SHAKESPEARE
AND THE KING JAMES BIBLE

What Mathematics Tells
An Inquiry

by David Basch

December 2002
Volume 1 of 2

_____

INTERESTED IN THIS TOPIC?

For an updated account of this issue, read the dramatic new evidence of the poet's role in the historic Bible translation in the recently published (2008)

Shakespeare's King James Bible:
Solution to a Riddle
by David Basch.

Click on the following website for more information:
www.davidbasch.net/cov.pdf
or try the following on your browser
David Basch "heavenly hand"

PSALM 46 — KING JAMES VERSION

1. God is our refuge and strength, a very present help in trouble. 2. Therefore will not we fear, though the earth be removed, and though the mountains be carried into the midst of the sea; 3. Though the waters thereof roar and be troubled, though the mountains *shake* with the swelling thereof. *Selah.* 4. There is a river, the streams whereof shall make glad the city of God, the holy place of the tabernacles of the most High. 5. God is in the midst of her; she shall not be moved: God shall help her, and that right early. 6. The heathen raged, the kingdoms were moved: he uttered his voice, the earth melted. 7. The LORD of hosts is with us; the God of Jacob is our refuge. Selah. 8. Come, behold the works of the LORD, what desolations he hath made in the earth. 9. He maketh wars to cease unto the end of the earth; he breaketh the bow, and cutteth the *spear* in sunder; he burneth the chariot in the fire. 10. Be still, and know that *I am* God: I will be exalted among the heathen, *I will* be exalted in the earth. 11. The LORD of hosts is with us; the God of Jacob is our refuge. *Selah.*

SHAKESPEARE AND THE KING JAMES BIBLE
What Mathematics Tells
by David Basch

What is to be made of *Psalm 46* of the *King James Bible* which implicates William Shakespeare in its writing? For those unfamiliar with the circumstances of this oddity, it goes as follows. In this psalm numbered 46, a count of 46 words from its beginning brings up the word *"shake"* while a similar word count of 46 from the ending of the psalm arrives one count short of the word *"spear"* — the latter falling on the count of 47. Notably, when these two words are conjoined, they mimic the name *"Shakespeare."* Not only was Shakespeare alive at the time this Bible translation was written, he was 46 years old when it was completed in 1610 and he was 47 years old when it was published in 1611.

To be sure, this is a world in which strange coincidences occur. The truth be known, in the context of a world history providing a vast and unlimited storehouse of events to draw on, such things are not unprecedented. In fact, it would be unlikely, even amazing, if such things did not occasionally happen. But when they involve very visible public matters, they become notable and the stuff of popular conversation, like the case of the parallels that link the events of Abraham Lincoln's assassination in 1860 to John F. Kennedy's in 1960, exactly 100 years later.

In these two separate events, there were many striking similarities: both presidents had a vice president named Johnson; both were the first president to be born within their respective century; both lost a son during their presidency; and both were shot in the head from behind and in the presence of their wives. And there were even more links, including the one that Kennedy had a secretary named Lincoln *(though it is reported that Lincoln had none named Kennedy).*

Of course, no one would suppose that these curious happenings were any more than coincidence. Yet, sometimes such clusters of events appear so striking in their pattern and coherence that they foster the formulation of theories to explain them. These would impute nonexistent causes and purposes linking the events. Such theories will sometimes inexplicably persist even in the face of clear facts contradicting them.

With such propensities, it should not be surprising to find that in the case of *Psalm 46* imaginative observers would see evidence of Shakespeare's personal intercession in what happened, though authorities and the record of history have precluded this. Nevertheless, observers would shunt aside this record and cling to their view even in the face of the critical flaw in the pattern of 46. As noted, one of the counts is *not 46 but 47* — a key point regularly disregarded. Would a Shakespeare intent on placing his name in the *King James* translation be incapable of creating a perfect 46 count to do so?

Flies in the ointment notwithstanding, the conspiracy-minded, especially among admirers of the great poet, have remained undaunted. The *almost perfect pattern of 46* is so tantalizing that those who would see significance in this have been motivated to rationalize its defect. They would attempt to tease matters into *"a pleasing shape"* that speaks of, not only the deliberate placing of their hero-poet's name in the psalm, but even his personal involvement in the writing of the whole *King James* translation. As seasoned skeptics would say about such attempts: since an explanation for a less than perfect numerological pattern was earnestly sought by plot mongers, it would not be long in arriving. And so it did, found in the special character of the word *"Selah"* that ends *Psalm 46* and makes the last count 47.

