false positive. Of these final 4 multiples, aided by Q-match (see Attachment 4), we regard only the Cr21 quintuple as useful.

Where Q-match shone for us was in identifying a useful new multiple on Cr5 as explained in Attachment 4. That is, while the new Cr5 multiple at 79-82m does not appear in Attachment 1 for all we found was a weak triple at this site with coincident Jeannine/Bob and Jeannine/Ed matches. Now with Cr5 enhanced and restored we have 4 useful Lousada indicators on Cr2, Cr5, Cr8 and Cr21. Exactly what predictive or discriminatory powers these indicators have is unclear – for example, we know from our work elsewhere that some of us have matches with Randy Schoenberg's family on at least one of these 4 indicators – and thus the guidelines for the valid use of the 4 Lousada indicators need to be established.

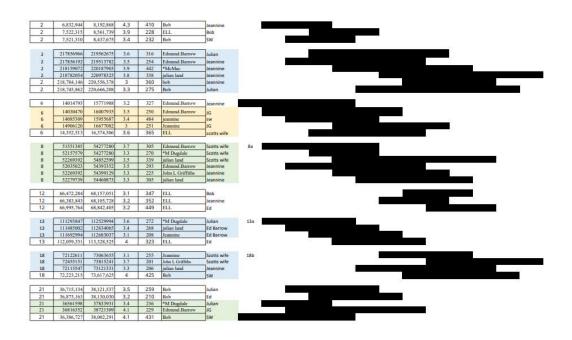Ernest Lloyd does not have any of these Lousada indicators as follows:

1. Cr2 at 218-220m as do 5 people but not John or Mike;
2. Cr5 at 79-82m as do 4 people but not Julian, John or Mike;
3. Cr8 at 52-54m as do 5 or 6 people but not Bob and perhaps John; and
4. Cr21 at 36-38m as do 6 people but not Jeannine.

Thus contrasting with the 0 total appearances of Ernest Lloyd, we find that Julian has 3, John 1 or 2, Scott's wife 4, Bob 3, Jeannine 3, Mike 2 and Ed 4. For completeness we add that though the Cr13 match only survives Q-match in suspect form (see Attachment 4) and thus we don't include it with the other 4 indicator matches on Cr2, 5, 8 or 21, Ernest Lloyd's match at Cr13 did not survive Q-match scrutiny anyway – that is, it was probably a false positive as we suggest above.

The total match comparison in Attachment 2 shows that Ernest Lloyd has a weak attachment to the remaining 7 of this Baruch Lousada sample. In Attachment 3 we review how many times Ernest Lloyd appears in Baruch Lousada matches. We note that he is the weakest at forming matches within the Baruch Lousada relatives' group.

In general, the matches involving Ernest Lloyd show no sign of Baruch Lousada ancestry. In Attachment 4 we consider with the help of Q-match the single matches which Ernest Lloyd has with the Lousada relatives, together with his Cr12 strong triple with Bob, Jeannine and Ed. There we will see some non-Lousada connections that might be revealed with genealogical work.

