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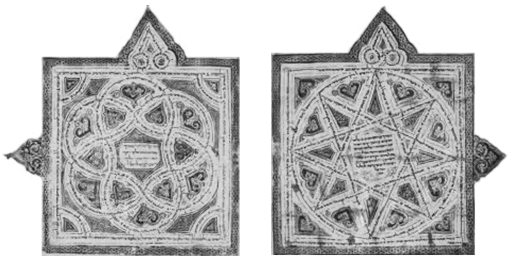
Advantages and Disadvantages of the Use of Digital Tools Exemplified by Textual Studies

Emanuel Tov*

Abstract: Since the 1970s, computers have been used in the service of the humanities, and now we can no longer do without them. A good computer program such as *Accordance* consists of fully integrated biblical texts with morphological analysis and linked to lexicons, atlases, and commentaries. All the imaginable bilingual searches are now possible. However, there are drawbacks to the digital advancement in textual criticism. (1) The users of computer editions lose the familiarity readers previously had with the printed Bible text. (2) For textual criticism, it is important to have a mental image of the shape of the ancient book. (3) When practicing textual criticism, one needs to have a clear concept of the existence of margins around the written, but in computer editions there are no margins. (4) The lines of many poetical texts are arranged graphically in the medieval codices and the Qumran scrolls, but this system has been discontinued in the main computer editions. (5) The running text of Masoretic Text is subdivided into sections, but the computer editions do not provide the visibility of the spacing of the open and closed sections.

Key Words: Digital Tools, Textual Criticism, Hebrew Bible, Masoretic Text, Text Editions

* Emanuel Tov, J. L. Magnes Professor, Dept. of Bible, Hebrew University.



Since the 1970s, computers have been used in the service of the humanities, and now we can no longer do without them. In one area we may get close to self-sufficiency basing ourselves only on digital sources for the text-critical study of the Hebrew Bible, and that is teaching. A good computer program such as *Accordance* consists of fully integrated biblical texts with morphological analysis and linked to lexicons, atlases, and commentaries. All the imaginable bilingual searches are now possible, Greek-Hebrew and Hebrew-Greek, joined by several statistical features.

However, there are drawbacks to the digital advancement. In the area of textual criticism, I see these problems: (1) The concept of a Bible book: The users of computer editions lose the familiarity readers previously had with the printed *Bible* text. If one was accustomed to seeing the beginning of Genesis chapter 12 at the top of the left page, there are no left and right pages in computer editions and, in fact, no pages at all. Instead, the extent of the computer "pages" depends upon the parameters of the screen, font, and line spacing. (2) Shape of the ancient book. For the practice of textual criticism, it is important to have a mental image of the shape of the ancient book. (3) When practicing textual criticism, one needs to have a clear concept of the existence of margins around the written or printed text block. However, in computer editions there are no margins. (4) The lines of many poetical texts are arranged graphically in the medieval codices and the Qumran scrolls. However, this system has been discontinued in the main computer editions in which poetical texts are presented as running prose texts. (5) The running text of Masoretic Text(MT) is subdivided into sections. The computer editions that provide complete running texts do not provide the visibility of the spacing of the open and closed sections, and hence the user loses a significant aspect of the guidance of the layout of MT.

By necessity, students have lost some skills unrelated to textual criticism that nevertheless harm the text-critical analysis (writing by hand, mention of the source of the digital editions, reliance on scans). In the last decades of the previous century a branch of pseudo-research developed that was based on counting letters in the biblical text. Finally, we turn to the subjectivity of the sources that are recorded by computers, including Wikipedia.

Ⅰ. Advantages

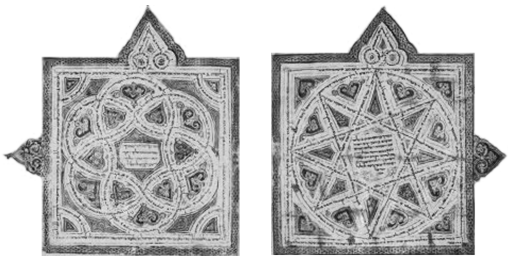
The discipline of textual criticism of the Hebrew Bible works with ancient manuscripts, text editions, and many additional sources. It compares details in many languages and its purpose is to gather information about the transmission of the ancient texts, to compare readings, to express an opinion on them, and to create editions. For some scholars, like myself, this is their main academic focus. Textual criticism is not only descriptive; we want to make the readings that are retrieved from the ancient sources available for the exegetical endeavor of the Bible. After all, textual criticism is meant to be an auxiliary discipline in the service of exegesis.