The word *"Selah"* is transliterated from the original Hebrew psalm and is uncertain in meaning. Some scholars believe that it is a type of appended word like *"Amen,"* meaning, *"true"* — an affirmative declaration and acceptance of foregoing

sentiments. Others think it an added comment that expresses the hope, *"[may it be] forever."* Still others take it as an instruction to the choirmaster in the original Israelite worship service. Common to these interpretations is the reading of *"Selah"* as separate from the psalm, a tag-on to the text to be justifiably discounted in righting the disturbed count of 46.

This idea of *"Selah"* as something separate happens not to be farfetched since leaving it out corresponds to another regular omission in English translations of the psalm, the omission of the psalm's very first verse. This verse is clearly introductory — *"To the Choirmaster for the sons of Korah, a Song on Alamoth"* — and has been treated by many translators as technical information to be put into an introductory heading and not included as part of the psalm's numbered verses. This too was a change that enabled the count of 46 to occur from the beginning of the psalm. With this parallel as further license to disregard *"Selah,"* the pattern of 46 would seem to be firmly back on track.

There is also another little known coincidence in *Psalm 46* that is worth mentioning. This involves verse 10 — *"Be still, and know that **I am** God: I will be exalted among the heathen, **I will** be exalted in the earth."* If a compilation and a joining is made of the 6th and 7th words from both ends of verse 10 — depending on whether the line is read forward or in reverse — the exercise yields combinations that can be read as the poet's first name, *"will I - I am"* and *"I am - will I."* Since this is a pattern that resembles the pattern that yields the poet's last name, involving equal counts from outside ends — *in this case ends of the verse* — it adds fuel to an apparent plot.

Even for the skeptics, it is not difficult to understand why a conspiracy theory would emerge from this material. All will agree that the idea of the poet's participation in the writing of the *King James* translation is hardly an unlikely imposition in the way that a mystical theory of presidential assassinations would be. With the *King James*, it would also seem to explain such things as the

very noticeable *"Shakespearean tone and cadences"* that pervade the translation. While this has often been attributed to the fact that both the translation and Shakespeare's work were common products of a single age and literary environment, nevertheless, the correspondence is striking and often commented on.

Neither should it be overlooked that William Shakespeare was the greatest literary talent in England at the time. Therefore, it is not altogether surprising that there would be wonder about why he was not associated in some way with the translation. This thinking would probably have commanded more attention but for the contradiction already noted, that the historical record tells otherwise. The poet's name never appears in lists of the 54 participants in the translation. Though four or more names are still missing in the overall count, would Shakespeare's name have failed to surface if he had been among the translators? The proposal has seemed so absurd that little effort has been made to try to show absolute historical evidence to refute it, assuming that this is even possible at this late date. What is more, authorities are quick to point out that the allegedly telltale features of *Psalm 46 — the setting apart of verse 1, the coincidence of the counts of the number 46, and the pattern of verse 10* — were already included in earlier English translations predating Shakespeare's birth.

But despite these ready assertions found in some supposedly authoritative reports, these are not exactly the facts *[as a recent, first hand review of all the versions made by this writer confirms]*. While it is shown that in the *Coverdale* and the *Geneva* translations, two of the early 16th century English translations, verses 1 and 10 of the psalm were already in the forms written into the *King James*, in both these versions the counts of *46* for *"shake"* and *"spear"* missed their marks. The *Coverdale* yields counts of *45* and *41* and the *Geneva* brings *47* and *45*. While these numbers come close, they are not *46*. Another English translation, the *1539 Great Bible*, presents a disturbed pat-

tern in verse 10 leaving out the word play on the name *William* — one set of the 6th and 7th words being *"that I."* And though a count of *46* does occur here for the word *"shake,"* the word *"spear"* comes out three words later at the count of *49*.

Therefore, it remains a stubborn fact of history that it is only in the *King James Version* that the coincidence of the almost perfect pattern of *46* surfaces for the poet's last name and pairs with the pattern that gives his first name. Moreover, the timing of this translation coincidentally connects to a then living 46 year old William Shakespeare. He was a person who could conceivably have played a part in influencing the translation and could have honed some of the details observed to bring about the remarked on patterns. At the very least, the grand combination of these factors must ever make this clustering most notable in the annals of coincidence.

How Remarkable Is The Psalm?