W J Land

THE 8 INTERESTING CASES IN THIS 8 BY 8 STUDY

2	6,832,944	8,192,868	4.3	410	Bob	Jeannine	
2	7,522,315	8,561,739	3.9	228	ELL	Bob	
2	7,521,310	8,437,675	3.4	232	Bob	SW	
2	217856966	219562675	3.6	316	Edmund.Barrow	Julian	
2	217856192	219513782	3.5	254	Edmund.Barrow	Jeannine	
2	218159072	220187903	3.9	442	*McMac	Jeannine	
2	218782054	220978325	3.8	338	julian land	Jeannine	
2	218,784,146	220,556,378	3	360	bob	Jeannine	
2	218,745,862	220,666,208	3.3	275	Bob	Julian	
6	14014793	15771988	3.2	327	Edmund.Barrow	Jeannine	
6	14030470	16007935	3.5	250	Edmund.Barrow	JG	
6	14085309	15955687	3.4	484	jeannine	sw	
6	14906120	16677082	3	251	Jeannine	JG	
6	14,352,513	16,374,506	3.6	365	ELL	scotts wife	
8	51551385	54277280	3.7	305	Edmund.Barrow	Scotts wife	8a
8	52157579	54277280	3.3	270	*M Dugdale	Scotts wife	
8	52269392	54852599	3.5	339	julian land	Scotts wife	
8	52035023	54393352	3.5	293	Edmund.Barrow	Jeannine	
8	52269392	54399129	3.3	225	John L Griffiths	Jeannine	
8	52279739	54460873	3.3	305	julian land	Jeannine	
12	66,472,284	68,157,051	3.1	347	ELL	Bob	
12	66,383,843	68,105,728	3.2	352	ELL	Jeannine	
12	66,995,764	68,842,405	3.2	449	ELL	Ed	
13	111293847	112529994	3.6	272	*M Dugdale	Julian	13a
13	111485002	112634065	3.4	268	julian land	Ed Barrow	
13	116192994	112683037	3.1	208	Jeannine	Ed Barrow	
13	112,059,331	113,328,525	4	323	ELL	Ed	
18	72122611	73063655	3.1	255	Jeannine	Scotts wife	18b
18	72455151	73815241	3.7	201	John L Griffiths	Scotts wife	
18	72115547	73121331	3.3	206	julian land	Jeannine	
18	72,223,215	73,617,625	4	425	Bob	SW	
21	36,715,134	38,121,537	3.5	259	Bob	Julian	
21	36,873,163	38,130,030	3.2	210	Bob	Ed	
21	36561598	37833931	3.4	236	*M Dugdale	Julian	
21	36816352	38721309	4.1	229	Edmund.Barrow	JG	
21	36,386,727	38,002,291	4.1	431	Bob	SW	

The number of individuals in these interesting matches is 4, 5, 5, 6, 4, 5, 5, and 6. Ernest Lloyd appears in 4 of them, and Bob 5. After our analysis, this contrast effectively increases. In the chart, Ernest Lloyd has 6 occurrences in 4 multiple matches, but Jeannine has 15 in 7, Scott's wife 11 in 6, and Ed Barrow 12 in 6, Bob 10 in 5, Julian 9 in 5, John Griffiths 5 in 5, and Mike Dugdale 3 in 3 – averaging 9.3 in 5.3. Ernest Lloyd's occurrences mean 6 links – 2 to Bob, 2 to Ed, 1 to Jeannine and 1 to Scott's wife – 3 of which are in the Cr12 strong triple, but false positives are probably present.

Our 7 by 7 study 2 years ago discovered the extremely unlikely segment boundary coincidence on Cr8 at position 52269392 (where 4 different people share the same genetic event). This seemed too unlikely to be chance. Now we find an additional (Jeannine/Julian) match overlapping at the Cr8 site and with the astonishing 52269392 coincidence left unchanged. However, the additional match is somewhat puzzling, and because GEDmatch analytics seem fluid (see below), we used Q-match (see Attachment 4) to clarify the position. From this we can see that though the additional match is not called real, at lower precision it survives (amazingly with the coincident lower bound) hence largely removing the puzzle. For while the Jeannine/JG match is similarly not called real at lower precision it is (though the lower bound is slightly different). Furthermore, Q-match called a new match real – Jeannine/Scott's wife. We thus have a total of 7 overlapping matches which are now more tightly connected. Our remarkable coincidence cannot be exactly retrieved but we have more confidence that these matches are not false positives and that the Cr8 multiple remains of interest.

We also identified the common segment on Cr2 as being of interest. Bob was not included as a possible Baruch Lousada descendant in the earlier study. Now, as we show above, he has 2 overlaps

on the Cr2 multiple which now contains 2 strong triples and a quadruple match (Jeannine). Using Q-match (see Attachment 4), we can fully reproduce the 6 elements of this multiple and thus this Cr2 multiple looks stronger.

The drastic improvement GEDmatch has made in its analytics in the last 2 years is apparent in all this. See the table below, where it will be seen that matches between relatives are now recognised much better – to show this we applied the new analytics in re-working the 2021 data. The result (shown in the 1st pair of rows) was that the original sample of 7 relatives generates 66% more matches, and the corresponding random sample of 7 only 41% more matches. Further, between 2021 and 2023 the table shows that the incidence of multiples increases with relatives producing proportionately more (2nd pair of rows). To refine this, we removed Ernest Lloyd Luzadder (ELL) from both relatives and random samples. This removes the complication of increased sample size (from 7 to 8) and increases the contrast in growth of number of multiples (see 3rd pair of rows). Also contributing to the growth is the swap between the 2021 and 2023 samples of Bob for MW – for the former is now known to be a relative and MW is known not to be a relative. To explore the effect of this swap, we looked at the 6 core relatives (Julian, Jeannine, Ed, John, Mike and Scott's wife) using both 2021 and 2023 analytics. This result is shown in the 4th pair of rows.