For three centuries, text-critical activity proceeded very well without computers. Of course, many studies would have been more precise and efficient had they been carried out with the aid of computers. But, if you do not have computers, you do not miss them. Before the advent of the computer, projects worked with endless numbers of boxes filled with slips of paper or index cards. I remember very well the project room of the Oxford project in the mid-1970s that was involved in the revision of the Liddell and Scott Greek lexicon.[①] The room was filled with hundreds of boxes crammed with paper slips, an unimaginable sight for modern eyes. That's also how we worked in the Hebrew University Bible Project[②], using cards of different colors and sizes. The logic of these cards is identical to the main idea of the computer arrangement.

Since the 1970s, computers have been used in the service of the humanities, and now we can no longer do without them. Some projects made the move to computers in the 1970s, and others in the 1980s or 1990s. It was an enormous revolution for projects and for our personal research, and later

① Henry George Liddell and Robert Scott, *A Greek-English Lexicon: With a Supplement*, (Oxford: Clarendon, 1968).

② Moshe H. Goshen-Gottstein, *The Hebrew University Bible: The Book of Isaiah* (Jerusalem: Magnes, 1995); Chaim Rabin, Shemaryahu Talmon, and Emanuel Tov, *The Hebrew University Bible: The Book of Jeremiah* (Jerusalem: Magnes, 1997); Moshe H. Goshen-Gottstein and Shemaryahu Talmon, *The Hebrew University Bible: The Book of Ezekiel* (Jerusalem: Magnes, 2004).



also for the classroom. I am old enough to have witnessed the different technological stages. My M. A. thesis was typed on a Hebrew typewriter, supplemented by an English Olivetti, while the Greek was written in by hand. In the next stage, my doctoral dissertation[①] was typed in English by a professional typist, supplemented by Hebrew and Greek "golf balls" on an IBM Selectric typewriter. That was ages before the advent of the computer...

The first mainframe computers in the service of textual studies were rather primitive, slowly developing into the small personal computers of today. Computers are now a fact of life, and for textual criticism they have been very beneficial. With the aid of computers much has been done that could not have been done otherwise. However, has anyone asked whether there are also drawbacks to the use of computers? I do not refer to the use of a computer in word processing. I speak about the use of textual data in machine-readable form in research and in the classroom.

Take, for example, the Masoretic Text of the Hebrew Bible. For several decades this text has been available digitally together with a morphological analysis of all its words and a lexicon as the basis for many types of text-critical, linguistic, and literary examinations. Since the 1980s, search programs have been improved, now searching for letters, parts of words, words, word combinations, vowels, vowel combinations, cantillation marks and patterns, the Masorah, open and closed paragraphs, and *Ketiv-Qere*.[②] Other scholars perform comparative authorship studies. As far as I know, in 2024 MT is not yet linked with databases of masoretic variants, but it is joined with the Judean Desert texts (the Dead Sea Scrolls). It is linked with the Septuagint Greek translation at the word level through the *CATSS* program[③],

① *The Septuagint Translation of Jeremiah and Baruch: A Discussion of an Early Revision of Jeremiah 29-52 and Baruch 1: 1-3: 8*, HSM 8 (Missoula, MT: Scholars Press, 1976).

② For details about all these components of the biblical text, see my *Textual Criticism of the Hebrew Bible*, revised and expanded fourth edition (Minneapolis: Fortress, 2022), 35-86.

③ *Computer-Assisted Tools for Septuagint Studies*, co-directed by Robert A. Kraft (University of Pennsylvania) and Emanuel Tov (Hebrew University of Jerusalem), module of the *Accordance* (https://www.accordancebible.com/) and *Logos* (https://www.logos.com/) programs.

and the same pertains to the targumim (Torah only) through the *Targums WordMap*[①]. Most of the ancient and modern translations are also morphologically analyzed[②] allowing for searches.

