

Abstract

What are the probabilities for the word 'Egypt' being the final word in the Book of Genesis and the word 'Amen' being the final word in the Bible in conjunction with these words being mentioned exactly 77 times in Genesis and the whole King James Bible (KJV), respectively? How do these results compare with other Bible versions? How would this compare with the chances of selecting one mustard seed from a pile of mustard seeds? The results using linguistic analysis and mathematical probabilities approximate these chances respectively as from a layer of mustard seeds covering a surface area of between 0.26 ft² and 4.76 ft² (0.02 m² to 0.44 m²), and from a stack of mustard seeds covering the equivalent land surface area of the USA to a height of between 6 miles to 31 miles (10 km and 50 km)!

Introduction

Firstly, the King James Pure Bible Search (KJPBS) software tool^[1] is used to analyse the occurrences of individual words. This tool provides extremely useful values on the numbers of words in individual books, e.g. the Book of Genesis (38,262 words), and for the whole Bible (790,849 words). It is also possible to carry out an infinite number of search options for individual and combinations of words within separate books of the Bible, throughout the Old and New Testaments. In this case, when carrying out a search for the word 'Egypt' occurring in the Book of Genesis only, there are 77 matches (Figure 1 refers).

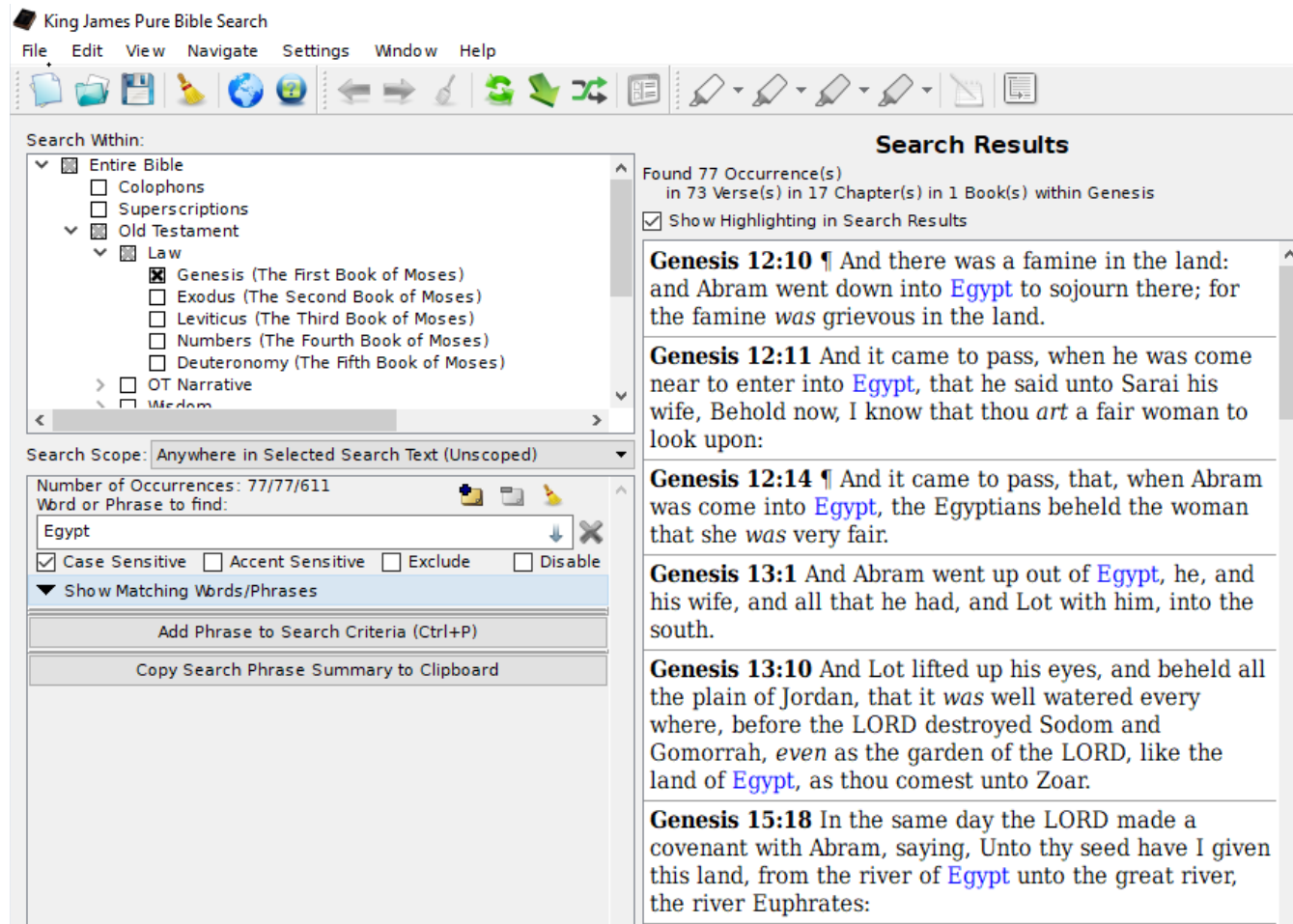


Figure 1; Number of search results for the word 'Egypt' in the Book of Genesis

‘Egypt’ is also the final word in the Book of Genesis (Chapter 50, verse 26) (Figure 2 refers).

Genesis 47:29 And the time drew nigh that Israel must die: and he called his son Joseph, and said unto him, If now I have found grace in thy sight, put, I pray thee, thy hand under my thigh, and deal kindly and truly with me; bury me not, I pray thee, in [Egypt](#):

Genesis 47:30 But I will lie with my fathers, and thou shalt carry me out of [Egypt](#), and bury me in their buryingplace. And he said, I will do as thou hast said.