	2021 GEDmatch analytics		2023 GEDmatch analytics		Comparison 2021 and 2023	
	matches #	multiples #	matches #	multiples #	change in # matches	increase of multiples
7 2021 relatives incl. MW	133	23	221	na	up 66%	
7 2021 randoms incl. RAL	148	23	209	na	up 41%	
8 2023 relatives	na	na	298	65		up 2.8 times
8 2023 randoms	na	na	275	52		up 2.3 times
7 2023 relatives no ELL	na	na	241	48		up 2.1 times
7 2023 randoms no ELL	na	na	230	31		up 1.3 times
6 core relatives	103	17	171	34	up 66%	up 2 times
6 core randoms	118	13	150	18	up 27%	up 1.4 times

growth in matches

growth in multiples

matches growth 6 core members

multiples growth 6 core members

Compared with random, the increase of family matches and multiples generated by the new analytics is clearly evident in our analysis. The general improvement in family match recognition has another outcome – the number of matches in the family sample no longer lags the number of matches in the random sample (see 1st pair of rows). So now our new total of 241 family matches (in the 3rd pair of rows) exceeds (by 11) the random sample total of 230 matches. It seems we can now see a weak signal from family connections amongst the random noise – here these 11 matches are just 5% of total matches! This suggests we should only find a few interesting multiple matches!

GEDmatch was asked by us to confirm that their analytics had changed. This was duly confirmed, but GEDmatch went on to recommend their new technology Q-match when working with small segments as we are. Our adventures with Q-match are shown in Attachment 4.

ATTACHMENT 2

COMPARISON OF THE TOTAL SEGMENT MATCHES

7 BARUCH LOUSADA RELATIVES PLUS ERNEST LLOYD

	Julian	John	Scotts wife	Bob	Jeannine	Mike	Ed	Ernest Lloyd	Average cM
Julian		17.3	46.7	48.4	64.6	32.4	38.3	20.3	38.3
John	17.3		45.6	37.9	41.2	34	36	28	34.3
Scotts wife	46.7	45.6		42.4	73.6	26.5	17.3	20.7	39
Bob	48.4	37.9	42.4		44.4	40.2	45.9	32.2	41.6
Jeannine	64.6	41.2	73.6	44.4		49	39.7	42	50.6
Mike	32.4	34	26.5	40.2	49		24.8	22.5	32.8
Ed	38.3	36	17.3	45.9	39.7	24.8		37.4	34.2
Ernest Lloyd	20.3	28	20.7	32.2	42	22.5	37.4		29
Average cM	38.3	34.3	39	41.6	50.6	32.8	34.2	29	37.5

(yellow)	Ernest Lloyd lowest
(green)	Ernest Lloyd 2nd lowest
(peach)	Ernest Lloyd 3rd lowest
(blue)	Ernest Lloyd has middle ranking

Above, the Baruch Lousada group of relatives appears quite homogeneous, with Ernest Lloyd a somewhat awkward addition. He shows the weakest pattern of individual matches and while someone must be in the bottom position, Ernest Lloyd's pattern is very weak. His average total match of 29cM is below the sample mean of 37.5cM by a statistically quite significant margin (the standard deviation = 6.6cM), while he shows a somewhat stronger pattern of matches in comparison with a random sample (see below)!

7 RANDOM PEOPLE PLUS ERNEST LLOYD

Here Ernest Lloyd no longer has the lowest total and further, though he has the same number (5) of bottom-2 matches, his other 2 individual rankings are top 2 results. In this sample, standard deviation = 17.5cM, so here Ernest Lloyd lies relatively much closer to the sample mean.

