

D'var Torah: Vayikra

By Shmuel Glassenberg

On the surface, this *parsha* reads as a long menu of priestly sacrifices: The pan-fried sacrifice. The bird sacrifice...

So in an attempt to keep things interesting, Rabbi Kaplan's *Chumash* has crammed in more pictures per page in this *parsha* than almost any other.



Figure 1: Rabbi Kaplan's Chumash. Keeping things interesting.

For example, page 506. Ever wanted to know where the yummiest part of the sheep is located? It's right here:

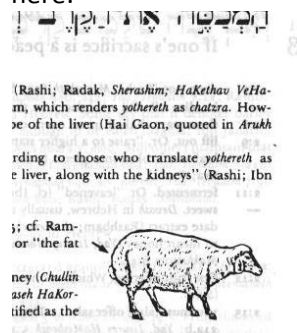


Figure 2: Not sure where the backside of a sheep is? Follow the arrow.

In my parents *conservativer* shul, they have fancy *chumashim* with gorgeous full-page color maps of Israel in various time periods. Our *chumash* offers a completely different kind of map on page 509, in case you need to find your way around the inside of a cow:

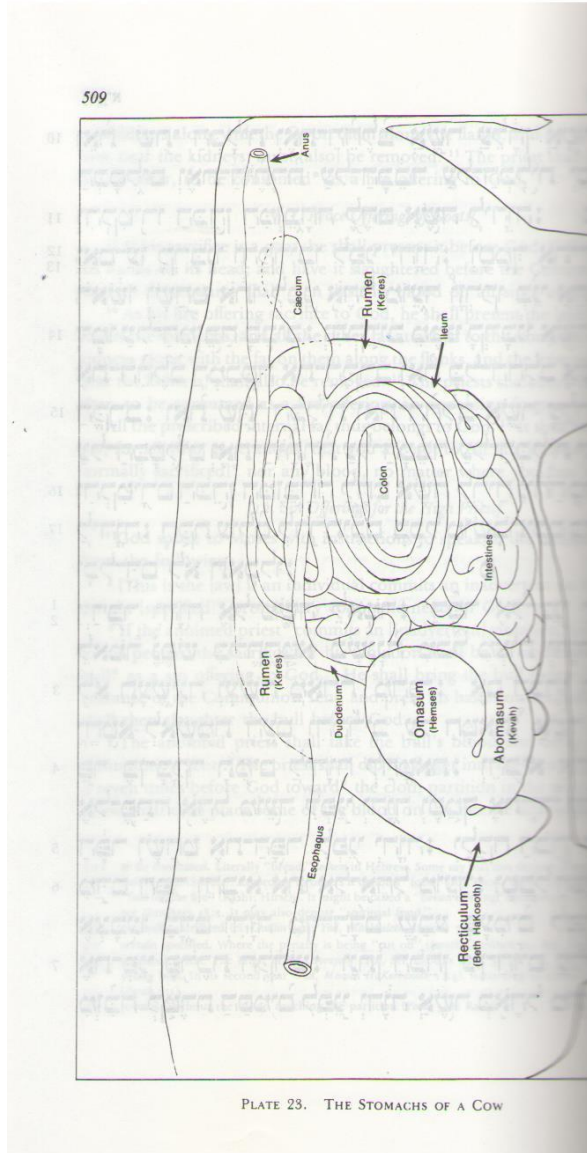


Figure 3: Page 509 of the Kaplan Chumash. If you are ever swallowed by a cow, this map shows you how to escape.

Squeezing a good d'var out of this *parsha* is tricky; which is why many *d'var torahs* this week will focus on Purim.

But that, my friends, is a total cop-out.

I'm told that my great grandfather used to say that "there is more knowledge hidden in one page of Torah than in the entire *Goyische velt!*"

This *parsha* should be no exception.

To reveal the secrets of this *parsha* we will embark on a journey that combines history, archeology, chemistry, and computer science.

So strap in, let's go.

A few months ago Dr. Rabbi Zev Farber gave an amazing *d'var Torah* - challenging modern orthodoxy to consider documentary theory. I was incredibly moved by one particular story he told:

He told of a frum freshman college student. One who for his entire yeshiva education had learned that the cornerstone of Judaism was that Torah was given word-for-word *min hashamayim* at Mount Sinai. "And if you don't believe that - you might as well eat a cheeseburger!" Upon arriving at a secular college, the student takes a bible course... where he is faced for the first time with the insurmountable evidence that the Torah is written by human authors in different time periods. Alas - a crisis of faith.

So I say: "Take the cheeseburger out of your mouth, young man! Are these ex-hippies in the liberal arts department getting you down? Come with me - to the engineering quad. And drink from the water fountain at the computer science department, that your faith might be restored."

Nachmanides tells us that *Hashem* showed Moshe the Torah written in black fire on white fire, as a sequence of letters without spaces or punctuation. It was Moshe who added the spaces as he wrote it down on parchment.

