

SONNET 148: A STUDY OF PROBABILITY

by David Basch

PROBLEM and SOLUTION

Sonnet 148 contains two sets of embeddings of Shakespeare's full name, a complexity suggesting deliberate contrivance. In both sets, most of the letters of the devices are drawn from seven key words of the poem so that only *a total of 9 additional letters are required to form them*. The key words in order are "eyes hath," "correspondence," "with," "mistake," "selfe," and "cleere." The devices are shown below extracted from the sonnet but preserving the original configuration and then as merged within the text:

[1]	O	Me !	s ha	wi
[2]			c ↙ resp	
[3]			y ↘	l
= = = = = = = = = = = = = = = = = =				
[10]				eare
[11]			ake	i
[12]		selfe	h	eere
[13]		l	s	p
[14]		w		s

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[1]	O	Me !	what eyes hath	loue	put	in	my	head,
[2]			Which haue no	correspondence	with	true	sight,	
[3]			Or if they haue,	where is	my	iudgment	fled,	
= = = = = = = = = = = = = = = = = =								
[10]			That is so vext with watching and with teares?					
[11]			No maruaile then though I mistake my view,					
[12]			The sunne it selfe sees not, till heauen cleeres .					
[13]			O cunning loue ,with teares thou keep me blinde,					
[14]			Least eyes well seeing thy foule faults should finde.					

As can be seen, the poet's surname appears twice in divided syllables as "sh a-c"—"sp-y-er" and "s-h-ake"—"s-p-eere." Their letters within the key text words of the poem appear in bold and the outside letters are highlighted in red. Similarly, the two versions of the poet's first name appear as "wi-l" and "w-l-l."

The question, of course, is whether this was random chance or deliberate contrivance. Interestingly, the manner in which the 9 outside letters form the devices offers a simplified means of calculating the probability of these to successfully align and give a measure of the scale of the gauntlet of chance run in aligning..

Calculation Method

In calculating the probability that a given *outside* letter would successfully align, it is necessary to take account of two factors. The first is the fraction that each of these outside letters is of all the sonnet letters (488) and the second is the number of place opportunities for each of these letters to form a successful alignment. Multiplied together, these figures give the probability that each letter would enter into a successful alignment. Further factoring these probabilities for all of the 9 outside letters gives the total probability that these would successfully align. Let us see now how these calculations are carried out.

Consider, for example, the letter “c” (line 1) that aligned with the letters “s ha” to form “*sha-c*.” Since there are 7 letter “c”-s in the sonnet, the fraction these are of the total letters of the sonnet is 7 divided by 488, or .018. This gives the chance of this letter to appear in any given slot within the sonnet. Studying the “*sha-c*” example discloses that there are up to 3 letter positions for “c” to successfully align, either directly below “a” or at either of the two diagonal places beside it. This tells that the letter “c” had a $3 \times .018$ probability of successfully aligning — a probability of .054.

In this particular case, the number of places for the “c” to have successfully arrived was limited by the fact that the key words of the device occur at the top line. With other outside letters, placement opportunities are greater, occurring in positions above and below key text letters and sometimes beside a letter in a sequence, a possibility of as many as 9 placement opportunities. Below is a table indicating the number of each of the *outside* letters in the sonnet and the fraction of these of the sonnet’s 488 letters, which is the *chance* that any of these letters could have appeared:

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Number and Chance of Outside Letters

LTR	No.	Chance*	LTR	No.	Chance*
C	9	.018	S	36	.074
H	37	.076	W	17	.035
L	26	.053	Y	14	.029
P	3	.006			

* *Number/488 sonnet letters*

When the chances for each of the outside letters are factored with the number of opportunities for each to align, this gives the probability for each to actually align. These calculations are carried out for each of the sets of devices below.

Devices on lines 1 to 3

In the devices, “**S HA-C,**” “**SP-Y-ER,**” AND “**WI-L,**” most of their letters are given by the key words of the sonnet, “*eyeS HAth,*” “*CorRESPondence,*” and “*With.*” Only the three outside letters, “**C**” and “**Y**” and “**L**” were then needed to form the devices. (These conditions can be verified in the facsimile of the original sonnet that is to be found on page 6 of this article.)

As was observed, for the surname syllable, “**sha-C,**” the letter “**C**” had 3 possible places for aligning below the letter “*a*” of the device — 1 below and 2 on the diagonals — and was brought into place by the location of the word “*Correspondence.*” As for the letter “**Y**” of “**sp-Y-er,**” this letter had 4 places to arrive in a successful position with the “*S*” of “*corRESPondence*” — *directly below and on the diagonal and another 2 similarly placed above.* These 4 positions would place the “**Y**” at the precise location to contiguously link the letters “**SP**” with the letters “**ER**” (*the latter read right to left*) to yield “**sp-Y-er.**” (*Interestingly, one Stratford town official spelled the poet’s name as “Shakspeyre.”*)

As for the device “**wi-L,**” its letter “**L**” has a total of 6 places to align — 3 places below the “*i*” of “*with*” (*directly below and 2 on the diagonals*) and 3 similarly above. Note in the quarto facsimile an absent space between words on line 3 (“*haue,where*”) helped this alignment and made possible that of the letter “**Y**” noted earlier.

