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Bible Code, Revisited

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After the Bible Code and its technical term, Equidistant Letter Sequences, was defined, its intriguing story spread in peer-reviewed publications and rose among Jewish and Christian intellectuals. A review of the evidence for and against the Bible Code follows, including the Statistical Science *journal debate, code in nonbiblical texts, code in randomly permuted texts, "mega-codes," code-testing protocol, the multiple testing problem, ambiguities in the Hebrew language and text, and word frequencies. It is concluded that while the faith of Bible Code proponents is admirable, the concept does not hold up to scrutiny.*

> *Moses went up to God, and the LORD called to him from the mountain, saying, "Thus you shall say to the house of Jacob and tell the sons of Israel … So Moses came and called the elders of the people, and set before them all these words which the LORD had commanded him." ~Exodus 19:3, 7*

> *All that was, is, and will be unto the end of time is included in the Torah, the first five books of the Bible … [A]nd not merely in a general sense, but including the details of every person individually, and the most minute details of everything that happened to him from the day of his birth until his death; likewise of every kind of animal and beast and living thing that exists, and of herbage, and of all that grows or is inert.*[1]
>
> *~Rabbi Vilna Gaon (1720–1797)*

Introduction

There has been a flurry of activity over the so-called "new discovery" of hidden codes in texts of the ancient Hebrew scriptures. The Hebrew word תורה (*Torah*) refers to the first five books of the Bible and the word is said to be encoded at the beginning and end of each of its books. Start with the first ת (*T*) in Genesis, go 50 letters to find ו (silent letter whose added vowel point makes (*o*)), then go fifty more letters to find ר (*r*), and finally fifty more letters to the ה (*h*). Thus, we have the word *Torah* "encoded" at the beginning of the first book of the Bible. This is called an "equidistant letter sequence" (ELS). Even more striking is that the same word occurs at the end of Genesis and the beginning and end of Exodus. The same occurs at the beginning and end of Numbers and Deuteronomy, except backwards.[2] This is an example of a Bible code.

The intrigue goes far deeper than single "encoded" biblical words, however. In 1994, Eliyahu Rips discovered the ELS of Israeli Prime Minister Yitzhak Rabin's name near the ELS "assassin will assassinate" (see fig. 2).[3] That year, he and journalist Michael Drosnin attempted to warn Rabin, who was assassinated on November 4, 1995.[4] Drosnin publicized the event in his book *The Bible Code* in 1997, which soared to number 3 on the *New York Times* bestseller list. The ensuing years saw the phenomenon uncritically picked up by the Christian community, with a number of pro-code Jewish and Christian publications, and few critics.

In this article I will answer the following questions in four sections: (1) What is the Bible code? How does it work? (2) Where did it come from? What is the story behind it? (3) What does the evidence

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say? (4) What does the evidence mean? Is the Bible code real? Can it really predict the future or prove divine authorship? Did Moses, the human author of the Torah, encode the word "Torah" on purpose or was it hidden there by God? I conclude with an observation on how Bible code can serve as a warning to those of us with religious zeal who seek to find God in our scientific work.

What Is the Bible Code?

The Hebrew alphabet does not contain proper vowels and the Torah was not written with them.[5] Therefore, the writing is briefer than English and subject to a higher degree of reading ambiguity. In addition, there was no capitalization and no punctuation. The language is such, however, that context easily indicates to the fluent reader what the words are. Furthermore, the writing was passed down in a tradition in which the exact meaning was explained, and large portions of the text were memorized. The correct interpretations of the words were passed on.

Converting the first sentence of the introduction to this article into a customary "window" for viewing Bible codes looks like figure 1. All punctuation and spaces are removed, and the text is strung together in columns of fixed length. Additionally, I have removed the vowels in order to sensitize English readers to the ambiguity inherent in vowel-free words.

The technical name for a single word or phrase in a Bible code is "equidistant letter sequence" (ELS). An ELS is found when you start with a given letter, then move a fixed number of letters to the second letter in a word, then the same fixed number of letters to the third letter, etc. For example, I have encoded "Torah" in the first sentence of this article as it appears in figure 1. It begins with the first letter, *T*, then 9 spaces to *R*, then 9 spaces to *H* (no vowels, see fig. 1). The fixed number of letters is called the "skip distance."

The rules for ELSs differ among code researchers, but are generally as follows:

1. An ELS may begin with any letter.
2. An ELS can go forwards or backwards.
3. An ELS can have a spacing of one to hundreds of letters; there is no theoretical upper limit, although some protocols have been developed which impose limits.
4. The spelling of words should follow an independent convention (e.g., dictionary).
5. There should be a method for discriminating between author-encoded ELSs and random ELSs.[6]

Bible code proponents believe that when ELS words or phrases overlap, the association between them is significant. For example, the Hebrew name for Jesus, *Yeshua*, is an ELS in our example that overlaps with "Torah."[7] This could be used to argue that "*Yeshua* is in the Torah." The most famous example of an overlapping code example is Eliyahu Rips's assassination of Prime Minister Rabin code, see figure 2. Therefore, for the purposes of this article, we will consider "Bible code" to be "the belief that God has put hidden messages into the Hebrew scriptures (at least in the Torah, but possibly in the rest) that are found as ELSs which, taken in proximity to one another, infer meaningful messages." Some codes are believed to refer to events, whether past or future, but there is no limit to that which codes may refer.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
T	H	R	H	S	B	N	F	L	R	R	Y	F	C	T	V	T	Y	H	W
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
V	R	F	L	T	V	R	T	H	S	C	L	L	D	N	W	D	S	C	V
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
R	Y	F	H	D	D	N	C	D	S	N	T	X	T	S	F	T	H	N	C
61	62	63	64	65	66	67	68	69	70	71	72	73							
N	T	H	B	R	W	S	C	R	P	T	R	S							

Figure 1. The first sentence of this article converted into a "window" or "cylinder" necessary to search for codes. Any number of columns and rows are possible, but here the window is 20 columns by 4 rows. This array enables us to see the cross between the two Hebrew words *Torah* and *Yeshua*. All spaces and punctuation have been removed, as in actual code searches of Hebrew texts. Vowels have been removed to simulate the ambiguity that vowel-free words create.

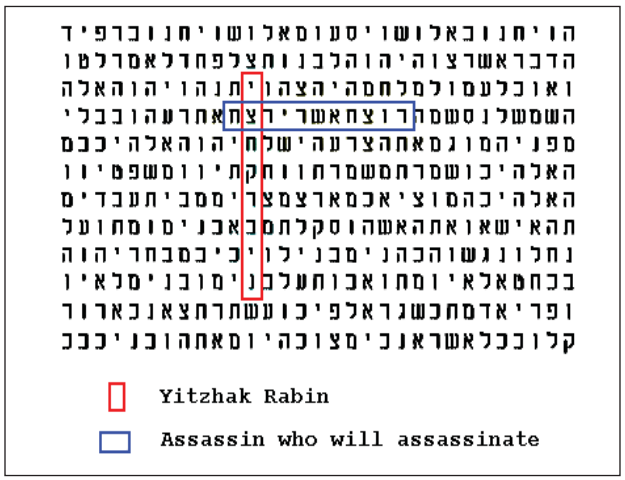

Figure 2. Taken from Michael Heiser, *The Bible Code Myth* (Self-published, 2001), 2. It is a 4,772-letter ELS!