In addition, the main critical editions of the Hebrew Bible, LXX, Vulgate, targumim, and Peshitta are now available digitally.[③] However, variants of these texts are not yet available in a flexible way, except for those of the Göttingen Septuagint integrated in the *Accordance* and *Logos* programs.[④]

The available data and procedures in the field of textual criticism are more extensive than what I can sketch here. Sophisticated projects now analyze handwriting, and various natural science techniques are applied to the ancient documents. However, my main topic is not the achievements, but the research trends to which I turn now.

We possess many textual sources in digital form as well as programs that analyze them. However, we cannot perform our research solely based on digital sources, and we will never be in a situation in which most or all of the textual research can be performed in that way. There will always be many sources that are not available in machine-readable form.

However, in one area we may get close to self-sufficiency basing ourselves only on digital sources, and that is teaching. Teaching involves the availability of digital tools before and during the class. In the classroom, the students have access to all the texts in parallel columns, grammars, lexicons, atlases, and commentaries, allowing them to correct the teacher from the data on their own laptops! All these tools are available in the *Accordance* and *Logos* programs.

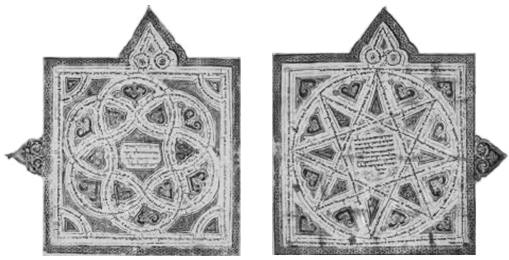
Traditionally, the major tool for the study of the LXX was the bilingual

① A module in the *Accordance* program, *Targums WordMap* is edited by Leeor Gottlieb of Bar-Ilan University, https://www.accordancebible.com/product/targums-wordmap-the-equivalent-project/. At the verse level, MT is further linked with the Peshitta, Vulgate, Old Latin, as well as with all modern translations, through "Strong's equivalents."

② A morphological analysis provides the root (stem) of the word and an exact definition of the grammatical form.

③ Listed in Tov, *Textual Criticism*, 4th ed., 83-86, 258-262, 272-274.

④ Marilyn Lundberg and Todd R. Hanneken, eds., *Science, Technology, and Textual Criticism*, vol. 3D of *Textual History of the Bible: A Companion to Textual Criticism*, eds. Russell E. Fuller and Armin Lange (Leiden: Brill, 2022) provides the details.



concordance of Hatch and Redpath that provided data that required great patience in their use as the equivalents were not always transparent.[①] When I was a student, I checked for hours the Hebrew-Greek equivalents of the LXX and MT based on that concordance. The reverse index of Hatch-Redpath was of help, until a better printed tool was developed by Takamitsu Muraoka.[②] As a teacher, I availed myself of these tools as well, until I developed confidence in the digital tools.

The remainder is history. A good computer program such as *Accordance* consists of fully integrated biblical texts with morphological analysis and linked to lexicons, atlases, and commentaries. All the imaginable bilingual searches are now possible, Greek-Hebrew and Hebrew-Greek, joined by several statistical features. Statistical research of either the Greek or the Hebrew Bible is now very developed as well. Furthermore, it is quite innovative to use these tools in the classroom. For the past twenty or more years I have not faced students surrounded by copies of the Hebrew and Greek Bible but have instead seen students sitting behind ten or fifteen screens. Their computers provide them with the equivalent of more books than they would be able to carry. In real time they were able to search for Hebrew-Greek equivalents and to question what the teacher said.

Ⅱ. Disadvantages[③]

Are there any drawbacks to the digital advancement? Yes, there are. We are a transition generation. We still use books, although the beginning students prefer not to use them. If good computer tools exist, or if texts are scanned, they prefer that easy medium to looking up something in the library.

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① *Edwin Hatch and Henry Adeney Redpath, A Concordance to the Septuagint and the Other Greek Versions of the Old Testament* (*Including the Apocryphal Books*) 2nd ed. (Grand Rapids: Baker Books, 1998).