Genesis 48:5 ¶ And now thy two sons, Ephraim and Manasseh, which were born unto thee in the land of [Egypt](#) before I came unto thee into [Egypt](#), are mine; as Reuben and Simeon, they shall be mine.

Genesis 50:7 ¶ And Joseph went up to bury his father: and with him went up all the servants of Pharaoh, the elders of his house, and all the elders of the land of [Egypt](#),

Genesis 50:14 ¶ And Joseph returned into [Egypt](#), he, and his brethren, and all that went up with him to bury his father, after he had buried his father.

Genesis 50:22 ¶ And Joseph dwelt in [Egypt](#), he, and his father’s house: and Joseph lived an hundred and ten years.

Genesis 50:26 So Joseph died, *being* an hundred and ten years old: and they embalmed him, and he was put in a coffin in [Egypt](#).

we be thy servants. **19** And Joseph said unto them, Fear not: for *am* I in the place of God? **20** But as for you, ye thought evil against me; *but* God meant it unto good, to bring to pass, as *it is* this day, to save much people alive. **21** Now therefore fear ye not: I will nourish you, and your little ones. And he comforted them, and spake kindly unto them.

22 ¶ And Joseph dwelt in [Egypt](#), he, and his father’s house: and Joseph lived an hundred and ten years. **23** And Joseph saw Ephraim’s children of the third *generation*: the children also of Machir the son of Manasseh were brought up upon Joseph’s knees. **24** And Joseph said unto his brethren, I die: and God will surely visit you, and bring you out of this land unto the land which he sware to Abraham, to Isaac, and to Jacob. **25** And Joseph took an oath of the children of Israel, saying, God will surely visit you, and ye shall carry up my bones from hence. **26** So Joseph died, *being* an hundred and ten years old: and they embalmed him, and he was put in a coffin in [Egypt](#).

Exodus

(The Second Book of Moses)

Category: Law

Chapter 1

1 Now these *are* the names of the children of Israel, which came into Egypt; every man and his household came with Jacob.

So

SO, *adv.* [L. sic, contracted. It is from some root signifying to set, to still, and this sense is retained in the use of the word by milkmaids, who say to cows, so, so, that is, stand still, remain as you are; and in this use, the word may be the original verb.]

Figure 2; ‘Egypt’ as the final word in the Book of Genesis

The capitalised word 'Amen' is found 77 times in the whole of the Bible (Figure 3 refers).