Where Did the Bible Code Come From?

In order to best appreciate the evidence for and against the Bible code, we will trace the key parts of its history. This will provide context for the proponents and their arguments, which are covered in the next section. The terms "Bible code" and "Torah code" refer to the same thing, although Christian writers prefer the former, whereas many Jewish writers prefer the latter and believe that it is limited to the first five books of Moses.

The first-known Bible code has been traced back to Rabbi Bachya ben Asher (1255–1340). The concept was occasionally picked up by Rabbis over the centuries, manually discovering Bible codes. This enterprise culminated in the great Czechoslovakian Rabbi Weissmandl who survived the holocaust, but whose notes were destroyed. Israeli Avraham Oren was heir to the fruit of this work and became the first to search for codes with computers in 1982.[8] Oren passed his knowledge of Bible codes to Eliyahu Rips.

In 1985, Rips teamed up with Doron Witztum and Yoav Rosenberg. Around this time, the concept of Torah codes spread through the Jewish community because the Jewish educational outreach, Discovery Seminar, which was hosted around the world, added Torah codes as a topic.[9] After producing various Torah code results reported in Discovery Seminars, Witztum, Rips, and Rosenberg decided upon a scientific experiment to demonstrate the reality of the codes. They used criteria to fix names and dates of famous men of Israel throughout history to see if their occurrence in the Torah was at a statistically significantly higher incidence than expected by chance.

Witztum, Rips, and Rosenberg submitted their paper to *Statistical Science,* a top-tier statistics journal in 1988. Its extensive peer review, and mention at more Discovery Seminars, attracted the attention of mathematicians, statisticians, and cryptologists of the highest caliber.[10] One such figure was Harold Gans, then senior cryptologist (code-breaker) for the US National Security Agency. Gans was a skeptic who tested the claims of Witztum, Rips, and Rosenberg, found them to hold up, and became a believer.[11] Torah codes reached such a level of popularity that commercial software began to be produced.[12] The Witztum, Rips, and Rosenberg paper was finally published in 1994, adding a mark of scientific credibility to the growing industry.[13] Shortly thereafter, the nonreligious American journalist Michael Drosnin published his first code book in 1997, *The Bible Code,* which brought the subject into wider public recognition.[14] The following year saw *Cracking the Bible Code*[15] and *The Mysterious Bible Codes,*[16] which popularized the idea in the English-speaking Christian world.

Significant academic critics also expressed themselves with nonpeer reviewed papers posted on the internet, and poignant exchanges with code proponents.[17] In 1999, the first peer-reviewed academic criticism emerged: the *Statistical Science* response to Witztum, Rips, and Rosenberg,[18] followed by the first critical English book, *Who Wrote the Bible Code?*[19] Many other pro-code books were produced within the next six years, including two others by Drosnin. Despite the refutation, the phenomenon had taken root. The academic criticism eventually quelled the sensationalist claims of Drosnin and other code popularizers, and put the code researchers on the defensive.

In 2005, the code researchers went back on offense. Edwin Sherman, an actuary with an MA in mathematics, published *Bible Code Bombshell,* describing his skepticism and reluctant conversion.[20] That same year, Rips's first major English Bible code book appeared.[21] In 2006, the eighteenth annual International Conference on Pattern Recognition featured a number of pro-code papers.[22] Although the latest wave clarified pro-code research, the

arguments for the validity of the codes were still largely subject to the original critiques, and the critics in the academic mathematical community had largely moved on. Today, in light of the mathematical criticism, much of the sensationalism, including the predictions, has fallen away. Today, the Jewish Israel-based group and the Christian US-based group have both moderated their positions and withdrawn from academic outlets. Their work continues and is disseminated on their websites and through group contact.[23] New publications have tapered off, but the industry remains, including websites, options in Bible code software,[24] a Da Vinci Code-like thriller,[25] a code research society to join,[26] and even the prediction of Trump beating Clinton.[27] Only one other critical book has been published in English.[28]

What Does the Evidence Say?

Robert Kass, the executive editor of *Statistical Science* when the 1994 Witztum, Rips, and Rosenberg paper was published, wrote:

> [W]hen the article "Equidistant Letter Sequences in the Book of Genesis," by Witztum, Rips and Rosenberg, was examined by reviewers and editorial board members for *Statistical Science*, none was convinced that the authors had found something genuinely amazing … However, even though the referees had thought carefully about possible sources of error, no one we asked was willing to spend the time and effort required to reanalyze the data carefully and independently. Rather, we published the paper in the hope that someone would be motivated to devote substantial energy to figuring out what was going on and that the discipline of statistics would be advanced through the identification of subtle problems that can arise in this kind of pattern recognition … Thus, in introducing that paper, I wrote that it was offered to readers "as a challenging puzzle."[29]

In the paper, Witztum, Rips, and Rosenberg described an experiment whereby they objectively obtained the names of thirty-two great men of Israel throughout history and used a computer to search for their names and dates in the book of Genesis. They compared the Torah results against other Hebrew documents, and random permutations of Genesis. The higher occurrence of the name-date pairs in Genesis than in the other texts was highly statistically significant (p-value = 0.000002). This means there is a 0.0002% probability that, if there were no Torah code, these results would obtain. This scientific support, followed by the tragic prediction of the assassination of Prime Minister Rabin, undergirded the launch of an entire Bible code industry which might otherwise have been dismissed as textual astrology.

In 1999, however, Brendan McKay, Dror Bar-Natan, Maya Bar-Hillel, and Gil Kalai answered the challenge posed by *Statistical Science.* Editor Kass wrote,

> [McKay, Bar-Natan, Bar-Hillel, and Kalai] report their careful dissection and analysis of the equidistant letter sequence phenomenon. Their explanations are very convincing and, in broad stroke, familiar. They find that the specifications of the search (for hidden words) were, in fact, inadequately specific: just as in clinical trials, it is essential to have a strict protocol; deviations from it produce very many more opportunities for surprising patterns, which will no longer be taken into account in the statistical evaluation of the evidence. Choices for the words to be discovered may seem innocuous yet be very consequential. Because minor variations in data definitions and the procedure used by Witztum et al. produce much less striking results, there is good reason to think that the particular forms of words those authors chose effectively "tuned" their method to their data, thus invalidating their statistical test. Considering the work of McKay, Bar-Natan, Bar-Hillel, and Kalai as a whole it indeed appears, as they conclude, that the puzzle has been solved.[30]