② Takamitsu Muraoka, *A Greek-Hebrew/Aramaic Two-Way Index to the Septuagint* (Louvain: Peeters, 2010).

③ Several persons helped my thinking. I mention in particular Simon Ratenau who studied with me at the Pontificio Istituto Biblico and Lotem Allouche, my assistant at the Hebrew University. Substantial input was given at a later stage by Shira Golani. I am grateful to all of them.

Soon enough, students may no longer know what a book looks like. Students will not develop a personal relation with books and their bindings.

Now the drawbacks for the study of textual criticism.[①]

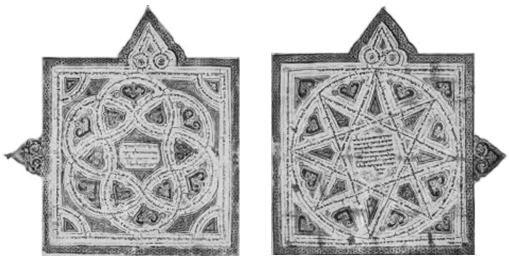
A. Concept of a Bible Book

A Bible book in a medieval codex of the Masoretic Text or a printed edition has a clearly defined beginning and end, as did, at one time, the ancient scrolls such as found in the Judean Desert. It begins on a new page and ends on another page followed by blank spaces. Likewise, most Qumran scrolls started on a separate column if the scroll contained only one book, or after several empty lines. Rabbinic literature has distinct rules for the separation between books.[②] In printed editions, one always knows whether one is reading in the beginning, middle, or end of the book. On the other hand, in computer editions, you lose track of your position in the text. There may be one blank line between the books, and sometimes the name of the new book may be marked in red (the *Accordance* program). But basically, the computer Scripture file (*Accordance* and *Logos*) is one *large amorphous unit*. Scrolling is not the same as leafing through a book, because when scrolling one loses one's sense of direction. Even so, scrolling is better than filling in the number of the chapter and verse in most freely available programs on the internet.

The users of computer editions lose the familiarity readers previously had with the printed Bible text. If one was accustomed to seeing the beginning of Genesis chapter 12 at the top of the left page, this familiarity with the text aided its analysis. However, there are no left and right pages in computer editions and, in fact, no pages at all. Instead, the extent of the computer "pages" depends upon the parameters of the screen, font, and line spacing.

① I should mention that if one reads on a split screen a modern computer text together with a medieval manuscript some of the problems raised will be solved (suggestion of Daniel Olariu).

② P. t. Meg. 1.71d [1.9] determines the amount of space between books of the Torah (4 lines) and Minor Prophets (3 lines)when these books are included in a multibook scroll. The books of the Prophets (3 lines) may end at the bottom of the page, while the books of the Torah and Minor Prophets should end in the middle of the page. Also b. B. Batra 13b.



B. Shape of the Ancient Book

For the practice of textual criticism, it is important to have a mental image of the shape of the ancient book. Biblical books were once contained in scrolls, each containing a separate book or part thereof. With the birth of Christianity, codices replaced scrolls, and the concept of a column in a scroll was replaced by a page in a codex.[①] That concept remained the same in the printed book, although the dimensions differ. It is important to have such a mental image when practicing textual criticism, especially regarding the size of written units, and when visualizing certain types of mistakes. For example, a mental image of a column or page is crucial when assuming the addition or omission of a line or paragraph.

C. Margins of the Text Block

When practicing textual criticism, one needs to have a clear concept of the existence of margins around the written or printed text block, to the right, left, below, and above the text, resembling the margins in the medieval manuscripts and earlier scrolls. Some corrections were inserted in these margins, e.g., in the large Isaiah scroll 1QIsa^{a} and 4QJer^{a}.[②] From the beginning of critical scholarship of the Bible, long before the Dead Sea Scrolls were discovered, the margins were in the minds of scholars who assumed that corrections or additions to the text were written in them. The margins thus serve as a passive player in the text-critical analysis. However, in computer editions there are no margins.

D. Layout of Poetry

The poetical lines (stichs, *stichoi*) of many poetical texts are arranged

① The shape of a codex resembles that of a modern book.