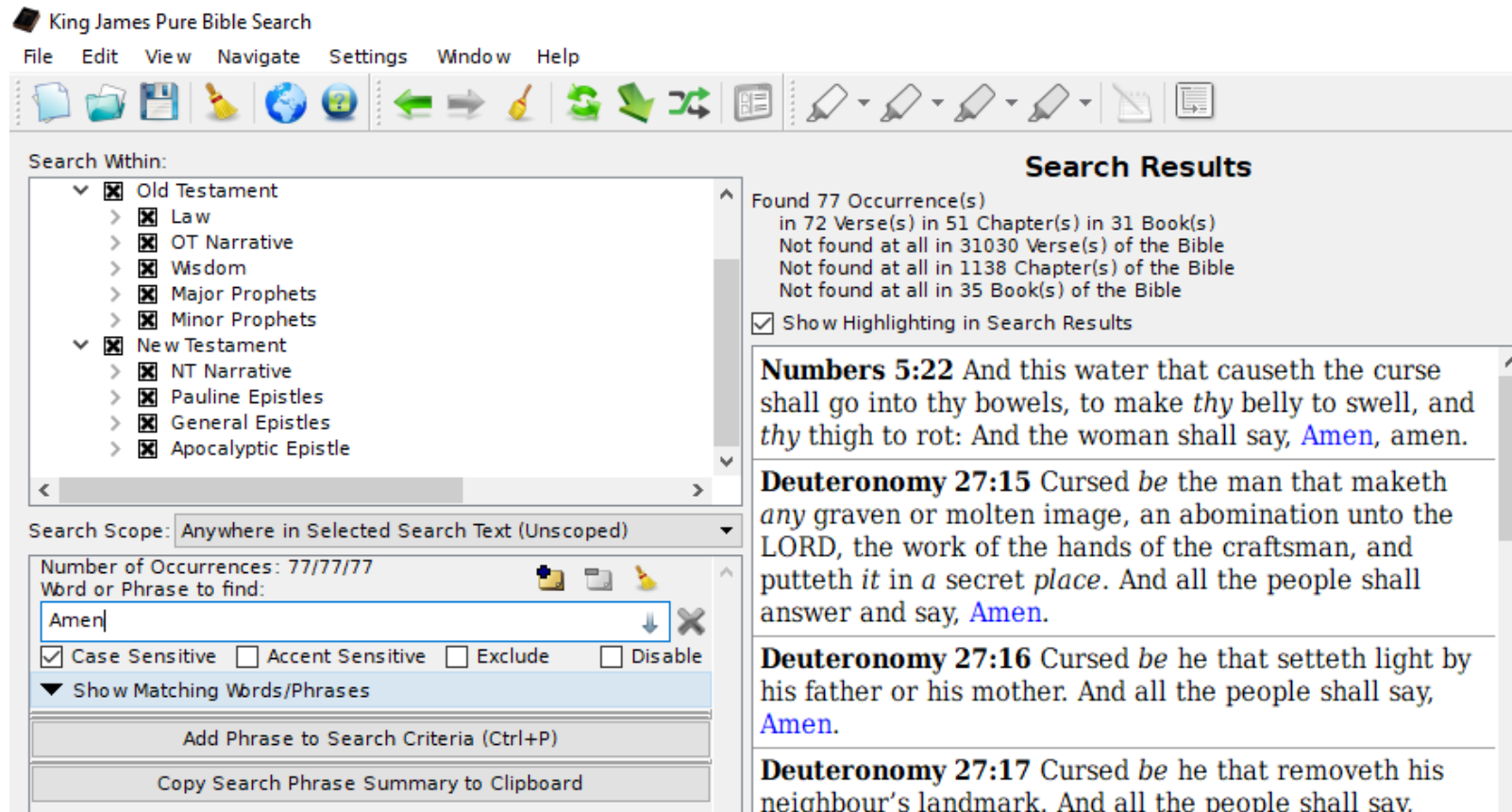


Figure 3; 'Amen' throughout the Bible

‘Amen’ is also the final word in the Book of Revelation (Chapter 22, verse 21), indeed the very last word in the KJV (Figure 4 refers).

Search Results

Found 77 Occurrence(s)
in 72 Verse(s) in 51 Chapter(s) in 31 Book(s)
Not found at all in 31030 Verse(s) of the Bible
Not found at all in 1138 Chapter(s) of the Bible
Not found at all in 35 Book(s) of the Bible

☒ Show Highlighting in Search Results

King James Bible (1769)

Book/Chapter:
Revelation
22

New Testament:
Book: 27
Chapter: 260

Entire Bible:
Book: 66
Chapter: 1189

Enter Passage Reference:

Amen.

Revelation 1:6 And hath made us kings and priests unto God and his Father; to him *be* glory and dominion for ever and ever. Amen.

Revelation 1:7 Behold, he cometh with clouds; and every eye shall see him, and they *also* which pierced him: and all kindreds of the earth shall wail because of him. Even so, Amen.

Revelation 1:18 I *am* he that liveth, and was dead; and, behold, I am alive for evermore, Amen; and have the keys of hell and of death.

Revelation 3:14 And unto the angel of the church of the Laodiceans write; These things saith the Amen, the faithful and true witness, the beginning of the creation of God;

Revelation 5:14 And the four beasts said, Amen. And the four *and* twenty elders fell down and worshipped him that liveth for ever and ever.

Revelation 7:12 Saying, Amen: Blessing, and glory, and wisdom, and thanksgiving, and honour, and power, and might, *be* unto our God for ever and ever. Amen.

Revelation 19:4 And the four and twenty elders and the four beasts fell down and worshipped God that sat on the throne, saying, Amen; Alleluia.

Revelation 22:20 He which testifieth these things saith, Surely I come quickly. Amen. Even so, come, Lord Jesus.

Revelation 22:21 The grace of our Lord Jesus Christ *be* with you all. Amen.

he said unto me, These sayings *are* faithful and true: and the Lord God of the holy prophets sent his angel to shew unto his servants the things which must shortly be done. 7 Behold, I come quickly: blessed is he that keepeth the sayings of the prophecy of this book. 8 And I John saw these things, and heard *them*. And when I had heard and seen, I fell down to worship before the feet of the angel which shewed me these things. 9 Then saith he unto me, See *thou do it* not: for I am thy fellowservant, and of thy brethren the prophets, and of them which keep the sayings of this book: worship God. 10 And he saith unto me, Seal not the sayings of the prophecy of this book: for the time is at hand. 11 He that is unjust, let him be unjust still: and he which is filthy, let him be filthy still: and he that is righteous, let him be righteous still: and he that is holy, let him be holy still. 12 And, behold, I come quickly; and my reward is with me, to give every man according as his work shall be. 13 I am Alpha and Omega, the beginning and the end, the first and the last. 14 Blessed *are* they that do his commandments, that they may have right to the tree of life, and may enter in through the gates into the city. 15 For without *are* dogs, and sorcerers, and whoremongers, and murderers, and idolaters, and whosoever loveth and maketh a lie. 16 I Jesus have sent mine angel to testify unto you these things in the churches. I am the root and the offspring of David, *and* the bright and morning star. 17 And the Spirit and the bride say, Come. And let him that heareth say, Come. And let him that is athirst come. And whosoever will, let him take the water of life freely. 18 For I testify unto every man that heareth the words of the prophecy of this book, If any man shall add unto these things, God shall add unto him the plagues that are written in this book: 19 And if any man shall take away from the words of the book of this prophecy, God shall take away his part out of the book of life, and out of the holy city, and *from* the things which are written in this book. 20 He which testifieth these things saith, Surely I come quickly. Amen. Even so, come, Lord Jesus. 21 [The grace of our Lord Jesus Christ *be* with you all. Amen.

The

THE, an adjective or definitive adjective.

1. This adjective is used as a definitive, that is, before nouns which are specific or

Figure 4; ‘Amen’ is the last word in the Bible

How do other Bible versions compare?

Using the Blue Letter Bible online search tool^[2] it is possible to carry out these same searches against other Bible versions (Table 1 refers). It can be clearly deduced that only the NKJV matches the search records of the KJV.

Bible version	'Egypt' (Genesis only)	'Amen' in the whole Bible
English Standard Version (ESV)	79 ^[3]	56 ^[4]
New American Standard Bible (NASB)	76 ^[5]	57 ^[6]
New International Version (NIV)	79 ^[7]	57 ^[8]
New King James Version (NKJV)	77 ^[9]	77 ^[10]

Table 1; Compilation of search results from the Blue Letter Bible

Method

There are obviously a host of ways of quantifying the probabilities of certain words occurring in a body of text. Here, two distinct approaches have been adopted. Firstly, a simplified mathematical analysis of probability is adopted, a technique most easily explained with dice. This is a basic approach to analysing how many times a certain word, out of all the possible options in the relevant vocabulary, could possibly be chosen. To this end, two versions have been selected; Webster's 1828 Dictionary^[11] and the Oxford English Dictionary^[12].