In statistics, the problem is referred to as "overfitting." It means that the dependent variable (the name-date pairs) is such that it has a special match with the Genesis text so that if the names are slightly changed, but the protocol remains the same, then the phenomenon disappears. Of the thirty-two names, there are many spelling variants, actually producing about 298 name appellations. McKay, Bar-Natan, Bar-Hillel, and Kalai showed that using different spellings of the names in the name-date pairs no longer resulted in statistically significant findings when compared with other Hebrew texts, or a permutation of Genesis.[31] In addition to this, additional problems were raised by critics, including the non-intuitive and complex distance measure,[32] the failure to use reviewer Persi Diaconis's exact procedure for computing the statistics,[33] the absence of an alternative hypothesis which prevents the power of the Witztum, Rips, and Rosenberg test to be computed,

and a justification for selecting Genesis over other books of the Torah (the test does not show any significant effect in the other four books).[34]

If the Bible code were real, then non-overfitting examples should be able to be produced. They are not.[35] McKay, Bar-Natan, Bar-Hillel, and Kalai have shown that for other word lists, the results have the same chances in other Hebrew texts, including a permutation of the Hebrew Bible. That is not to say there are no other phenomena. There are many. It is just that the rules for finding overlapping ELSs make the probabilities of finding interesting results quite high. McKay searched for appellations of "Jesus the Nazarene" and "Jesus the Messiah" in Genesis, obtaining a probability of 0.172, meaning there is a 17.2% probability of obtaining these appellations in Genesis due to pure randomness (p-value). By contrast, for the first 78,064 letters of *War and Peace* (same number of letters as Genesis), McKay obtained probability 0.000001, which included the results in figure 3.[36]

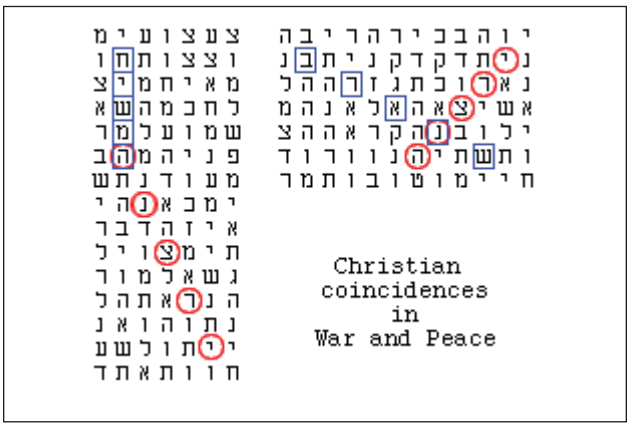

Figure 3. Brendan McKay code in the Hebrew translation of *War and Peace*, containing left to right: "The Messiah" crossing "The Nazarene" and "Son of Man" crossing "The Nazarene."[37]

Today's most mathematically responsible pro-code community consists primarily of the Israel-based predominantly Jewish group represented by Rips, and the US-based predominantly Christian group of Sherman. In what follows, for simplicity, I will refer to the position and arguments of both groups by the name of their representatives. It should be kept in mind that the leaders represent not only teams of people devoting time to finding Bible codes, but also a set of followers with code software who submit findings. The two groups' responses to McKay, Bar-Natan, Bar-Hillel, and Kalai differ in their approach.

Sherman's case is found on his website, which presents the current version of the arguments made in his 2005 book. He argues that McKay's comparable codes in *War and Peace* are out of date, because far more extensive (i.e., statistically unlikely) codes have been found since. He calls them "mega-codes." In other words, Sherman implicitly admits that the older, less extensive codes may not be real, but he argues that the newer and more extensive codes are real.[38] His primary example is the Isaiah 53 cluster, with 1,600 terms and a claimed probability of 1 in 1^{195}.[39]

While the picture and the numbers look really impressive, there is a statistical explanation. It is an example of data snooping, which suffers from the multiple testing problem. Rips himself, who does not believe in Torah codes outside of the Torah, indirectly suggests this of Sherman's work.[40] Sherman has not prespecified a scientific protocol prior to searching, but, rather, has included every word or phrase he can find that relates to Jesus which crosses the Isaiah 53 passage, thereby removing any meaningful reference for the small probability. Sherman seems to ignore this criticism, resting his argument on the weight of the impossibly small probability.

There is an additional problem with this result. If you take a random text, pick a passage and a topic, and search for words and phrases of any ELS related to the topic, you are guaranteed to obtain numerous "hits." I purchased the *Keys to the Bible* software for $55. Having heard that the name of "God" (not sure which name) was encoded repeatedly throughout the Book of Esther with skip distance in the 20s, I wanted to check it out myself. I searched for *Yahweh* and found hundreds of hits (greater than the expected number the program supplies), but no regular pattern throughout the book. Same with *Elohim* and *El*. I discovered that by playing around with different words of different skip distances from the electronic dictionary, most words appeared in numerous places. This is simply a result of the flexibility of the "rules" for finding code: any possible skip-distance, forwards or backwards, any words, and possible multiple spellings.

The approach of Rips's group is entirely different from that of Sherman's. They addressed the criticisms by strengthening their statistical procedure, as reported in their impressive tome, *Torah Codes*.

Although I believe its implementation is still flawed, this is the kind of scientific approach which could be used to discover such a code, if it existed. It begins with a seven-step protocol:

1. Select key word sets a priori.
2. Fix the ELS skip size range.
3. Determine the size of the window (cylinder) within which the search is conducted.
4. Prespecify the alternative text to be searched.
5. Select a measure of the minimum window (cylinder) for comparison.
6. Hypothesis test: "Null hypothesis of no Torah Code effect against an alternative hypothesis that the observed table in the Torah text (*D* = design) is significantly more compact than what would be expected to be observed by chance if there were no Torah Code effect (*M* = monkey/random)."[41]
7. Statistical Analysis Method: For the method, let *E* = evidence. We want to know the probability that the key word set appears by design, given the evidence, *P(D|E)*. Compute *P(D|E)* using Bayes's Theorem.[42]

The p-value is obtained from step seven for a pair of words as follows. Find the table in the Torah that has the smallest area, *A*. Then, for random texts *1, 2, 3, …, N*, find the smallest area of each of them. The p-value is the number of random texts whose smallest area is below *A*, divided by *N*.[43] If there are more than two words, there are two additional protocols. For the second protocol, with a priori words, they rationally use the longer words to set the size of the table. For the third protocol when there are more than two words, which words fix the table is not determined a priori. Instead, the size of the table is fixed, and the p-value is determined by the proportion of random texts which have equal to or more than the number of ELSs as the Torah table. This is essentially the first protocol, except the table size is fixed, instead of letting the two words fix it. When a table is developed starting with the first protocol and words are added, the minimum p-values are used, multiplied by the number of word pairs to conservatively adjust for multiple testing.[44]

The strength of Rips's method is that it offers a way to perform a valid statistical experiment, since it has an objective protocol. The method of Sherman lacks this feature and is therefore subject to the charge of data snooping. Nevertheless, the method of Rips could still use strengthening in step one, as it is still subject to manipulation on this point. The most thorough and academically respectable work to date is his "great men of Israel" experiment, but it is in the spelling of the names in the 1994 Witztum, Rips, and Rosenberg paper that McKay, Bar-Natan, Bar-Hillel, and Kalai legitimately exposed this "wiggle room," showing how to switch the result from the statistical significance of the Torah to the control text. Rips rightly replied that the possibility of this manipulation need not imply that it happened.[45] Nevertheless, if merely changing the letters of the same set of words reverses the outcome, the experiment loses its force. Therefore, I do not consider the great men of Israel experiment as evidence for the existence of the Bible code. Another source of "wiggle room" is found in code searches with more than two words. The selection of the order of the words should be prespecified.