② Emanuel Tov, *Scribal Practices and Approaches Reflected in the Texts Found in the Judean Desert*, STDJ 54 (Leiden: Brill, 2004), 227.

graphically in the medieval codices and the Qumran scrolls. In the scrolls, several systems are used, for example, two half-stichs per line separated by a space, or each half-stich on a separate line.[①] The system was standardized in the medieval manuscripts of MT, in which certain songs and poetical books were always presented in one of these systems. The medieval system is usually imitated in printed editions; see, for example, the critical edition of *BHS*[②] in Genesis 49; Exodus 15; Deuteronomy 32, 33; Joshua 12; Judges 5; 1 Samuel 2; 2 Samuel 22, 23. However, this system has been discontinued in the main computer editions (*Accordance*, *Logos*, *Miqra'ot Gedolot Haketer*[③]), in which poetical texts are presented as running prose texts.[④] It is understandable that the computer editions had to give up the graphical arrangement as many advantages of the text analysis would be lost with a graphical layout. Unfortunately, this omission removes from the text an essential segment of the insights of the ancient and medieval scribes of the Scripture text.

E. Section Divisions

The running text of MT is subdivided into sections. This section system displays the traditional understanding of the meaning of the text, with open sections indicating major divisions and closed sections indicating minor divisions.[⑤] The system is necessarily subjective, but it is part of the tradition of MT. This graphical device, which resembles modern text divisions, provides a quick reference system into the subdivision of the text, and hence forms an essential tool in the traditional understanding of the text structure. The computer editions that provide complete running texts (*Accordance* and *Logos*) indicate the section divisions of MT with the letters ס and פ in the

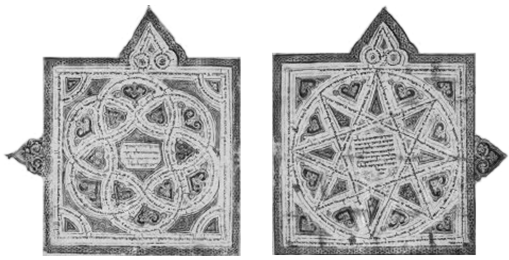
① Tov, *Scribal Practices*, 166-174.

② *Biblia Hebraica Stuttgartensia* (*BHS*), ed. Wilhelm Rudolph and Kurt Elliger (Stuttgart: Deutsche Bibelgesellschaft, 1967-1977).

③ https://www.mgketer.org/ (*Miqra'ot Gedolot* "*Haketer*").

④ *Accordance* and *Logos* do offer the option of presenting the text verse by verse. This layout is closer to a poetical text. Further, some versions of the Snunit program (https://kodesh.snunit.k12.il/i/t/t0.htm) indicate the presence of spacing with letter codes.

⑤ Tov, *Textual Criticism*, 41-43; Tov, *Scribal Practices*, 143-163.



spaces between the verses.[①] However, this arrangement does not provide the visibility of the spacing of the open and closed sections, and hence the user loses a significant aspect of the guidance of the layout of MT.

F. Presentation of the Masorah and the Ketiv-Qere

The Masorah[②] is an inseparable part of MT, and it is therefore represented in such printed editions as *Miqra'ot Gedolot*, Ginsburg, *BHS*, *BHQ*[③], and *HUB*[④]. In all other printed texts, at least the *Ketiv-Qere* notes[⑤] are included in the margins or under the text. Both the *Ketiv* and *Qere* are part of the MT tradition, and that text is unimaginable without both groups of words. The *Ketiv-Qere* words need to be taken into consideration, as well as their position in the page. The unvocalized *Ketiv*, though included in the running text, needs to be disregarded while the *Qere* with its vowels (often added to the *Ketiv* in the manuscripts), found in the margin, needs to be read. In contrast, in computer texts, there are neither text blocks nor margins and therefore the user does not benefit from the traditional understanding of the accepted and rejected readings.[⑥] Thus, in the computer editions, both forms are included *in* the text; the *Qere* is recorded either in the text itself in brackets following the *Ketiv* (*Accordance*)[⑦], or under the text (*Logos*), both vocalized. This arrangement raises the importance of the *Ketiv* to a level higher than it held traditionally because it is provided with vocalization that is

① The *Miqra'ot Gedolot Haketer* program indicates the closed sections with the letter ס(תומה), while the open sections are indicated by spacing together with the letter פ(תוחה).