The second analysis is by the combination of the frequency of words using the 'N-gram generator'^[13]. This online software model can be manipulated to search for a phrase containing 2 words (bigram (2)) to one containing 5 words (N-gram (5)); top 10 to top 1000 results; sorting by 'Frequency/Probability/Strength'; and a 'minimal frequency' from 1 to 100. There is also a helpful link to the text of the KJV Scriptures^[14] to copy and paste relevant text into the search engine.

Starting with the approach of mathematical probabilities, firstly, probability is defined as 'the fraction of times an outcome is expected to happen'. Where an outcome is inevitable, then this can be expressed in fractional, digital and percentage (%) forms as follows.

$$\frac{1}{1} = 1.0 = 100 \%$$

When it comes to the sides of a dice, one side heads and the other tails, the chance of obtaining a head is as follows.

$$\frac{1}{2} = 0.5 = 50 \%$$

How many sides of the dice would be needed for this outcome? The fraction needs to be 'flipped' to obtain the result of $2 \div 1 = 2$ sides.

The following two rules are used to combining probabilities (Mathematical Rules 1 and 2).

1. The multiplication rule for probabilities.

If a number of outcomes occur INDEPENDENTLY of one another, the probability of them all happening TOGETHER is found by MULTIPLYING their individual probabilities. (Mathematical Rule 1)

For example, if you throw 3 dice, what is the probability of scoring 4 on each of them?

The probability of getting a 4 on one die is $1 \div 6$.

So the probability of getting a 4 on all of the dice is 0.4629% (Mathematical Result 1 refers).

$$\frac{1}{6} \times \frac{1}{6} \times \frac{1}{6} = 0.004629 = 0.4629 \% \quad \text{(Mathematical Result 1)}$$

2. The addition rule for probabilities

If a number of ALTERNATIVE outcomes are MUTUALLY EXCLUSIVE, the probability of getting ONE OR OTHER of these outcomes is found by ADDING their individual probabilities. (Mathematical Rule 2)

For example, what is the probability of rolling a 4 OR A 5 on a SINGLE throw of a die?

The probability of rolling a 4 is $1 \div 6$, the probability of rolling a 5 is also $1 \div 6$.

So, the combined probability is 33.33% (Mathematical Result 2 refers).

$$\frac{1}{6} + \frac{1}{6} = \frac{2}{6} = 0.3333 = 33.33 \% \quad \text{(Mathematical Result 2)}$$

Results

'Egypt' is the last word in the Book of Genesis (Figure 2 refers).

The number of possible words, according to Webster's 3rd New International Dictionary, is 470,000^[11].

So, the probability of 'Egypt' being the last word is as follows (Equation 1 refers).

$$\frac{1}{470000} = 2.128 \times 10^{-6} = 2.128 \times 10^{-4} \% \quad \text{(Equation 1)}$$

For one mustard seed painted gold, you would need 470,000 other mustard seeds in a jar, so a total of 470,001 seeds would be required.

According to the 2nd Edition of the Oxford English Dictionary there are 171,476 words in current use, and 47,156 'obsolete' words. This would make a total of 218,632 words^[12].

So, the probability of 'Egypt' being the last word is as follows (Equation 2 refers).

$$\frac{1}{218632} = 4.574 \times 10^{-6} = 4.574 \times 10^{-4} \% \quad \text{(Equation 2)}$$

For one mustard seed painted gold, you would need 218,632 other mustard seeds in a jar, so a total of 218,633 seeds would be required.

Now, 'Egypt' is mentioned 77 times in the Book of Genesis (Figure 1 refers), and 'Amen' is mentioned 77 times in the whole Bible (Figure 3 refers).

Firstly, what is the probability of 'Egypt' being mentioned between 1 and 100 times in the Book of Genesis? Here, Mathematical Rule 2 can be used (Equation 3 refers).

$$\frac{1}{1} + \frac{1}{2} + \frac{1}{3} \dots + \frac{1}{77} + \dots + \frac{1}{98} + \frac{1}{99} + \frac{1}{100} = \sum_{n=1}^{100} \left(\frac{1}{n} \right) \quad (\text{Equation 3})$$

Using the online 'Sigma/summation calculator'^[15] the final result is 5.187377517639621, rounded up to 5.187.

Similarly, the probability of 'Amen' being mentioned between 1 and 100 times in the whole Bible is also 5.187.

So, the combined probability, using Mathematical Result 1 as these results are independent, is as follows (Equation 4 refers).

$$\frac{1}{5.187} \times \frac{1}{5.187} = 3.717 \times 10^{-2} = 3.717 \% \quad (\text{Equation 4})$$

So, the combined probability of both 'Egypt' and 'Amen' occurring between 1 and 100 times in the Book of Genesis and the whole Bible respectively is approximately 0.02% (3.717% ÷ 200 options as 77 is one of the 100 possibilities, and there are two words).

'Egypt' is mentioned 77 times in the Book of Genesis (Figure 1 refers) and the total number of words in the Book of Genesis is 38,262^[1].

As these outcomes are independent of each other, Mathematical Rule 1 is used.

Therefore, the probability of the 77 mentions of 'Egypt' occurring within the book of Genesis is as follows.

$$\frac{1}{77} \times \frac{1}{38262} = \frac{1}{2946174} = 3.394 \times 10^{-7} = 3.394 \times 10^{-5} \% \quad (\text{Equation 5})$$

For one mustard seed painted gold, you would need 2,946,174 other mustard seeds in a jar, so a total of 2,946,175 seeds would be required.