The other point at which I remain unconvinced by the Bible code argument is with the multiple testing problem. If Rips's level of significance of 0.02 is used, then if it is true that there is no code, every fifty (50*0.02=1.00) experiments will yield a significant "code," on average. Whereas Rips cites a priori words for which experiments were conducted, and uses a conservative multiple testing adjustment for these cases,[46] I am referring to something different. The former is a correct multiple testing adjustment for multiple words in a single experiment. I refer to multiple experiments. What is very rarely addressed are the experiments which yielded no significance.[47] A clear example is the purported November 2004 US election code submitted to Rips by a member of his group.[48] How many unsuccessful searches for codes have Rips and his group conducted? The case of Sherman's team is subject to the same criticism with their organized society headed by a small team of code researchers. The very practice of having a community that searches for these codes and submits findings, begets an environment which is subject to the multiple testing problem. This is analogous to firing multiple bullets at a wall, and then drawing a bull's eye around the result, instead of first drawing the bull's eye and then firing to see how you did.

Despite the above critiques, Rips has created the technical apparatus to produce a convincing experiment, or better, a series of public experiments, to test the Bible code hypothesis. Such a series of experi-

ments should use Rips's seven-step protocol. The key would be to assemble a small group of code proponents and opponents and have them agree on a list of word pairs, their spelling, their order, and the control texts. The word pairs should not have been knowingly searched previously. One way to do this could be to use a random procedure for word selection, subject to rational criteria agreed upon by all experimenters.[49] A series of several experiments could be determined, and the a priori details carefully documented. From there, conducting the experiment would be routine. If such experiments were conducted, I believe that they would show that the Bible code phenomenon is not real. However, if the results showed clear statistical significance after scrutiny, I would follow Harold Gans and Edwin Sherman and become a believer. In fact, Barry Simon called for such an experiment, but the opposing sides never agreed upon the details; instead, each produced their own version with results equivalent to the Witztum, Rips, and Rosenberg 1994 paper.[50]

The following three additional problems remain for the approaches of both Sherman and Rips. First, there is no rule for determining the exact word or phrase. Since in Hebrew there are no vowels, the context is important for determining the meaning of words that could otherwise be ambiguous. For example, consider the following two phrases in figure 4, "Abraham died" versus "Prime Minister died [in] July." By simply placing a space between the letters of Abraham's name, two words are formed that convert the phrase from a biblical quote to a provocative prediction. The use of contextless Hebrew phrases is inherently ambiguous. Sherman agrees, saying that "it is quite frequently impossible to come up with a unique reasonable translation."[51] The arbitrary selection of a context adds another wiggle parameter in the search for codes.

אכרהם	מזח	רהם	אכ	מזח
Abraham	died	Prime Minister	July	died

Figure 4. On the left is the phrase "Abraham died." On the right is the identical set of Hebrew characters, but the first two letters in Abraham's name (counting from the right) have been separated to say "The Prime Minister died [in] July." This is the phrase used by Michael Drosnin's Rabin assassination code.

Second, according to Hebrew scholar Michael Heiser, the most devastating argument against Bible codes is due to uncertainties in the precise form of the Hebrew text.[52] Although the manuscript of our ancient Hebrew text is very standard, and was transmitted with remarkable care exceeding that of any ancient document, there are alternative manuscripts and variations in it.[53] The insertion or deletion of a single letter will change purported codes. This can be seen by looking at the example in figure 1. If a single insertion or deletion occurred in positions 1 through 58, one or both of the encoded words would be gone and the code would disappear. Both Rips and Sherman[54] admit the changes and believe that the LORD has made it such that the codes are in the *current* text. Rips is most explicit by boldly stating,

> Since we do find codes in the Koren text of today, if we assume transmission errors then we may also assume that God put an imperfect code in the text of Mount Sinai and that after any alleged copy errors, the imperfect code becomes perfect.[55]

While this is a valid retort, it forces them well outside their Jewish and Christian theological traditions regarding the accuracy of the Hebrew Bible.[56]

Third, physicist Randy Ingermanson developed a mathematical method to determine whether the biblical text contained more encoded words than a random text of the same length. The way he did it was to use the following steps:

1. Generate a table of digrams and trigrams and their frequencies from the biblical text. A digram (trigram) is the first two (three) letters of all of the words in the text. The initial two- and three-letter combinations contain order specified by an author.
2. Create a "skip-text" for each skip-length. For example, the first skip-text with skip 20 of the first sentence of this article would be "TVRN." The second one would be "HRYT." To see these, look at figure 1 of this article. The first skip-text with skip 20 is the first column; the second is the second column, and so on.
3. Every skip text is checked for the digrams (trigrams), and the mathematical entropy—lack of order—is computed for both the biblical and random texts. If the biblical skip-text contains more ELSs, then the digrams and trigrams will exhibit more order, or less entropy.

After calculating the results, the p-value for digrams with 50 or more letters is 0.38, and for trigrams, it is 0.14.[57] This proves that there is no statistically

significant difference in the number of encoded words between the biblical and random texts with skip-sizes of 50 or more. Sherman does not reply to this argument,[58] but Rips's response is interesting:

> The Torah Code hypothesis is completely consistent with a condition that the number and kind of ELSs are exactly what would be expected by chance. The Torah Code hypothesis states that the placement of the ELSs in the Torah text is skewed in such a way that there is a higher frequency of ELSs of related key words that appear closer together than expected by chance.[59]

In other words, Rips affirms Ingermanson's work, but he points out that the same number of ELSs in the Torah versus random texts does not invalidate the hypothesis. The reason is that the Torah code hypothesis is *what* the words are ("related key words") and *where* they appear ("closer together"), not a greater number of ELSs.

What Does the Evidence Mean?

At last, let us try to make sense out of all of the preceding evidence. We will begin with a summary, followed by evaluation and interpretation.

Summary of the Evidence

In favor of the Bible code are the following points. They are given in the order they appeared in this article, which roughly follows their appearance in the literature:

1. Torah example: The word "Torah" appears encoded at the beginning and end of Genesis, Exodus, Numbers, and Deuteronomy with an ELS of length 50.
2. Prediction: Rips and Drosnin in 1994 successfully, albeit tragically, used a Bible code to predict the assassination of Prime Minister Yitzhak Rabin (d. 1995).
3. Peer-reviewed paper: Witztum, Rips, and Rosenberg demonstrated a statistically significant difference in Bible code phenomena favoring the Torah over other texts in their great men of Israel experiment.
4. Code search protocol: Rips's group provided a scientific experimental protocol which they used to find many statistically significant examples of ELS.
5. Mega-codes: Sherman's group documented extensive ELS clusters with extremely low probabilities.