② The Masorah is an apparatus of instructions for the writing and reading of MT, written in the margins of the text. The *Masorah magna* ("large Masorah") is the Masorah apparatus written in the top and bottom margins of the text, while the *Masorah parva* ("short Masorah") is the Masorah apparatus written in the side margins of the text.

③ Adrian Schenker, ed. *Biblia Hebraica Quinta* (Stuttgart: Deutsche Bibelgesellschaft, 2004).

④ See n. 2.

⑤ The *Qere* reading is mentioned in the *Masorah parva* (see n. 23) replacing the *Ketiv* reading found within the Masoretic Text.

⑥ Only the *Miqra'ot Gedolot Haketer* program indicates the *Ketiv* in an almost ideal way as grey letters (visible but disregarded) next to the *Qere*.

⑦ Additionally, the ETCBC(Eep Talstra Centre for Bible and Computer, Amsterdam) module, recently added to *Accordance*, presents the *Ketiv* without vocalization.

included in the text and not in the margin. Computer programs need to make compromises, but in this case they give a distorted view of the textual transmission.

Ⅲ. Loss of Skills

The students of today are born with computers in their cradles, so to speak. By necessity, they have lost some skills unrelated to textual criticism that nevertheless harm the text-critical analysis.

(1) Students hardly write texts by hand, preferring to write on keyboards. Accordingly, they are not exposed to the vicissitudes of the handwriting and they are unaware of the mistakes made by scribes in antiquity or in the Middle Ages. They therefore find it difficult to understand such phenomena as haplography, dittography, and interchanges of similar Hebrew letters such as *daleth* and *resh* in manuscripts.①

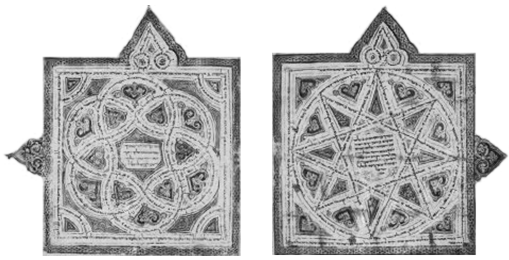
(2) Once printed, books remain static forever. Books have pages mentioning authors or editors. Good text editions mention their editorial principles in the preface. However, machine-readable texts behave differently, as the idea of their editorship is often intentionally vague. Most programs do not indicate their source.② When I ask my students about the source of the digital Bible text they are using, they do not even understand the question.③

(3) In another aspect of the computer culture, we increasingly depend on what exists digitally. In the click culture, we are spoiling our students too much. We do not tell them to look up something in a book, but we scan pages and provide hyperlinks. In this way we raise a generation that is accustomed to

① I therefore found it necessary to institute a copying exercise of a stretch of text in my introductory course to textual criticism. I give the students a printed unvocalized stretch of ten lines of Scripture text which they copy, and which their neighbors check. The students are usually amazed at the number of scribal mistakes made and this exercise convinced the students of the existence of phenomena that were self-evident in the pre-computer era. See Tov, *Textual Criticism*, 455 (*exercise* 29).

② However, within *Accordance* and *Logos*, each file is accompanied by a "Read me" information file.

③ To some extent, this question also pertains to some printed Bible editions whose source is not indicated, but in those cases one knows at least the name of the printer and the year of publication.



receiving the material ready-made.

(4) Let me also refer for a moment to the computer as a word-processor. It may sound strange, but I often have the feeling that the use of a computer obstructs the thinking process. That is, the fingers and not the mind guide the action. For some people it may be easier to control the flow of their ideas through the computer, but for others the computer may be a disturbing factor in the thinking process. Concentrating may sometimes be easier if the fingers do not move.

Ⅳ. Pseudo-Research

Much research is carried out with the aid of computers that could not or could hardly have been carried out without them. In some cases, however, the research is based on incorrect premises.