Hidden amongst the letters of the Torah, interspersed at equal distances, are additional layers of hidden words.

Take the first *taf* in *bereshit* - count 50 letters, you get a *vav*, then a *resh*, then a *hay*.
What does that spell?

"TORAH!"

Could be a coincidence - except that it also happens at the beginning of *shemot*, and then backwards in *bamidbar* and *devarim*.

The *kabbalists* searched for these codes throughout the middle ages. The whole business really kicked into gear in the 1980's by *frum* professors in various computer science departments. So far they've found hundreds of these intriguing patterns.

I should clarify - the vast majority 'research' into Torah codes borders on pseudoscience.... It's impossible to prove statistically whether most hidden references to Rabin's assassination or the great rabbis' birthdays are random or deliberate.

Even the Torah-every-50-letters thing doesn't demonstrate divine authorship - it just shows that whoever compiled the Torah put in some additional effort.

"But, young college student, it's funny you should come to me this week... because it just so happens that one of the most profound and statistically unexplainable patterns that has been discovered between the letters of the Torah, is in this week's very *parsha*."

Aharon, despite being the protagonist of this book, isn't even mentioned in the first *aliyah* - just a reference to his sons.

But - If you search between the letters, at various intervals, you will find Aharon hidden 25 times. Search every other piece of Hebrew text of this length, the Torah included, and you will get between 7 and 11 hidden 'Aharons': an average of 8.8.

25 Aharons is many standard deviations away from the mean. The professor who found this pattern calculated the probability of this happening randomly at 1 out of 400,000.

Now here at Kol Sasson, we demand a certain degree of academic rigor. Just because someone shows up telling you he found Bigfoot in the Torah, we don't take that at face value.

So I went ahead and did the analysis myself from scratch. It's [one page of C++ code](#) to run the whole analysis - including the text itself.

It's actually a great technical interview question for the next time I have to interview a *frum* programmer (probably not going to happen.)

I'm glad I did, because I realized that [the 25 codes he found](#) include codes that start within these 720 letters but continue onto the rest of the *parsha*. When I limited my search to just this *aliyah*, I get 20. Which is still several standard deviations away from the mean and clearly is statistically very significant - in other words... definitively not random.

I've printed out this [secret decoder transparency](#) that does the counting for you (*note the web version already includes the scanned page underneath*).

Once you get into the analysis you realize that there really is something strange afoot here.

You might assume that maybe the *parsha* just has more *alephs*, *hays*, *rayshes* and *nuns* - so *Aharon* would appear more often in different intervals. So I ran every permutation of *Aharon's* name and all of them came out with around 8 or 9 instances, except *Aharon*, which had his 25.

The Talmud says that if you omit or add a single letter to the Torah you can destroy the world.

So I went ahead and tried it. Don't worry, *I'll* get in trouble - you won't.

By removing one letter from the *parsha*, I found that the pattern collapses completely. 13 instances. Drop 2 letters, and it's like any other mundane piece of text.

[Like when you spend an hour building a gorgeous gravity-defying structure with your daughter's Magnetiles, and then she decides "to help" by removing one with her stubby little 3-year old fingers. It falls apart immediately into random chaos. We all say we buy them for the kids.]

We do know that if the Torah was given by *Hashem* at Mount Sinai, we haven't all carried it perfectly. The Yemenite Torah, separated from the Ashkenazi one completely by 2000 years, is 9 letters off. Not bad for a book of 300,000 letters.

But, if we are this many letters off or more from Sinai, many of these intriguing patterns - especially those that span wider sections - would be destroyed... as we've seen here.

But, small portions that were kept intact - like the first *aliyah* of this *parsha* - would maintain their magical probability-defying properties.

Could man alone, twenty-two hundred years ago, have pulled off such a work of statistical and linguistic complexity?

The every-50-letters-spells the Torah thing is totally doable.

A month ago on Facebook you may have seen [the grad school quantum physics paper](#) where the first word of each line spelled the lyrics to "Never going to Give you Up".

But hiding 25 *Aharons* in this short *aliyah*? Drop one letter and the whole thing collapses? That's a much more impressive feat. It's almost impossible to pull off without some sort of computing device.

But to take the scientific point of view, there has to be a worldly explanation here.

If you've taken the Western Wall tunnel tour, you've seen the [Western Stone](#), the 500 ton stone that is one of the heaviest recorded objects ever lifted. We have no idea how it got there.

Nonetheless, archeologists expect to eventually uncover the ancient methods that pulled this off. To a scientist, just because we don't know yet how it got there, doesn't mean a divine force put it there.