Opposed to the Bible code are the following points:

1. Peer-reviewed refutation paper: McKay, Bar-Natan, Bar-Hillel, and Kalai demonstrated that the great men of Israel experiment was subject to overfitting.
2. Code search protocol rejoinder: An independent objective verification of Bible codes using a valid code search protocol has not been conducted.
3. Mega-codes rejoinder: The extremely low probability of the combined discoveries of numerous research group members is the result of the multiple testing problem.
4. ELS "hits" guaranteed: Casual use of Bible code software reveals that numerous ELS hits occur in searches.
5. Meaning: There is no rule for determining the spelling or meaning of a given word or phrase.
6. Hebrew text: There are variations in Hebrew Bible manuscripts, even a single one of which alters conclusions.
7. Word frequencies: It has been shown that the biblical text does not contain more ELSs than a random text.

Evaluation and Interpretation of the Evidence

In order to make sense of the evidence presented in this fascinating debate, it is helpful to distinguish between existence claims and interpretive claims. Existence claims are those assertions that there really are overlapping ELSs in the Torah, or the entire Hebrew Bible, that were inspired by God. Interpretive claims assume existence, point to specific instances, and describe the meaning of those specific instances. This distinction is not made in the literature, and some arguments—both pro and con—address one or both claims. In the preceding, the arguments for existence amount to four: (1) human-discovered ELSs, for example, the 50 ELSs Torah phenomena; (2) a successful prediction; (3–4) computer search experiments with scientific protocol; and (5) ultra-low probability phenomena.

Let us evaluate the existence arguments in turn. While (1) is truly fascinating, how much evidence does it provide for the existence of Bible code? There are several considerations. Of all the human-discovered ELSs of which I am aware, the Torah phenomena are the most impressive. The others are

readily explained by the counter arguments for (4). Therefore, my remaining considerations are limited to the 50 ELSs Torah phenomena. First, they could have been placed by Moses or a later redactor. This would support the existence of a kind of Bible code, but not the divinely inspired kind which is debated in the literature. Second, although (1) is a collection of ELSs, it does not meet the definition of a Bible code because the words do not overlap or have close proximity. Third, the word of (1) occurs numerous times in the texts of its occurrence, whereas in many of the purported codes of (3–5), the words do not occur in the text and may not have even existed at the time of writing. Fourth, even if we grant the existence of (1) for the sake of argument, there is no interpretive issue such as there is for Bible codes. It is the word TORAH; it occurs in the Torah. It is more like an authorial stamp—there is no provocative assassination prediction or Messiah claim or anything like that. It is rather boring. In conclusion, while (1) is fascinating, it is not actually a Bible code, and therefore it should not be considered as evidence for Bible code. If there really were authorially intended ELSs in the Bible (whether human or divine), this is probably the best candidate—but I think it is basically a dead end.

In order to evaluate evidence (2),[60] which is presented as a successful predictive prophecy, there are only two possibilities: either it was a real Bible code or it was not. If it was not, let us consider possible explanations. Apart from a brute coincidence, I can think of two: one natural and the other supernatural. The natural explanation is that Rips was running Bible codes with a Prime Minister's name, Yitzhak Rabin. It was 1994, during the days of acrimonious debates and rallies about ratifying the Oslo Accord. Some were worried that opponents were publicly calling for Rabin's death as a traitor, and everyone knew when and where he would be at these rallies. Anybody could get close to him.[61] Among the codes generated on Rips's computer was "assassin that will assassinate" crossing "Yitzhak Rabin." It is natural that he might want to warn his brave Prime Minister. The supernatural explanation is that God performed an act of prophecy in 1994 through Rips in the same way that God spoke through Caiaphas regarding Jesus.[62]

> Then one of them, named Caiaphas, who was high priest that year, spoke up, "You know nothing at all! You do not realize that it is better for you that one man die for the people than that the whole nation perish."
>
> He did not say this on his own, but as high priest that year he prophesied that Jesus would die for the Jewish nation, and not only for that nation but also for the scattered children of God, to bring them together and make them one. (John 11:49–52)

In this instance, the apostle John heard God speaking through a person who meant one thing while God was saying something else. I believe God may have done something similar through Rips.[63] Thus, on the one hand, there are reasonable explanations for evidence (2) not being a real Bible code. On the other hand, if evidence (2) was a real Bible code, then it violates responsible Bible-code protocol. Both Rips's and Sherman's groups warn *against* using Bible code for prediction.[64] Therefore, while evidence (2) may be amazing to some, either it is not a Bible code or, if it is, it is not a valid use of Bible code. It should therefore not count for much, if any, evidence in the cumulative case for the Bible-code hypothesis.

As for evidence (3–4), the great men of Israel experiment was shown by McKay, Bar-Natan, Bar-Hillel, and Kalai to be due to overfitting. Rips's counter-response with the seven-part protocol is the right scientific response, permitting an objective external validation—but that experiment has not been performed at the time of this writing. Despite his claims to the contrary, the examples provided in his book are also subject to the multiple testing problem, given his community of code searchers. The counter-arguments have neutralized the evidence of (3–4).

Turning to evidence (5), Sherman's mega codes are a classic example of the multiple testing problem and are therefore statistically invalid, no matter how impressive. As a demonstration of the underlying problem, McKay has shown analogous phenomena in nonbiblical texts. The evidence of (5) can appear persuasive to the uncritical eye, but it does not warrant support for a Bible code.

The force of con argument #6, regarding Hebrew manuscript variations invalidating the code, is legitimate. As such, it has forced Rips's and Sherman's groups to adopt a theologically awkward position. While it is a logically adequate reply, and it does seem necessary for their position, it is not satisfying to me. An alternative rejoinder would be that Bible code exists in the autograph manuscripts, which we

do not have, but our manuscripts are good enough that, within sections, it is plausible that autograph Bible codes may still exist. This would cast doubt on high skip distance ELSs, like the Rabin assassination code (4,772 letter ELS), and it would severely undermine the certainty of any proposed codes, but it would defend the theory of Bible code while according better with the doctrine of the inspiration of scripture. Less-sophisticated code proponents do not address the issue.

Having addressed the existence claims, let us turn to the interpretive claims. Pro arguments (2) and (5) combine existence and interpretation. Please see remarks in the preceding paragraphs regarding argument (2). For (5) mega-codes, a text is chosen for a particular theme (e.g., Isaiah 53 for "Jesus"). Next, words related to the theme are searched for overlap with the text. With the help of a community of supporters, "hits" eventually turn up and are recorded (e.g., "God has atoned" and "evil Roman city"). There is no scientific method employed. No alternative hypothesis is considered. It appears that any word or phrase that may be related is included.[65] As a result, given the ease with which to generate hits (con argument #4), it is virtually inevitable that a Bible code will be produced on the particular theme. Therefore, it really is not surprising when such a Bible code is produced because there is no baseline (null hypothesis, protocol) for comparison (con argument #2).