In the last decades of the previous century a branch of pseudo-research developed especially among religious mathematicians, which was based on counting letters in the biblical text. Researchers counted the letters that appeared with a fixed number of spaces between them[①], creating a pattern or code that presumably was God-given. In the Wikipedia article "Bible Codes" this approach is summarized as follows: "This is based on a belief that the Torah is unique among biblical texts in that it was given directly to mankind (via Moses) in *exact letter-by-letter sequence* and in the original Hebrew language." In this way, the Israeli mathematician Eliahu Rips found that Yitzchak Rabin would be murdered and that the name of the murderer was Amir.[②] The details are found in a book by an American reporter Michael

① For a summary and evaluation, see Jeffrey H. Tigay, "The Bible 'Codes': A Textual Perspective", https://www.sas.upenn.edu/~jtigay/codetext.html. "These sequences of letters are known as equidistant letter sequences, ELSs for short, and proponents of the method use them to argue that the Torah contains various significant patterns of letters and often alludes cryptographically to historical events that took place long after the Bible, down to modern times." See also Hans Ausloos, "De 'Bijbelcode' eindelijk ontcijferd?" *VBS-Informatie* 29 (1998): 88-92.

② Cf. Doron Witztum, Eliahu Rips, and Yoav Rosenberg, "Equidistant Letter Sequences in the Book of Genesis," *Statistical Science* 9 (1994): 429-438.

Drosnin, named *The Bible Code*.[①] According to this procedure, one will obtain the code יצחק רבין, starting with the first *yod* in Deut 2: 33 and then reading every 4,772nd letter, ending with the first *nun* in Deut 24: 16. This name intersects with a quote from Deut 4: 42, רוצח אשר ירצח, "a murderer who murders," while the personal name of the murderer, Amir, appears seven rows earlier in reverse sequence.[②] Drosnin, who renders the phrase as "assassin that will assassinate," takes this as a prediction that Rabin would be assassinated. This book and its sequel[③] describe tens of examples of this kind. This procedure was taken as transmitting a mystical message from God through the letters and it was also used by certain groups in Judaism and Christianity that wished to demonstrate through this procedure that the computer proved God's existence.[④] However, there is one small problem inherent with this procedure, namely through which text have the intentions of God been transmitted? There is no such thing as the text of the Bible. The word of God is included in all the Bible texts, not only in MT. Even if we look at the MT alone, the codices and even the printed editions differ in small details, making it impossible to obtain the same results.[⑤] This fact refutes all research on Bible codes.

Ⅴ. Trustworthiness of Digital Data

There is an unjustified feeling that digital data are more trustworthy than printed books, probably because many believe that the computer never errs.

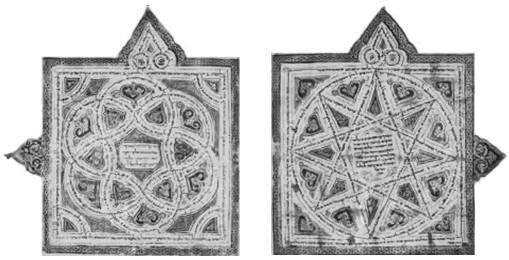
① Michael Drosnin, *The Bible Code* (London: Weidenfeld & Nicolson, 1997).

② Drosnin, *Bible Code*, 15-17.

③ Michael Drosnin, *The Bible Code* 2: *The Countdown* (London: Weidenfeld & Nicolson, 2002).

④ The logic of this procedure was that only a computer search would be able to reveal the concealed secrets in the biblical text that had been hidden for more than 2000 years. The system used by the decoders is simple: one strips the computer texts of all the details except for the consonants and then discovers a code indicated by the positions of the letters.

⑤ This was pointed out especially by Tigay, "The Bible 'Codes'" (n. 32). The internet is full of refutations of Drosnin's theories. Brendan McKay shows that with this system all kinds of events can be predicted. Thus, Lady Diana's death was predicted by an analysis of Moby Dick; see Brendan McKay et al., "Scientific Refutation of the Bible Codes," https://users.cecs.anu.edu.au/~bdm/dilugim/torah.html. See further Jeffrey Satinover, *Cracking the Bible Code* (New York: William Morrow, 1997).