It is also noted that 'Egypt' is the ONLY word out of the 2,509 unique words in Genesis^[1], to be mentioned exactly 77 times.

As these outcomes are independent of each other, Mathematical Rule 1 is used.

So the probability of this occurring is as follows.

$$\frac{1}{2509} \times \frac{1}{77} = \frac{1}{193193} = 5.176 \times 10^{-6} = 5.176 \times 10^{-4} \% \quad (\text{Equation 6})$$

For one mustard seed painted gold, you would need 193,193 other mustard seeds in a jar, so a total of 193,194 seeds would be required.

‘Egypt’, the only word mentioned 77 times in Genesis, is also the last word of Genesis (Figures 1 and 2 refer).

As these outcomes are independent of each other, Mathematical Rule 1 is used.

Using the Webster English values^[11], we have the following probabilities.

$$\frac{1}{77} \times \frac{1}{470000} = \frac{1}{36190000} = 2.763 \times 10^{-8} = 2.763 \times 10^{-6} \% \quad (\text{Equation 7})$$

For one mustard seed painted gold, you would need 36,190,000 other mustard seeds in a jar, so a total of 36,190,001 seeds would be required.

Using the Oxford English values^[12], we have the following probabilities.

$$\frac{1}{77} \times \frac{1}{218632} = \frac{1}{16834664} = 5.94 \times 10^{-8} = 5.94 \times 10^{-6} \% \quad (\text{Equation 8})$$

For one mustard seed painted gold, you would need 16,834,664 other mustard seeds in a jar, so a total of 16,834,665 seeds would be required.

Using the 'N-gram generator'^[13] and changing the default settings to a trigram (3) word setting, the results are obtained in Figure 5.

Steps

1. Copy a text (from a website, a book, a larger corpus, et cetera).
2. Paste the text into the input area below. You don't have to remove weird characters, tags, white spaces and new lines — the script does it for you.
3. Set 'ngram' to the desired number of words or leave at 2 (bigrams) and set the number of results wanted (or leave at 50). If you're going to sort on probability (see 'explanation'), it can be useful to set a minimal frequency for the n-grams included in the list.
4. Click 'Generate ngrams' and wait a bit.

Input and settings

Choose preferred settings, or leave at default.

N-gram: Top: Sort: Minimal frequency:

Paste a text to analyze below.

50:24 And Joseph said unto his brethren, I die: and God will surely visit you, and bring you out of this land unto the land which he sware to Abraham, to Isaac, and to Jacob.

50:25 And Joseph took an oath of the children of Israel, saying, God will surely visit you, and ye shall carry up my bones from hence.

50:26 So Joseph died, being an hundred and ten years old: and they embalmed him, and he was put in a coffin in Egypt.

Words to exclude (space separated):

Generate n-grams

Results

Save as csv file

No.	N-gram	Frequency	Probability	Strength
1	creepeth upon the	8	1	2.08
2	pitched his tent	6	0.86	1.54
3	early in the	6	0.86	1.54
4	these are the	41	0.4	1.49
5	came to pass	63	0.36	1.48
6	breath of life	4	1	1.39
7	most high god	4	1	1.39
8	reigned in his	7	0.7	1.36
9	midst of the	5	0.83	1.34
10	establish my covenant	5	0.83	1.34
11	thirty years and	10	0.56	1.28
12	lifted up his	9	0.56	1.24
13	captain of the	6	0.67	1.19
14	between me and	12	0.48	1.19
15	fruitful and multiply	8	0.57	1.19
16	answered and said	9	0.53	1.16
17	beast of the	10	0.5	1.15
18	talked with him	4	0.8	1.11
19	walked with god	3	1	1.1
20	ur of the	3	1	1.1
21	inhabitants of the	3	1	1.1
22	phichol the chief	3	1	1.1
23	audience of the	3	1	1.1
24	worshipped the lord	3	1	1.1
25	obey my voice	3	1	1.1
26	blasted with the	3	1	1.1

Figure 5; 1st N-gram generator results

Table 2 shows the results as organised into phrases of 3 words.

Here, Mathematical Rule 1 shows that the multiplied probability of the 48 occurrences of the word 'Egypt' in the 3 words concerned is a total of $0.000011115 = 1.11115 \times 10^{-5}$.

The reciprocal is 90,000.

(Result (1))

	A	B	C	D	E
1	No.	N-gram	Frequency	Probability	Strength
2	369	corn in <u>egypt</u>	3	0.18	0.19
3	980	down into <u>egypt</u>	3	0.05	0.05
4	981	down to <u>egypt</u>	3	0.05	0.05
5	376	king of <u>egypt</u>	4	0.13	0.18
6	105	land of <u>egypt</u>	35	0.19	0.67
7	TOTALS		48	0.000011115	1.14
8	338	1 and it	8	0.1	0.21
9	848	1 and <u>jacob</u>	4	0.05	0.07
10	654	1 and the	5	0.06	0.1
11	421	10 and he	7	0.09	0.17
12	856	10 and it	4	0.05	0.07
13	520	10 and the	6	0.07	0.13
14	422	11 and the	7	0.09	0.17
15	229	12 and he	10	0.14	0.33
16	364	12 and the	7	0.1	0.19
17	762	13 and he	4	0.06	0.08
18	429	13 and it	6	0.09	0.16
19	341	13 and the	7	0.1	0.2
20	618	14 and the	5	0.07	0.11
21	607	15 and the	5	0.07	0.11
22	561	16 and he	5	0.08	0.12

Table 2; screenshot of reorganised spreadsheet results

Changing the default settings of the 'N-gram generator'^[13] to the maximum N-gram (5) word setting, the results are obtained in Figure 6.