Turning to the con arguments, #5 Meaning and #7 Word Frequencies further reduce confidence in interpretations. Suppose there really is a Bible code. Given the ambiguities for determining which word(s) overlap, how can one determine the meaning of the individual words? The work of Ingermanson has shown that there are not more words encoded in the Hebrew Bible than in other texts; this is a very helpful fact. Rips's rejoinder—it is not the number of words but the actual words and their locations—nullifies the con argument. Nevertheless, the fact that there are around the same number of hidden words in other texts supports the hypothesis that hidden meanings can also be found in other texts. How does one distinguish the real Bible code from spurious randomly occurring hidden words?

To summarize, evidence (5) is interesting and impressive, but ultimately unconvincing and could be shown in other texts. Evidence (3–4) is scientific and holds potential for demonstration, but the current versions have not succeeded in an adequate demonstration. Evidence (2) has drawn much attention, but stands as a one-off event, violates Bible-code protocol, and is therefore inadmissible. While evidence (1) may be legitimate, it is a single ELS and fails to meet the definition of Bible code. It should therefore be classified as a different kind than computer-assisted Bible codes, invalidating it as evidence for the Bible-code hypothesis. Taking everything together, all of the evidence is either invalid (1–2) or refuted (3–5) at this time. Furthermore, even if Bible codes turned out to be real, there is no reliable means of interpreting them. I have attempted to show that the current state of evidence is that the positive case for Bible code is lacking whereas the negative case against Bible code is strong. I therefore remain unconvinced of the existence of the Bible code.

Conclusion

There are sophisticated, active Bible-code communities today in both Judaism and Christianity. Due to academic criticism, the sensationalism has been successfully cleared from the field. Proponents find themselves forced into affirming an awkward theological stance, and their current practices are subject to the charge of both data snooping and "wiggle room." As a result, they have moved out of the academic arena they once occupied and propagate their views primarily online. While I applaud their sincerity and their faith, and I do not question their personal integrity, nevertheless when the evidence is put into the light of the broader statistical fallacies, I find that I cannot embrace the code, no matter how much I might wish that it were true.

Given all of the above, I feel that a sociological remark is in order. Contained within the span of the modern history of Bible code (1980s forward), we have witnessed the emergence of a sophisticated belief with strong theological and scientific connections, but which is demonstrably wrong. Zeal has clouded good judgment. A small industry has emerged around it, with enough infrastructure, adherents, and momentum that it may continue for many years. Already there is a polarization between groups. Such would never have been able to take root if it were not for strong faith communities wanting to believe a message like this. Could this

be a microcosm of parallel Jewish and Christian sociological movements throughout history? Could this be a reason why the unbelieving world looks at the faith-claims of our communities and chooses to pass them over, lumping them in with the likes of the Bible code? I do not believe that the Bible code is real, and so I identify with the critics. On the other hand, I identify with the spirit and the goals of the Bible-code proponents, and more often I find myself on the side of the fence they currently occupy. Is my zeal for other areas of my faith clouding my good judgment? This tension has enabled me to see, with greater clarity than ever before, both the sociological power and liability of our faith communities when new ideas are involved. There are powerful lessons to be mined here.

Even if the code were real, there would be no rule for surely discriminating real from spurious codes. Rips's group asserts that codes exist only in the Torah. Sherman's group has moved to mega-codes, those with hundreds of words or phrases, which statistically dwarf those of Rips. Who is right? Even if this were resolved, there is still no clear biblical standard for how to interpret them. Therefore, until a public experiment is conducted (one with a protocol agreed upon by both sides and no wiggle-room word lists), and found strongly significant, I will remain unconvinced. ✧

Notes

[1]Introduction to the *Sifra Ditzniut*, taken from Jeffrey Satinover, *Cracking the Bible Code* (New York: Harper Paperbacks, 1998), 2.

[2]I have personally verified the codes at the beginning of Genesis, Exodus, Numbers, and Deuteronomy. There is a purported code in Leviticus, but it is "rather more complex," according to Gerald Goodhardt, "Response to David J. Bartholomew, Statistics and Theology," *Journal of the Royal Statistical Society*, Series A, vol. 151 (1988): 165. Goodhardt's explanation of the step size of 50 regards the 49 letters: "The number seven has of course always had a special significance, and even sevens even more so."

[3]Michael Drosnin, *The Bible Code* (New York: Simon and Schuster, 1997), 13–52.

[4]Ibid.; see also one of the most detailed histories of Bible codes, http://www.realbiblecodes.com/torah_codes/torahhistory/torah-code-history-2.php.

[5]In the Torah example, the *o* is due to a vowel point on the silent consonant vav (ו) and the *a* is due to a vowel point on the consonant hay (ה).

[6]It is this fifth rule which separates the nonmathematician code proponents from the mathematical code proponents. After the professional academic criticism became known, the latter group has largely disappeared.

[7]It begins with the eighteenth letter, "Y," with a spacing of 20 letters: "YeSHua." Recall that the vowels have been removed to help the English reader appreciate the room for variation. This letter sequence could also spell, "Yes, hi."

[8]Satinover, *Cracking the Bible Code*, 26.

[9]Discovery Seminars are conducted by the orthodox yeshiva *Aish HaTorah*, which means "Flame of the Torah."

[10]For example, Andrew Goldfinger, senior physicist at Johns Hopkins University, and Persi Diaconis, professor of mathematics and statistics at Stanford University; see also Randall Ingermanson, *Who Wrote the Bible Code*? *A Physicist Probes the Current Controversy* (Colorado Springs, CO: WaterBrook Press, 1999), 191, 218.

[11]Ibid., 191–93.

[12]See http://ad2004.com/shopping/rankings.html for software reviews.

[13]Doron Witztum, Eliyahu Rips, and Yoav Rosenberg, "Equidistant Letter Sequences in the Book of Genesis," *Statistical Science* 9, no. 3 (1994): 429–38.

[14]Drosnin, *The Bible Code*, 181.

[15]Satinover, *Cracking the Bible Code*.

[16]Grant Jeffrey, *The Mysterious Bible Codes* (New York: Thomas Nelson, 1998).

[17]CalTech Math Professor Barry Simon wrote "The Case against the Codes" (1998), http://torahcode.us/torah_codes/code_history/TheCase.htm or http://web.archive.org/web/20140112092910/http://www.khunwoody.com/biblecodes/TheCase.htm). He also compiled a list of 55 mathematicians and statisticians who studied Bible codes and were willing to sign a public declaration of their disagreement with it. Normally I do not give much credence to such petitions, since it risks portraying that scientific conclusions are based on voting. However, in this case, the context was such that the primary organ of propagating Bible code was the Discovery Seminars, whose leadership had been led to believe that the scientific merit of the codes had been proven. The declaration refuted that belief, particularly when Persi Diaconis, the world-renowned statistician who was one of the reviewers who passed the Witztum, Rips, and Rosenberg paper, signed it. Sometime between 2015 and 2018 the website with the list of signatories was removed.