A. Do Computers Make Mistakes?

As far as I know, computers do not make mistakes, but if they are fed with wrong data, they will create them. I have the feeling that older persons approach a computer-encoded text just like any written source. In their view, computer texts may contain mistakes since most texts were recorded manually; for example, the morphological analysis of the words in the MT and LXX within the *CATSS* module was determined by humans. However, it seems to me that the students of today have a different inclination. They have an excessive trust in digital devices in general, including computer tools. I believe that they do not easily grasp the subjective element of these tools.[①]

B. The Subjectivity of the Sources Recorded by Computers

Most sources in our field have been encoded or collected by humans and hence need to be approached like printed books. This pertains also to *Wikipedia*. All of us use that tool, but as educators we also warn against it. As an anonymous tool it is unparalleled in the scholarly world. We teach our students not to quote the *Anchor Bible Dictionary* or the *Encyclopedia Britannica* without mentioning the authors of the articles in them. In *Wikipedia* this is not possible since articles are not signed, and besides, even if they were, they are changing all the time. When quoting an article, one needs to mention the exact day and hour it was consulted.

In the article describing its procedures[②], *Wikipedia* claims that its entries reached a high degree of precision, but the examples given mainly relate to the sciences. I am afraid that I found much imprecision in the articles I consulted regarding textual criticism.

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① When trying to find professional literature on this point, I found only general discussions such as in InformationQ.com relating to the advantages and disadvantages of computers versus books in teaching. A good discussion in https://www.oxfordlearning.com/textbooks-vs-computers/entitled "Should Textbooks be Replaced by Notebook Computers?" prefers printed textbooks for schools.

② "Wikipedia," in Wikipedia.com.

Let me give a few examples:

Septuagint. This article contains many imprecisions although it has been slightly improved since I reviewed this entry.[①] It starts off by giving the impression that the Letter of Aristeas referred to all the books of the LXX, which is not the case. Further, "It is unclear to what extent Alexandrian Jews accepted the authority of the Septuagint" (in the light of Philo's writings, this is a very questionable remark). The statement "Some sections contain Semiticisms, idioms and phrases based on Semitic languages such as Hebrew and Aramaic" shows ignorance of the topic and misunderstanding. The entry discusses briefly the "differences from the Vulgate and the Masoretic text" (in that sequence), thereby showing that the entry singles out the Vulgate and may well have been written by a scholar who is influenced by that translation. The entry is compiled based on secondary handbooks, lacks basic scholarly literature, does not dwell on the essence of the LXX, and does not provide help for the scholarly users of the LXX.

Several entries provide insufficient information: *Lucian of Antioch* (insufficient information on the Lucianic revision of the LXX), *Peshitta*.[②]

Aquila of Sinope. The article describes the publication of the larger fragments of this translation, but not the many marginal quotations in manuscripts, nor modern editions. It does not discuss translation technique.

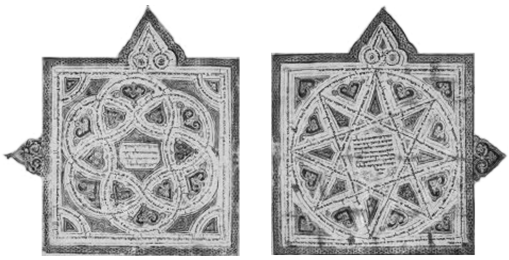
Hexapla. This entry as well as the entries on *Aquila* and *Theodotion* mention in detail the modern Hexapla Project but omit mentioning the fine Göttingen editions in which the Hexaplaric readings can be consulted. These entries were most likely written by an associate of the Hexapla Project.

Masoretic Text. This entry is full of imprecisions and is clearly copied from handbooks. It is not written by someone with a good knowledge of the Masorah. The main features of MT, its early antecedents, and of the Masorah are not described. It wrongly mentions among the tikkune sopherim the change from Ishbaal to Ish-bosheth.

Some articles are confessional: *Bible*, *translations* (focus on the New

① The Wikipedia articles were accessed on 26 June 2023.

② Since I reviewed the entry "Samaritan Pentateuch" on 10 June 2021, it has been updated with new information.



Testament); *Qere* and *Ketiv* (focus on Jewish tradition).

On the other hand, the English articles on the Dead Sea Scrolls and several Hebrew articles in the Hebrew version of Wikipedia about technical details in the Masoretic Text are good. The good quality of these entries shows that there is room for articles of this type on the internet.

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