Steps

1. Copy a text (from a website, a book, a larger corpus, et cetera).
2. Paste the text into the input area below. You don't have to remove weird characters, tags, white spaces and new lines — the script does it for you.
3. Set 'ngram' to the desired number of words or leave at 2 (bigrams) and set the number of results wanted (or leave at 50). If you're going to sort on probability (see 'explanation'), it can be useful to set a minimal frequency for the n-grams included in the list.
4. Click 'Generate ngrams' and wait a bit.

Input and settings

Choose preferred settings, or leave at default.

N-gram: Top: Sort: Minimal frequency:

Paste a text to analyze below.

50:24 And Joseph said unto his brethren, I die: and God will surely visit you, and bring you out of this land unto the land which he sware to Abraham, to Isaac, and to Jacob.

50:25 And Joseph took an oath of the children of Israel, saying, God will surely visit you, and ye shall carry up my bones from hence.

50:26 So Joseph died, being an hundred and ten years old: and they embalmed him, and he was put in a coffin in Egypt.

Words to exclude (space separated):

Generate n-grams

Results

Save as csv file

No.	N-gram	Frequency	Probability	Strength
1	and it came to pass	62	0.02	0.07
2	in the land of canaan	23	0.04	0.12
3	it came to pass when	22	0.07	0.22
4	years and begat sons and	16	0.14	0.39
5	and begat sons and daughters	16	0	0.01
6	these are the sons of	14	0.14	0.36
7	all the land of egypt	13	0.05	0.13
8	the land of canaan and	13	0.01	0.01
9	in the land of egypt	12	0.02	0.05
10	these are the generations of	10	0.1	0.23
11	begat sons and daughters 5	9	0.13	0.3
12	it came to pass as	9	0.03	0.06
13	and all the days of	9	0	0.01
14	and he said unto him	9	0	0.01
15	and she called his name	9	0	0.01
16	begat sons and daughters 11	8	0.12	0.25
17	1 and it came to	8	0.1	0.21
18	years and he died 5	8	0.07	0.15
19	it shall come to pass	8	0.03	0.05
20	the land of egypt 41	8	0	0.01
21	and the lord said unto	8	0	0
22	and he said i will	8	0	0
23	and bare a son and	8	0	0
24	lifted up his eyes and	7	0.44	0.85

Figure 6; 2nd N-gram generator results

Table 3 shows the results as organised into phrases of 5 words.

Here, Mathematical Rule 1 shows that the multiplied probability of 64 occurrences of the word 'Egypt' in the 5 words concerned is a total of $0.0002 = 2.0 \times 10^{-4}$.

The reciprocal of this is 5,000

(Result (2))

	Name Box	B	C	D	E
1	No.	N-gram	Frequency	Probability	Strength
2	7	all the land of egypt	13	0.05	0.13
3	9	in the land of egypt	12	0.02	0.05
4	20	the land of egypt 41	8	0	0.01
5	28	the land of egypt and	7	0	0.01
6	67	of the land of egypt	5	0	0.01
7	199	land of egypt in the	3	0.02	0.02
8	254	the land of egypt for	3	0	0
9	255	the land of egypt in	3	0	0
10	527	over the land of egypt	2	0.04	0.03
11	599	egypt and in the land	2	0.03	0.02
12	664	went up out of egypt	2	0.02	0.01
13	779	came into egypt jacob and	2	0.01	0.01
14	783	land of egypt and in	2	0.01	0.01
15	TOTALS		64	0.0002	0.310
16	1	and it came to pass	62	0.02	0.07
17	2	in the land of canaan	23	0.04	0.12
18	3	it came to pass when	22	0.07	0.22
19	4	years and begat sons and	16	0.14	0.39
20	5	and begat sons and daughters	16	0	0.01
21	6	these are the sons of	14	0.14	0.36
22	8	the land of canaan and	13	0.01	0.01

Table 3; screenshot of reorganised spreadsheet results

'Amen' is the last word in the Book of Revelation (Figure 4).

The number of possible words, according to Webster's 3rd New International Dictionary, is 470,000^[11].

So, the probability of 'Amen' being the last word is as follows.

$$\frac{1}{470000} = 2.128 \times 10^{-6} = 2.128 \times 10^{-4} \% \quad \text{(Equation 9)}$$

For one mustard seed painted gold, you would need 470,000 other mustard seeds in a jar, so a total of 470,001 seeds would be required.

According to the 2nd Edition of the Oxford English Dictionary there are a total of 218,632 words^[12].

So, the probability of 'Amen' being the last word is as follows.

$$\frac{1}{218632} = 4.574 \times 10^{-6} = 4.574 \times 10^{-4} \% \quad \text{(Equation 10)}$$

For one mustard seed painted gold, you would need 218,632 other mustard seeds in a jar, so a total of 218,633 seeds would be required.

Now, 'Amen' is mentioned 77 times in the whole Bible (Figure 3).

The total number of words in the Bible is 790,849^[1].

As these outcomes are independent of each other, Mathematical Rule 1 is used.

So, what is the probability of the 77 mentions of 'Amen' occurring within the whole Bible?

$$\frac{1}{77} \times \frac{1}{790849} = \frac{1}{60895373} = 1.642 \times 10^{-8} = 1.642 \times 10^{-6} \% \quad \text{(Equation 11)}$$

For one mustard seed painted gold, you would need 60,895,373 other mustard seeds in a jar, so a total of 60,895,374 seeds would be required.

Changing the default settings of 'N-gram generator'^[13] to a trigram (3) word setting, the results are obtained in Figure 7.