[18]Brendan McKay et al., "Solving the Bible Code Puzzle," *Statistical Science* 14, no. 2 (1999): 150–73.

[19]Ingermanson, *Who Wrote the Bible Code*?

[20]R. Edwin Sherman, *Bible Code Bombshell* (Green Forest, AR: New Leaf Press, 2005).

[21]Robert Haralick, Eliyahu Rips, and Matityahu Glazerson, *Torah Codes: A Glimpse into the Infinite* (New York**:** Mazal & Bracha Publishing, 2005).

[22]*Proceedings of the 18th International Conference on Pattern Recognition* (Hong Kong, China, August 20–24, 2006): There were seven (!) Bible code papers presented at this conference, including Harold Gans, Zvi Inbal, and Nachum Bomboch, "Patterns of Equidistant Letter Sequence Pairs in Genesis," and Robert Haralick, "Basic Concepts for Testing the Torah Hypothesis." See http://www.torahcode.co.il/english/pub_index.htm for the complete list.

[23]For Sherman, see https://www.facebook.com/Bible-Code-Digest-228790533877083/ and for Rips, see http://www.realbiblecodes.com/. Related to the preceding Facebook page was an extensive website of Sherman's Isaac Newton Bible Research Society that was active during the writing of this article. However, while in press the Isaac Newton Bible Research Society ceased and closed.

I received the following reply to my inquiry as to the reason:

> Dear Jason:
> Thank you for your kind thoughts. There were many contributing factors, but at the end we were unable to conduct new research, and our director retired. We were unable to continue at that point for financial reasons.
> Blessings to you,
> Diane James, Editor and Research Assistant
> The Isaac Newton Bible Research Society.

[24]See http://ad2004.com/shopping/index.html.

[25]Ezra Barany, *The Torah Codes* (Oakland, CA: Dafkah Books, 2011).

[26]Sherman's society could be joined by anyone, but has now closed (see endnote 23). The Israeli International Torah Code Society, affiliated with Rips, does not appear to have a web presence as of this writing, http://codesoft.freeshell.org/newslist/index.html.

[27]Matityahu Glazerson, "Donald Trump—President of the States? in Bible Code," posted on Youtube on July 6, 2016, https://www.youtube.com/watch?v=3OyopgFcv10&feature=youtu.be. Reported by World Net Daily, "Rabbi Sees Donald Trump Ascendancy in Bible Codes," posted on November 3, 2016, http://www.wnd.com/2016/11/rabbi-sees-donald-trump-ascendancy-in-bible-codes/.

[28]Michael Heiser, *The Bible Code Myth* (self-published, 2001).

[29]Brendan McKay, Leon Gleser, and Robert E. Kass, "Bible Codes Mystery Explained," Institute of Mathematical Statistics, posted September 8, 1999, http://cs.anu.edu.au/~bdm/dilugim/StatSci/PressRelease.html.

[30]Ibid.

[31]McKay et al., "Solving the Bible Code Puzzle." For a readable summary, see Barry Simon, *The Case against the Codes* (1998), http://torahcode.us/torah_codes/code_history/TheCase.htm. See also Robert Haralick's rejoinder in "Testing the Torah Hypothesis: The Experimental Protocol," *Proceedings of the 18th International Conference on Pattern Recognition*, August 20–24, 2006, 5, http://www.torahcode.co.il/pdf_files/pub/har2.pdf.

[32]The details for understanding Witztum, Rips, and Rosenberg's procedure for computing their p-values are technical. It is a statistical nonparametric hypothesis test called a permutation test. Here is a summary of their steps:

1. Obtain a list of test word pairs w and w'. (The pairs are needed in order to discriminate designed word relationships from those occurring by chance. They used all names and dates for the personalities in *Encyclopedia of Great Men in Israel* whose entries were between 1.5 and 3 columns, which turned out to be 32 entries.)
2. Define a distance measure, $c(w,w')$, between two words encoded in overlapping ELSs. $c(w,w')$ is a Euclidian-type metric accounting for start location, skip distances, and word length, then scaled onto $[0,1]$.
3. P_1 is a proximity measure where smaller values indicate that w *and* w' are closer to one another. Let random variable X = number of "close" word pairs ($c(w,w') \le 0.2$). Then $X \sim binomial(size = N, prob = 0.2)$, where N = number of word pairs in the sample where $c(w,w')$ is defined. Then

$$P_1 = P(X \ge k) = \sum_{j=k}^{N} \binom{N}{j} (0.2)^j (0.8)^{N-j}$$

which means P_1 is the probability of getting k or more close word pairs. Although P_1 is technically a probability, it is not the probability that is in focus, but rather its use as an index for ranking.

For the permutation test, P_1 was computed for 999,999 randomly rearranged word pairs, and the one correct word pair, for a total of 1,000,000 word pairs. Then the *rank order of* P_1 is the number of random P_1s below the true P_1. (In the case of ties, half went above P_1, half below.) Table 3 displays the final conclusions of the paper with the rank order of P_1 for Genesis and six control texts: a randomization of the letters, words, verses, and words within verses of Genesis; Isaiah; and the first 78,064 letters of Tolstoy's *War and Peace*. They also used an alternative proximity measure, P_2, which was like P_1 except with an exact distance for every pair instead of $c(w,w') <= 0.2$. They also computed P_3 and P_4, which were the same as P_1 and P_2 except with the title "Rabbi" removed from the names. P_1, P_2, P_3, and P_4 all appear in Table 3. Dividing the results of Table 3 by 1,000,000 gives unadjusted p-values (Witztum, Rips, and Rosenberg discuss a Bonferroni correction for the multiple testing problem, which is $4*p\text{-}value_{unadjusted}$). For P_1 the unadjusted p-values are: Genesis (0.00045), randomized letters (0.62), randomized words (0.88), randomized verses (0.21), randomized words within verses (0.32), Isaiah (0.90), and *War and Peace* (0.75). Results are similar for P_2, P_3, and P_4.

[33]Simon, *The Case against the Codes*. Footnote 40 mentions an email from Robert Haralick, who at the time was moderately interested in the codes but later became a believer. Haralick used his own distance measure with the same Witztum, Rips, and Rosenberg words, changing the p-value from 0.000002 to 0.0025. The point is not so much the p-value, but how sensitive the method is to changing the distance measure. The distance measure, "c-method," is very complicated, requiring over 6 million calculations to find the distance between two five-letter words. Simon says, "If I were attempting to assign a distance between the encodings of two words, I'd look for them as minimal ELSs and measure the number of letters between the centers of those ELSs. This simple-minded method involves computing a single distance in the text."

[34]A. M. Hasofer, "A Statistical Critique of the Witztum et al. Paper," *Talk Reason* (February 18, 1998), http://www.talkreason.org/articles/hasofer.cfm.