As mentioned, the probability that these three *outside* letters would successfully align is calculated by multiplying their *chance to appear* by the *number of possible places* to align. These calculations are summarized and tabulated in the table below and the total chance for all three is computed as **.0019** — *1 chance in 526*:

	C	Y	L	Chance	Device
Device (1)	.018 x 3			= .054	s ha- C
Device (2)		.029 x 4		= .116	sp- Y -er
Device (3)			.053 x 6	= .318	wi- L

Total Chance (1) x (2) x (3) equals **.0019**

Probability of devices on lines 10-14

In this set of devices, it is the text words “*mistake*” and “*cleere*” that present the bulk of the letters for the surname devices, “**S-H-ake**” and “**S-P-eere**.” All that had to happen to form these was for *two letter “S”-s* and *the letters “H” and “P”* to align in the positions they did. (See the facsimile of the original, page 6.)

As for the “**H**” of “**S-H-ake**,” there are a total of 8 locations for it to align with the letter “*a*” of the key word “*mistake*” — *4 above and 4 below*. As for the location of the letter “**S**” with respect to the “**H**,” there are a total of 8 locations available for successful alignment. As before, the *chance* of a letter to appear in the sonnet multiplied by *the number of locations* available for successful alignment gives its probability of doing so. Factoring the results of the two gives the *probability* that both letters would successfully align.

Calculations made for the *outside* letters “**S**” and “**P**” of the device “**S-P-eere**” similarly involve factoring their letter *chances*, respectively, .074 and .006, with the *number of places* for each to align, respectively, 6 and 8 *places*.

Next is the calculation of the probability of the device, “**W-L-I**.” The “**I**” of this device appears in the text word “*selfe*” — *a word suggesting a link to the poet* — and focuses the alignment of the *outside* letters, “**L**” and “**W**.” Here the “**L**” has a possible 6 locations for a relation to the “**I**” of “*selfe*” — *3 above and 3 below*. The remaining “**W**” also has not more than 6 locations available to successfully align with the previous “**L**.” Again, for the two letters, mul-

tipling their *chances* in the sonnet by *their number of places to align* gives their combined chance to successfully do so.

The figures for the three devices in *lines 10-14* are summarized and tabulated in the table below. Their combined chance is calculated as *.00051 — one chance in about 2000*.

	S	H	P	L	W	Chance	Device	
Device (1)	.074 x 8	x .076 x 8				= .360	S-H -ake	
Device (2)	.074 x 6	x .006 x 8				= .021	S-P -eere	
Device (3)			.053 x 6	x .035x6		= .067	W-L -l	
Total Chance (1) x (2) x (3) equals							.00051	

Total Probability of Device Sets

The combined total probability for both full device sets is calculated by factoring both total chances in the tables above as follows:

$$.0019 \times .00051 = \underline{9.7 \times 10^{-7}} \text{ (about 1 chance in 1 million)}$$

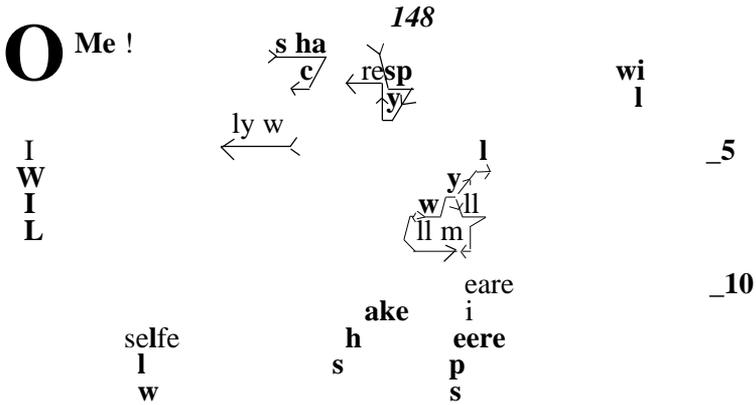
CONCLUSION

The low probability of the successful alignments of the *outside* letters of this complex set of devices — *a probability of about 1 chance in 1 million* (the equivalent of tossing a coin to heads 20 times in a row) — compels the conclusion that the poet deliberately arranged these letters, as also evidenced by the strategic absence of a space between words on line 3 that made possible the positioning of one of the alignments. As the time honored approach to treating data of *Occam's razor* would indicate, *if there are two alternative possibilities for a given phenomenon, the simpler one is to be preferred — here, the poet's intervention*. The condition of the devices, in which seven key sonnet words provide the bulk of the letters of the devices and only required an arrangement of only nine additional letters to complete them, gives insight on Shakespeare's possible method of creating these devices.

Below is a facsimile of the original 1609 quarto printing of this sonnet so that alignments and available places for individual “outside” letters may be observed. (Note the use of the “long s” at the beginning and middle of words that resembles the letter “f” but without the horizontal bar cutting completely through its verticle stem. Note also the use of the letter “u” for “v” in midword)

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O Me! what eyes hath loue put in my head,
Which haue no correspondence with true sight,
Or if they haue, where is my iudgment fled,
That censures falsely what they see aright?
If that be faire whereon my false eyes dote,
What means the world to say it is not so?
If it be not, then loue doth well denote,
Loues eye is not so true as all mens: no,
How can it? O how can loues eye be true,
That is so vext with watching and with teares?
No maruaile then though I mistake my view,
The sunne it selfe sees not, till heauen cleeres.
O cunning loue, with teares thou keepst me blinde,
Least eyes well seeing thy foule faults should finde,



The above is an extracted exhibit of the devices in *Sonnet 148* that show the configurations discussed presenting phonetic representations of Shakespeare’s full name. Shown also are additional phonetically represented names and sonnet words that appear to allude to the poet, such as the opening words of the sonnet, “*O Me!*”, the acrostic “*I-W-I-L*,” and the word “*selfe*” that is part of the device “*w-l-l*.” The disproportionate presence of such elements and their mutual reinforcement speak persuasively for their deliberate contrivance.