Steps

1. Copy a text (from a website, a book, a larger corpus, et cetera).
2. Paste the text into the input area below. You don't have to remove weird characters, tags, white spaces and new lines — the script does it for you.
3. Set 'ngram' to the desired number of words or leave at 2 (bigrams) and set the number of results wanted (or leave at 50). If you're going to sort on probability (see 'explanation'), it can be useful to set a minimal frequency for the n-grams included in the list.
4. Click 'Generate ngrams' and wait a bit.

Input and settings

Choose preferred settings, or leave at default.

N-gram: Top: Sort: Minimal frequency:

Paste a text to analyze below:

THE HOLY BIBLE

CONTAINING THE OLD AND NEW TESTAMENTS

TRANSLATED OUT OF THE ORIGINAL TONGUES AND WITH THE FORMER TRANSLATIONS
DILIGENTLY COMPARED AND REVISED BY HIS MAJESTY'S SPECIAL COMMAND

Words to exclude (space separated):

Generate n-grams

Results

[Save as csv file](#)

No.	N-gram	Frequency	Probability	Strength
1	of the lord	1746	0.05	0.37
2	the son of	1452	0.02	0.16
3	the children of	1355	0.02	0.15
4	the house of	888	0.01	0.09
5	saith the lord	855	0.67	4.51
6	out of the	817	0.29	1.95
7	and i will	672	0.01	0.08
8	children of israel	644	0.36	2.3
9	the land of	617	0.01	0.06
10	the sons of	571	0.01	0.06
11	and the lord	568	0.01	0.07
12	and all the	562	0.01	0.07
13	the lord and	540	0.01	0.05
14	unto the lord	511	0.06	0.35
15	and he said	511	0.01	0.06
16	the lord god	477	0.01	0.05
17	the king of	473	0.01	0.04
18	came to pass	457	0.22	1.33
19	said unto him	456	0.11	0.7
20	it came to	454	0.07	0.44
21	thus saith the	430	0.58	3.49
22	and they shall	425	0.01	0.05
23	and thou shalt	417	0.01	0.05
24	and it came	398	0.01	0.05
25	the hand of	397	0.01	0.04
26	of the children	377	0.01	0.06
27	said unto them	364	0.09	0.54

Figure 7; 3rd N-gram generator results

Table 4 shows the results as organised into phrases of 3 words up to 1,000 occurrences. Here, the probability of finding 77 occasions of 'Amen' is effectively negligible!

	A	B	C	D	E	F
1	No.	N-gram	Frequency	Probability	Strength	
985	984	sons of the	37	0.03	0.12	
986	985	4 and he	37	0.03	0.11	
987	986	before them and	37	0.02	0.07	
988	987	hath the lord	37	0.02	0.06	
989	988	out of thy	37	0.01	0.05	
990	989	ye shall eat	37	0.01	0.03	
991	990	but when the	37	0.01	0.03	
992	991	thou son of	37	0.01	0.02	
993	992	be as the	37	0.01	0.02	
994	993	be no more	37	0.01	0.02	
995	994	for he was	37	0	0.01	
996	995	he was come	37	0	0.01	
997	996	he came to	37	0	0.01	
998	997	in thy sight	37	0	0.01	
999	998	in the law	37	0	0.01	
1000	999	to be a	37	0	0.01	
1001	1000	to reign and	37	0	0.01	
1002						
1003						
1004						
1005						

Table 4; screenshot of reorganised spreadsheet results

Changing the default settings to an N-gram (5) word setting^[13], the results are obtained in Figure 8. Rearranging this in terms of the word 'Amen', in this 5 word setting this is number 875 of 1000 in 'Frequency' but having a probability of effectively zero!

	A	B	C	D	E
1	No.	N-gram	Frequency	Probability	Strength
2	875	the people shall say amen	11	0	0
3	1	and it came to pass	396	0.01	0.05
4	2	the word of the lord	258	0	0.02
5	3	the house of the lord	234	0	0.02
6	4	of the children of <u>israel</u>	163	0	0.02
7	5	thus <u>saith</u> the lord god	162	0.22	1.1
8	6	it came to pass when	142	0.02	0.11
9	7	the tabernacle of the congregation	133	0	0.01
10	8	and the lord said unto	124	0	0.01
11	9	<u>saith</u> the lord of hosts	123	0.1	0.46
12	10	it shall come to pass	120	0.02	0.09
13	11	the name of the lord	109	0	0.01
14	12	and the lord spake unto	107	0	0.01
15	13	the lord spake unto <u>moses</u>	105	0	0.01
16	14	and it shall come to	103	0	0.01
17	15	out of the land of	100	0.04	0.16
18	16	in the sight of the	99	0.01	0.04
19	17	and the children of <u>israel</u>	99	0	0.01
20	18	the lord god of <u>israel</u>	96	0	0.01
21	19	and he said unto them	95	0	0.01

Figure 8; 4th N-gram generator results

So, what are the probabilities for BOTH 'Egypt' AND 'Amen' being the final words of the first Book (Genesis) AND the last Book (Revelation) with BOTH mentioned EXACTLY 77 times?

Firstly as these outcomes are independent of each other, Mathematical Rule 1 is used.

Note that the 'N-gram generator' results cannot be used as the results for the word 'Amen' is effectively zero (Table 4 and Figure 8 refer).

Webster's 1828 Dictionary^[11]

Equation (1) x Equation (5) x Equation (9) x Equation (11)

$$\frac{1}{470000} \times \left(\frac{1}{77} \times \frac{1}{38262} \right) \times \frac{1}{470000} \times \left(\frac{1}{77} \times \frac{1}{790849} \right) = 2.523 \times 10^{-26} = 2.523 \times 10^{-24} \%$$

The reciprocal of this is 3.964×10^{25} (Result (3))

This is a huge number!