	Corally	Nichole	Alison	HarryP	Jaimar	Sylvia	MW	ELL	Average cM
Corally		21	17.7	15.7	17.5	14	7	19.3	16.0
Nichole	21		20.8	37.1	25.1	38.7	28	19.3	27.1
Alison	17.7	20.8		115.7	74.9	20.2	102.9	19.1	53.0
HarryP	15.7	37.1	115.7		128.7	40.3	71.5	26.8	62.3
Jaimar	17.5	25.1	74.9	128.7		29.9	94.3	16.5	55.3
Sylvia	14	38.7	20.2	40.3	29.9		28.6	39.5	30.2
MW	7	28	102.9	71.5	94.3	28.6		19.9	50.3
ELL	19.3	19.3	19.1	26.8	16.5	39.5	19.9		22.9
Average cM	16.0	27.1	53.0	62.3	55.3	30.2	50.3	22.9	39.6

(yellow)	Ernest Lloyd lowest
(green)	Ernest Lloyd 2nd lowest
(red)	Ernest Lloyd 2nd highest

ATTACHMENT 3

OCCURRENCES OF PEOPLE IN THE MATCHES

ERNEST LLOYD WITH 7 BARUCH LOUSADA RELATIVES

Occurrences		Julian %	John %	Scotts wife %	Bob %	Jeannine %	Mike %	Ed %	Ernest Lloyd %
All	596	12.6	11.7	13.8	13.3	17.1	10.9	11.2	9.4
No overlaps	260	11.9	15	15.4	11.2	16.2	11.5	10.4	8.5
Overlaps total	336	13.1	9.2	12.5	14.9	17.9	10.4	11.9	10.1
2 overlaps	156	14.7	9.6	13.5	14.7	19.2	7.7	9.6	10.9
3 overlaps	120	9.2	9.2	9.2	17.5	14.2	16.7	11.7	12.5
4 overlaps	16	18.8	6.2	18.8	6.2	18.8	6.2	18.8	6.2
5 overlaps	20	10	15	15	15	15	5	20	5
6 overlaps	24	20.8	4.2	16.7	8.3	29.2	4.2	16.7	0

    =   Above pro-rata 12.5%

Here Ernest Lloyd has the smallest total occurrence and does not exceed pro-rata in any category of overlapping match.

ERNEST LLOYD WITH 7 RANDOM PEOPLE

Perhaps reflecting the absence of probable relatives, we see below that 6 more matches don't overlap with others, and there are 29 fewer overlaps (51% of all matches cf 55% above). But Ernest Lloyd is no longer the weakest in his total appearance in all matches, he is even lower in matches not overlapping, and he is over-represented in several categories of overlapping matches.

Occurrences		Corally %	Nichole %	Alison %	HarryP %	Jaimar %	Sylvia %	MW %	Ernest Lloyd %
All	550	5.8	9.6	14.9	18.5	16.5	10.5	15.6	8.4
No overlaps	272	7.4	10.3	15.1	19.9	16.9	9.2	17.3	4.0
Overlaps total	278	4.3	9.0	14.7	17.3	16.2	11.9	14.0	12.6
2 overlaps	132	3.0	4.5	17.4	20.5	18.2	10.6	13.6	12.1
3 overlaps	54	5.6	13.0	16.7	14.8	7.4	14.8	11.1	16.7
4 overlaps	56	3.6	14.3	8.9	16.1	17.9	10.7	17.9	10.7
5 overlaps	10	0.0	10.0	20.0	10.0	10.0	10.0	30.0	10.0
6 overlaps	12	8.3	0.0	0.0	25.0	16.7	25.0	0.0	25.0
7 overlaps	14	14.3	21.4	14.3	0.0	28.6	7.1	14.3	0.0

ATTACHMENT 4

OUR ADVENTURES WITH Q-MATCH

Q-match analysis is recommended by GEDmatch for use with small segments like ours. Q-match aims to better distinguish small (eg 200 SNP) matches, and thus perhaps convert some apparent false positives into genuine family matches. We find Q-match:

1. Wholly reproduces the key Cr2 multiple;
2. On balance improves the Cr8 multiple now showing 7 highly-connected overlapping matches, a coincident cutoff, while also reflecting the amazing coincident lower cutoff - thus leaving this Cr8 multiple as a key one;
3. Confirms the other Cr2 multiple should have been ruled out;
4. Supports the Cr21 multiple, contrasting with those on Cr6 and Cr18 which disappeared, and with that on Cr13 which remained suspect as 2 linked weak triples;
5. To the pre-existing weak triple on Cr5 which we earlier rejected, Q-match adds – initially above 3cM - a Bob/Ed match not previously recognised, and then below 3cM it found a Jeannine/Scott's wife match. This Cr5 multiple now includes a strong triple and a coincident cut-off and appears significant;
6. Points out strong matches in a doubtful multiple match on Cr10 (two strong matches from it are shown in the following chart); and
7. The previously rejected interesting Cr12 strong triple is discussed below but not as a Lousada family match. Two of its matches are shown below.