While the unusual features of *Psalm 46* are generally known, less familiar are the facts of its remarkable mathematical character. That the psalm incorporates a most unusual set of features is plainly evident but often escaping notice is just how *super-extraordinary* this is, which is only revealed by an analysis of its mathematical probability. This is a computation that is well worth consulting and is no more complicated than that used in describing the tosses of a coin.

With a coin, each of its two sides has a 1 out of 2 chance of turning up — a mathematical probability of 1/2. To determine the probability that the same side would turn up three times in a row, the 1/2 chances of the three tosses are multiplied, disclosing an overall chance 1 in 8, a probability of 1/8. To further determine the probabilities that same-side tosses would continue, the last product, 1/8, is multiplied by the 1/2 probability for each subsequent toss. Notice that, in each fresh toss, the probability is cut by 1/2 with the resulting figure diminishing along the line of

the fractions, 1/8, 1/16, 1/32, 1/64, and so on. Looking forward to ten, same-side tosses, the prospective chance for this occurrence shrinks to a striking 1 in 1,000, a 1/1000 probability. How many persons would bet the farm against such odds? To fulfill a sequence of twenty *same-side* tosses, the chance shrinks to an even more striking 1 in 1,000,000.

This parade of ever-smaller probabilities confirms the intuition that things such as runs of same-side tosses become ever less likely with every succeeding toss. It is simply not in the nature of things that odds-defying sequences will persist without very soon being demolished by alternate paths of chance. What has made *Psalm 46* so notable is its failure to follow this norm since strung together in the manner of a series of same side tosses of a coin is an intricate accumulation of coincidental features that make up something that greatly defies the odds.

It is because the features observed in the psalm could have been different that the odds that these features took place the way they did can be the subject of mathematical calculation. The computed probabilities of each of these features, like the 1/2 probabilities of the separate tosses of the coin, can be multiplied to arrive at a composite probability that rates the series as a set. Since like in a *six-sided* cube where there are so many more ways in which each of the features of the psalm could have been different than is possible in the case of the toss of a two-sided coin, the probability for the occurrence of each of the psalm's features turns out as a relatively small fraction expressing the singular occurrence divided by the number of the many alternate possibilities. Therefore, multiplying these small fractions of probability for each of the features of the psalm yields an overall probability that is obviously and dramatically more tiny than its multipliers. This corresponds to how unlikely it was that the assembled features of the psalm turned out as they did. This can be demonstrated by running through a set of these calculations.

We may begin by considering the very presence in the psalm of the key words *"shake"* and *"spear."* As a *King James Bible* concordance shows, these relatively rare words appear, respectively, in only 2 and 4 instances in all of the 150 psalms. *(While using this device gives only an approximation of the frequency of these words in the Hebrew language, it is the magnitude of this that is adequate for our purposes.)* Correctly guessing which of the psalms would then host these words surmounts chances of 2 and 4 out of 150 — probabilities of 2/150 and 4/150 (which reduce to 1/75 and 1/38). The probability that both words would appear in a single psalm is the product of the two probabilities (1/75 x 1/38) and yields a composite probability of about 1/2800 — a chance of 1 in 2800. This is almost three times less probable than the 1/1,000 probability of the ten, same-side tosses of a coin.

Continuing the calculation, the key words having already arrived in the psalm, the probability for this must now be multiplied by the probability that the words would then turn up in the patterned counts of 46. *(Here the correction is assumed that leaves out the complication of the word "Selah" since, were the count of 47 considered a valid part of an alleged scheme, it does not affect the scale of the calculations.)* To compute these odds for the emergence of the 46 pattern, it may be assumed for simplicity that the key words could fall into most any of the positions of the psalm's 204 words. This would give the first word 2 out of 204 chances to land in either of the two significant positions and the second word a chance of 1 in 204 to find the remaining slot. The probability that the words would show up at their celebrated set of locations requires multiplying their individual probabilities (2/204 x 1/204), which yields a composite probability of about 1/20,000. Factoring this with the previous calculations indicates that the new combination has a probability of 1/56,000,000, a chance of 1 in 56 million — *the equivalent of the odds in some lotteries.*