[35]It could be responded that Rips provided multiple such examples in *Torah Codes: A Glimpse into the Infinite*. This is true, but, while many of those examples have the appearance of being un-biased experiments, there is no record of how many such experiments were performed. This is the multiple testing problem, which is discussed later.

[36]Brendan McKay et al., "Jesus as the Son of Man," http://cs.anu.edu.au/~bdm/dilugim/Jesus/, accessed May 6, 2015.

[37]Ibid.

[38]Sherman, *Bible Code Bombshell*, 81ff.

[39]Ibid., 94.

[40]Haralick, Rips, and Glazerson, *Torah Codes: A Glimpse into the Infinite*, x.

[41]Ibid., 22.

[42]In particular, let D and M be the events that a Bible code was included by "design" or a "monkey" (i.e., random). Let E be the "evidence," which means E is a particular Bible code. Then, from the definition of conditional probability,

$$P(D \mid E) = \frac{P(E \mid D)P(D)}{P(E \mid D)P(D) + P(E \mid M)P(M)}$$

Assuming that each value of $P(E|D)$ is equally likely, the expected value of $P(D|E)$ is given as

$$1\text{-}P(E|M)\log\{(1+P(E|M))/P(E|M)\}$$

I verified the derivation of the above expression. Now, the p-value of the hypothesis test of H_0: *E is by M* vs. H_A: *E is by D* is $P(E|M)$. If $P(E|M)=0.02$, then the expected value of $P(D|E)$ is *0.9214*. *0.02* is the level of significance used in the book. This means they use a *2%* level of significance for whether to reject a particular Bible code null hypothesis, which would mean that there is at least a *92%* chance that it is designed, based on the particular Bible code. Ibid., 11–12.

[43]Ibid., 15–16.

[44]Ibid., 23.

[45]Ibid., 65. See also Haralick's website addressing the "wiggle room argument," http://www.torahcode.net/torahcode_criticism/torahcode_criticism_wiggle.shtml. This is apparently a sensitive issue, as he equates the charge of "wiggle room" to questioning his character.

[46]The conservative Bonferroni correction is used throughout. See, for example, the purported World Trade Center codes in Haralick, Rips, and Glazerson, *Torah Codes: A Glimpse into the Infinite,* 92ff.

[47]Ibid., 96 is an exception.

[48]Ibid., 162.

[49]For example, randomly select words from a Hebrew Bible dictionary, and select their pairs by using related words in their entries.

[50]See Gans's and Simons's explanation of the cities experiment in http://www.torahcode.net/primer-final-1.pdf and in http://web.archive.org/web/20131017152530/http://www.khunwoody.com/biblecodes/index.htm.

[51]Sherman, *Bible Code Bombshell*, 186.

[52]Heiser, *The Bible Code Myth*, 26.

[53]Ibid., 26ff. There is only one autograph text and, despite the fact that the general text and overall message is highly reliable, the fact remains that there are some uncertain letter variants due to transmission error.

[54]Sherman, *Bible Code Bombshell*, 214.

[55]Haralick, Rips, and Glazerson, *Torah Codes: A Glimpse into the Infinite,* 9.

[56]The first English Bible Code book following Witztum, Rips, and Rosenberg was Moshe Katz, *CompuTorah: Dr. Moshe Katz on Hidden Codes in the Torah* (Jerusalem: Kest-Lebovits, 1996). On p. 21, he favorably cites Rabbi Shmuel Hassida, "According to the Sages, the Torah is the blueprint by which the world was created … Adding or omitting even a single one of the 304,805 letters of this Divine blueprint, the Torah, could lead to the destruction of the whole world." As for Christians, the evangelical doctrine of inerrancy states that the Bible is inerrant in the no longer extant *autographs*, though the copies may vary, "Chicago Statement on Biblical Inerrancy with Exposition," Fall 1978, http://www.bible-researcher.com/chicago1.html.

[57]The p-values are computed from Ingermanson's z-scores of 0.300 and 1.110, respectively, in *Who Wrote the Bible Code?*, 133. In the same section, he shows the results for the entire Hebrew Bible. None achieve statistical significance, except the book of Numbers. He shows on p. 131ff. that the reason is due to the occurrence of repeated rare digrams and trigrams. When this section is scrambled, the statistical significance disappears.

[58]Sherman's site addresses Ingermanson's online articles, but not his book. Given Sherman's otherwise thoroughness, this appears to be an implicit acknowledgment of the validity of Ingermanson's argument.

[59]Haralick, Rips, and Glazerson, *Torah Codes: A Glimpse into the Infinite,* 69.

[60]There are two reasons for accepting the truthfulness of the claim. First, it was verified by Frank Bruni of the *New York Times* from two different sources, "Book on a Bible Code Tempts Hollywood but Not Academics," https://www.nytimes.com/1997/05/29/nyregion/book-on-a-bible-code-tempts-hollywood-but-not-academics.html. Second, if the claim were false then this would have been used as an argument against Bible code by opponents, but it has not. In fact, Rips's group is categorically opposed to using Bible code for prediction, and they expose false predictions by Drosnin, http://www.realbiblecodes.com/false-drosnin-predictions.php.

[61]See "Assassination of Yitzhak Rabin," https://en.wikipedia.org/wiki/Assassination_of_Yitzhak_Rabin.

[62]John 11:49–51 reads, "But one of them, Caiaphas, who was high priest that year, said to them, 'You know nothing at all, nor do you take into account that it is expedient for you that one man die for the people, and that the whole nation not perish.' Now *he did not say this on his own initiative*, but being high priest that year, he prophesied that Jesus was going to die for the nation." (emphasis mine)

[63]Why would God do this? Answers to this question are speculative, but possible reasons include the mass movement of ethnic Jews toward greater fidelity to their ancestral faith and the increased discussion of the Bible, both of which happened.

[64]The Rabin-Assassination code, along with Drosnin's (*The Bible Code*, 123) false predictions of Atomic Holocaust in 2000 and 2006 appear to be a key reason for formulating this view. Rips's group's site says,

> According to the Torah code hypothesis, if a major event happens, then some descriptive key words of the event is likely to have an associated relatively compact table in the Torah. However, relatively compact tables from the Torah text do not mean anything because there are many relatively compact tables that do not correspond to any event. Only if relatively compact tables had a one to one correspondence with events, could the finding of a relatively compact table be used for prediction. (http://www.realbiblecodes.com/false-drosnin-predictions.php)

However, this does not stop Rabbi Glazerson, a Rips's group member, from making predictions. An interesting one is Glazerson's successful prediction of Trump's win over Clinton, although it does not rise to the level of statistical significance, http://www.wnd.com/2016/11/rabbi-sees-donald-trump-ascendancy-in-bible-codes/. Sherman, *Bible Code Bombshell*, 185–87, cites eight reasons why Bible code cannot be used to predict future events, and concludes, "Because of these considerations, it should be evident that it will probably never be possible to use Bible codes to make accurate predictions about the future. This dovetails with scriptural warnings not to dabble in trying to read the future, to use 'divination.'"

[65]Sherman, *Bible Code Bombshell*, 88–90, 128–40.