That is, Q-match modifies but sharpens our previous conclusions. But the Q-scores themselves do not help us much in answering the question as to whether or not Ernest Lloyd has Lousada ancestry, for the following table of the highest Q-scores for each pair match shows no obvious distinction:

	Julian	John	Scotts wife	Bob	Jeannine	Mike	Ed	ELL
Julian		1	3	13	4	10	7	4
John	1		6	3	2	1	2	1
Scotts wife	3	6		5	13	5	3	4
Bob	13	3	5		7	7	9	3
Jeannine	4	2	13	7		5	6	7
Mike	10	1	5	7	5		6	8
Ed	7	2	3	9	6	6		7
ELL	4	1	4	3	7	8	7	

- Not in overlapping matches
- In Cr10 2-segment match
- In Cr10 3 segment match
- In Cr4 weak triple
- In Cr7 weak triple
- In Cr8 weak 2-segment overlap
- In Cr12 strong triple

But this chart shows how Q-match generates new data – that is, through single matches – which means we do not need to confine ourselves to overlaps! But care is needed – the bigger the segment and/or the number of SNPs the larger the Q-score. The above table is based on 3cM minimum matches.

To select targets for genealogical investigation we reduce the options by using 4cM minimum segment size and thereby find the following matches with Ernest Lloyd:

Relatives	Julian	John	Scotts wife	Bob	Jeannine	Mike	Ed
	1(0)	3(0)	4(3)	22(0)	1(2)	14(1)	no match
		4(1)		22(2)	5(7)		

Randoms	Corally	Nichole	Alison	HarryP	Jaimar	Sylvia	MW
	20(0)	4(0)	2(0)	no match	no match	no match	no match

M(N)	≡	Chromosome M (Q-score N) using 4cM minimum segment
[yellow]	≡	Largest Q-score at 4cM minimum segment
[orange]	≡	These matches also show up at 5cM minimum segment threshold

The match with Jeannine on Cr5 (not at the location of the Lousada Cr5 multiple referred to above), seems the highest priority to consider especially as it accompanies a 5.2cM Cr1 match (the largest we have here) also shown in the table. The previously-rejected Cr12 strong triple of Bob/Jeannine/Ed all with Ernest Lloyd helps us here as does a weak triplet at Cr2 (visible with Qmatch 3cM P=3) where Jeannine and Bob also match Ernest Lloyd without matching each other. This suggests that Jeannine and Bob match Ernest Lloyd on different half-identical regions, and without being conclusive that the relevant and respective DNA comes from the parents of Aaron1. The most obvious possibility for Jeannine and Ernest Lloyd to be linked is via Mary Griffin #1292 the 1ˢᵗ wife of Jacob Lousada #683, and her link to the parents of Aaron1 is now a priority to explore.

Less discoverable perhaps is Ernest Lloyd's connection to Scott's wife who has Hungarian ancestry with which we can perhaps associate the Hungarian component of Ernest Lloyd's ancestry (this Hungarian ancestry is shown on FamilyTreeDNA). Also, a 5.1cM Cr14 match between Ernest Lloyd and Mike Dugdale is shown in the table; it is the 2ⁿᵈ largest we have. Coupled with his 3.5cM match on 6Cr (this appears in the previous table above) this might have given us a chance to elucidate a genealogically useful non-Lousada connection but Mike has passed away without leaving us a comprehensive family tree and few (only Sayers and Dugdale) of his recent ancestral non-Jewish surnames. Other matches are likely to be too remotely connected to pursue – for even the randoms show up with distant matches in the last table above.

This table also reminds us that while Ernest Lloyd in Attachments 2 and 3 connected weakly to the Lousada relatives, this does not mean that none of his matches are genealogically useful. Indeed, he certainly has non-Lousada connections with the Lousada relatives.