And this is not the end of the line. There is the device of the poet's first name. This is a word arrangement found nowhere else in *Psalms*. As pure chance, this pattern can be shown to have run a gauntlet with odds of about 1 in 200,000. When this factor enters calculations, the full set of features now discloses a composite chance of 1 in 11 trillion (a minuscule probability of about 1×10^{-13} that is unfathomable). It points to an event *so unlikely* that its occurrence must be regarded as a wondrous phenomenon of chance. This is the ready conclusion though calculations of chance still have not taken into account the linkages of the psalm to the then very much alive Shakespeare who was 46 years old when the translation was completed — *another connection to the number 46.* While correcting the age factor for distribution gives a probability of about 1/30 and adds another zero to figures, the living linkage factor is just about incalculable. But, then, these additions are hardly needed to show the remarkable nature of the psalm, already proved. *Or has it?*

Another Approach

What complicates the issue is that there is another approach to calculations regularly brought forward by *"nay"-sayers* purporting to show the psalm in a far less challenging light. In this, all the features of the original Hebrew psalm that were in existence when the *King James* translation process began are assumed as *"givens."* Since these are already there, they are no longer considered as subjects of chance and are removed from calculations pertaining to the alleged marvels of the psalm. What then remain to be considered are developments occurring during the translation process, like the writing of the specific wording of the psalm. Here the already given key words for the poet's surname took their final place and his first name found its shape in verse 10. It is these latter developments that are assumed to be the only relevant variables of the psalm that were subject to chance at the time and presumed sufficient in taking account of any *"won-*

ders" showing up in the psalm. When these are examined, their unfolding turns out not to be of particular note.

For example, using as parameters the range of the shifting locations of the words *"shake"* and *"spear"* in the three previous Bible translations, it is evident that the scope of the shifts in word-placement had already been limited by the wording of the original Hebrew psalm. The shifts are seen to be confined to a narrow range of places that roughly centers around counts of *46*. Thus, in comparisons with earlier translations (the *Coverdale,* the *Great Bible,* and the *Geneva*), the location of the word *"shake"* shifts by a mere three places while *"spear"* traverses only nine places. Hence, the chance placement of the two words in the *King James* that put them at counts of *46* (or near 46) can be calculated as *the product* of the probabilities of the two, which is 1/3 times 1/9. This gives a composite probability of 1/27, a chance of 1 in 27. Even if it is allowed that the range enabled by the original Hebrew is actually somewhat greater, the calculated chance for such positioning is hardly awesome.

Similarly with the factor concerning the poet's first-name, the fact that two of three earlier translations came up with this configuration — *the third almost did* — suggests the parameters. It indicates that this pattern too is closely rooted in the words of the original Hebrew. Since the pattern worked out in 2 out of 3 earlier translations, it can be assumed to have had a chance of occurring of 2 out of 3, a probability of 1/1.5. Combining this probability with that calculated for the other name device gives the full set of devices a successful probability of occurring of about 1/40 (1/27 x 1/1.5) — a chance of 1 out of 40. Though this is ordinarily a tough chance, the surmounting of these odds is hardly remarkable. And while the linkage of these to the biography of the poet is still phenomenal, that condition equally affects both approaches and leaves us with a figuratively, *light-years* less spectacular event than that calculated earlier.

Can these radically different approaches to calculation be reconciled? In fact, this is easily done when it is recognized that they merely describe different aspects of what had occurred. The first approach takes into account the full set of coincidences that played a role in linking a living Shakespeare to the psalm. This approach does not consider the scale of time separating the features that came to play a part in what occurred. It reaches back to the original Hebrew version a long time before the translation process began, in which, by chance, the psalm took on the literary features that figured into the later translation. This approach deals with a process of chance that worked its way over *many, many years* into the remarkable form and conditions observed in the *King James* translation.

In contrast, the second approach would recognize only a portion of the factors that entered into this process of chance, taking for granted as *"givens"* that which had chanced in the earlier phases. This approach can be compared to focusing on the moment of only the last, isolated coin toss in a series of twenty, *same-side tosses*. By disregarding a previous nineteen tosses as merely "past and given," *the calculation of chance is reduced to that describing the last toss alone.* Such a computation shows the modest 1 out of 2 chance of a single toss. But, as we have seen, since that last toss is also the twentieth and completing toss of a long series of same-side tosses, its performance simultaneously can be described as having negotiated a chance of 1 in a million. This dramatic aspect is not evident when the toss is considered only as a separate, single event, but only in the context of the entire set of tosses. Similarly, the super astonishing aspects of *Psalm 46* of the *King James* translation only emerge in the context of the entirety of the events in its shaping. Obviously, this would include factors that entered the process of chance in events prior to the time this translation was undertaken.