So, for one mustard seed painted gold, you would need 396,400,000,000,000,000,000,000 other mustard seeds in a jar, so a total of 396,400,000,000,000,000,000,001 seeds would be required!

Oxford English Dictionary^[12]

Equation (2) x Equation (5) x Equation (10) x Equation (11)

$$\frac{1}{218632} \times \left(\frac{1}{77} \times \frac{1}{38262} \right) \times \frac{1}{218632} \times \left(\frac{1}{77} \times \frac{1}{790849} \right) = 1.166 \times 10^{-25} = 1.166 \times 10^{-23} \%$$

The reciprocal of this is another huge number, 8.576×10^{24} ! (Result (4))

So, for one mustard seed painted gold, you would need 8,576,000,000,000,000,000,000 other mustard seeds in a jar, so a total of 8,576,000,000,000,000,000,000,001 seeds would be required!

‘Order of magnitude’ calculations (Equations 12 to 15 inclusive refer)

Given the diameter, $d_{\text{mustard seed}}$, as $2.5 \text{ mm}^{[16]}$, then the radius, $r_{\text{mustard seed}}$, is;

$$r_{\text{mustard seed}} = \frac{d_{\text{mustard seed}}}{2} = \frac{2.5 \times 10^{-3} \text{ m}}{2} = 1.25 \times 10^{-3} \text{ m} \quad (\text{Equation 12})$$

Then the surface area, $A_{\text{mustard seed}}$, assuming the shape of a seed is a perfect circle, is;

$$A_{\text{mustard seed}} = \pi r^2 = \pi \times (1.25 \times 10^{-3} \text{ m})^2 = 4.909 \times 10^{-6} \text{ m}^2 \quad (\text{Equation 13})$$

Given that the surface area, $A_{\text{USA}}^{[17]}$, is;

$$A_{\text{USA}} = 9,826,675,000,000 \text{ m}^2 = 9.826675 \times 10^{12} \text{ m}^2 \quad (\text{Equation 14})$$

So, how many mustard seeds, N , would be needed to cover the entire US?

$$N = \frac{A_{\text{USA}}}{A_{\text{mustard seed}}} = \frac{9.826675 \times 10^{12} \text{ m}^2}{4.909 \times 10^{-6} \text{ m}^2} = 2.002 \times 10^{18} \quad (\text{Equation 15})$$

Firstly, by taking Results (1) and (2), what are the equivalent surface areas (A_1 and A_2)? (Results 5 and 6 refer)
Secondly, when analysing Results (3) and (4), how many layers (L_1 and L_2), could be produced and what are the approximate heights (H_1 and H_2) of these layers? (Results 7 and 8 refer)

For 90,000 seeds (R_1)

Firstly, 90,000 (9.0×10^4) seeds would cover the following area;

$$A_1 = 9.0 \times 10^4 \times 4.909 \times 10^{-6} \text{ m}^2 = 0.44181 \text{ m}^2 \quad (\text{Result (5)})$$

This is equivalent to 4.7556 square feet^[18].

For 5,000 seeds (R_2)

In a similar vein, 5,000 (5.0×10^3) seeds would cover the following area;

$$A_2 = 5.0 \times 10^3 \times 4.909 \times 10^{-6} \text{ m}^2 = 0.024545 \text{ m}^2 \quad (\text{Result (6)})$$

This is equivalent to 0.2642 square feet^[18].

For 3.964×10^{25} seeds (R_3)

$$L_1 = \frac{R_3}{N} = \frac{3.964 \times 10^{25}}{2.002 \times 10^{18}} = 1.980 \times 10^7$$

This number of seeds would produce 19,800,000 layers covering the whole US!

$$H_1 = d \times L_1 = 2.5 \times 10^{-3} \text{ m} \times 1.980 \times 10^7 = 4.950 \times 10^4 \text{ m}$$

At a height of 49.5 km or 30.9 miles! (Result (7))

For 8.576×10^{24} seeds (R_4)

$$L_2 = \frac{R_4}{N} = \frac{8.576 \times 10^{24}}{2.002 \times 10^{18}} = 4.284 \times 10^6$$

This number of seeds would produce 4,284,000 layers covering the whole US!

$$H_2 = d \times L_2 = 2.5 \times 10^{-3} \text{ m} \times 4.284 \times 10^6 = 1.071 \times 10^4 \text{ m}$$

At a height of 10.7 km or 6.7 miles!

(Result (8))

Conclusion

It is expected that the other Bibles, particularly the NKJV, will replicate the results of the KJV every now and then since all Bibles in English are being translated from ostensibly common sources. However, the calculated probabilities would NOT be the same with these other Bibles, even though they share these sources, as the word counts differ from the KJV and even from each other!

So, what are the probabilities for BOTH 'Egypt' AND 'Amen' being the final words of the first Book (Genesis) AND the last Book (Revelation) of the KJV with BOTH mentioned EXACTLY 77 times, as compared with the chances of pulling out one mustard seed from a pile of mustard seeds?

Using linguistic phrase analysis these probabilities are equivalent to the chances of selecting one mustard seed from a layer of mustard seeds covering a surface area of between 0.26 ft^2 and 4.76 ft^2 (0.02 m^2 to 0.44 m^2). However, using mathematical probabilities based on the selection of only one word from the Webster's and Oxford Dictionaries^[11 and 12] separately, this results in the chances of selecting one mustard seed from stacked layers of mustard seeds covering the whole of the USA for a range of height of between 6 miles and 31 miles (10 km and 50 km)!

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Contact Details

Tom Wilks FHEA MA PGCE Bsc(Hons) Foundations in Christian Ministry (FiCM)
tom_r_wilks@protonmail.com