It becomes evident from the coin illustration that the two ways of calculating are not divorced from one another and are

not in contradiction. They stand in the relation in which relevant factors are considered *"in whole"* or *"in part."* The two approaches present aspects of the truth of the psalm, disclosing a not-improbable play of chance in the shaping of *a portion of events* as well as a most remarkable chance in the formation of *the complex configuration of the whole.*

What Does Mathematics Tell?

Given the understanding allowed by study of these mathematical aspects of *Psalm 46,* the relevant question is whether this sheds light on the writing of the *King James* translation. For example, does the fact that the two critical name-devices alone show *a not improbable* 1 in 40 chance of emerging within the narrow window of the *King James* translation process indicate *the folly* of considering *a vastly more improbable speculation* that a human hand had deliberately made this happen? This conclusion would logically follow were these developments considered in isolation from the larger context.

But, as we have seen, isolating these developments would not do justice to what had occurred. Not only does it neglect the linkage of this to the name of William Shakespeare but it would also neglect the earlier unfoldment of chance that brought the key words to the translation process. This is tantamount to not noticing the connection of the last toss of a coin to heads to its prior nineteen tosses to heads. With both the coin and the psalm, when the larger context is considered, the low probability of what occurred shows itself to be astounding.

Thus, after a series of coincidences had already played upon the writing of the original Hebrew *Psalm 46* that brought what later became key words in an emerging pattern, is it not uncanny that further coincidences would occur in a seemingly sure-footed manner to add the finishing touches of the full pattern? In this, the later developments linked with and energized what had occurred earlier to result in something phenomenal that appears to

implicate a 46 year old Shakespeare. How often do the lightning bolts of chance again and again seek out a single target to shape into a configuration that appears to display coherent structure directly pointing to contemporaneous events outside itself?

This brings us squarely to the issue of the poet's role in the translation process. With the calculated low probability of the arrangements of the psalm shown to be incomprehensibly small, we are led to ask whether the remoteness of this possibility necessarily proves that there must have been a conscious hand that brought this condition to pass.

In accordance with the scientific rule known as *Occam's razor,* when investigators are confronted with competing theories for the causes of phenomena, it is usual for preference to be given to the simplest explanation that takes account of all the facts. If this preference is taken, it favors the assumption that there was conscious intervention in what occurred. This would eliminate the need to accept what would otherwise be a fabulous and unlikely unfolding of chance.

This assumption would further suggest that the fine tuning of this development was wrought by the hand of the poet for the likely purpose of his gaining due credit for his role in the translation. This follows because it gives a direct, understandable motive for interference. It makes no sense to assume that it would have been done as a frivolous game played on behalf of a third party by the participants in this most serious and sacred undertaking. What is more, the convoluted manner in which the hidden revelation was conveyed — something not discovered for centuries — suggests that it was addressed to future ages, *to be read by eyes yet unborn.*

But in arriving at this assessment, it must be acknowledged that, while the poet's role is *far more likely* than the alternative of pure chance, this conclusion has not been proved. *Being a most probable version of events is not the same as being the true account.* The possibility, tiny though it is, still remains

open that *chance-alone* shaped all that occurred. It is already certain that chance had accounted for the greater part of these marvelous conditions so why not the few remaining modest factors? Thus, while the entirety that unfolded is awesome as a feat of pure chance, it becomes conceivable that this is what occurred, especially in the light of other wondrous coincidences that have dotted the pages of history that offers a myriad of events to play with.

Moreover, there are two contradictions to the thesis of the poet's involvement. One is a standing, unchallenged, authoritative record that leaves him out. Second, and even more telling, is the flaw in one of the counts of 46. Such an imperfection in a scheme that leaves matters hopelessly ambiguous and calls into serious question the existence of its devices, all but defeats what the scheme would have been supposed to accomplish.

When these doubts are added to a hallowed tradition associated with the *King James* translation as having wondrously emerged in its splendor of style and beauty from the collective hands of many, dedicated Bible scholars, it becomes most unlikely that an exercise in mathematics, inconclusive at best, will be capable of discrediting what has long been accepted. If anything, it merely confirms how wondrous was this translation. Authorities are hardly likely to substitute for a solidly established conventional view what is no more than radical speculation.

It is abundantly clear that those who would pose a role for Shakespeare in the writing of the *King James* translation will need more than pure mathematics to overcome resistance to accepting their idea. While in this inquiry, rich food for speculation has been provided for what may or may not have occurred, it is apparent that, *in the absence of positive evidence that removes all doubt*, a radical thesis alleging something different from that long-assumed has not been proved.

****