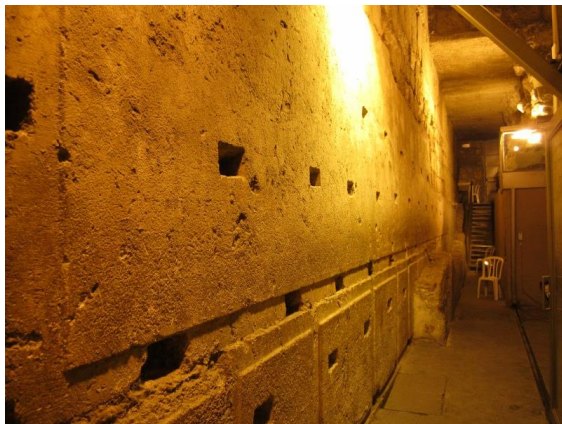


Figure 4: The Western Stone. Very heavy.

We often make the mistake of condescendingly underestimating the technological capabilities of our ancestors.

Archeologists are constantly finding things that rock our accepted views of our ancestor's level of technological capabilities. Especially at the specific time period when documentary theory theorizes the Torah was written.

For example, a large wooden box containing almost 50 interlocking bronze gears was discovered on 2100 year old Greek shipwreck.

X-ray analysis revealed that this [Antikythera Mechanism](#) was an ancient mechanical navigational computer that was as complex as mechanical calculators of the 1800's. Built at the time documentary theory indicates this parsha was written.



Figure 5: Antikythera Mechanism Fragment

Another example:

In an area that is in modern-day Iraq, a series of 2000 year old terracotta clay pots were discovered. They contained a copper cylinder made up of rolled up copper sheeting, housing a single iron rod, with acid residue at the bottom.

How many of you did this experiment in junior high science class? Wrap copper around iron and fill the middle with lemon juice? Maybe you used a raw potato? What do you get? A battery!

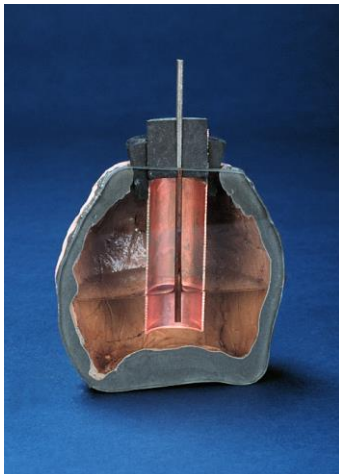


Figure 6: Baghdad Battery Demonstration

Fill the [Baghdad Battery](#) with lemon juice, and you get 1.5 volts.

A 'D' battery, 1600 years before Ben Franklin. Everyone's best guess is that the Baghdad battery was used to electroplate coins, which was another experiment you should have done in junior high school.

But no one really knows whether its owners understood how it worked, or what Baghdad battery really was used for. The theory is that it was used to electroplate coins, but perhaps... it was plugged into something else entirely.

But wait a minute - if there was a battery in Babylon at the very time and place the documentary theorists believe this *parsha* was authored...

Then there was a battery in Babylon at the time the Talmud was being written!

This raises - for us - a *far* more important question. More important than whether the Torah was divinely authored - more important than any other cosmic mystery raised by our computational analysis of this *parsha*.

That question is: *If they had* an electric battery in babylon 2000 years ago...

...Did the rabbis of the Talmud use it on **Shabbos**?

Shabbat Shalom!

```

// dvartorah.cpp - Shmuel Glassenberg

#include <stdafx.h>
#include <stdio.h>
#include <string>
#include <iostream>
using namespace std;

void reverseInPlace(wstring & input)
{
    wchar_t t;
    for (int i=0;i<input.length()/2;i++)
    {
        t=input[i];
        input[i] = input[input.length()-i-1];
        input[input.length()-i-1] = t;
    }
}

int findNumberOfSkippingCodes(wstring sourceText, wstring word)
{
    int result = 0;
    for (int k=0;k<2;k++) // one in each direction
    {
        int firstLetterIndex = -1;
        do
        {
            firstLetterIndex++;
            firstLetterIndex = sourceText.find(word[0],firstLetterIndex);
            if (firstLetterIndex!=-1)
            {
                int secondLetterIndex = firstLetterIndex+1;
                do
                {
                    secondLetterIndex++;
                    secondLetterIndex = sourceText.find(word[1],secondLetterIndex);
                    if (secondLetterIndex!=-1)
                    {
                        int distance = secondLetterIndex-firstLetterIndex;
                        if (firstLetterIndex+(word.length()*distance)<sourceText.length())
                        {
                            bool isMatch=true;
                            for (int i=2;i<word.length();i++)
                            {
                                if (word[i]!=sourceText[firstLetterIndex+(i*distance)])
                                    isMatch=false;
                            }
                            if (isMatch)
                            {
                                //cout<<distance<<" ";
                                result++;
                            }
                        }
                    }
                } while (secondLetterIndex!=-1);
            }
        } while (firstLetterIndex!=-1);
        reverseInPlace(word);
    }
    return result;
}

```


ויקרא
Leviticus

ויקרא אל משה וידבר יהוה אליו מאהל מועד לאמר:
 דבר אל בני ישראל ואמרת אליהם אדם פרוק ריב מכם
 קרבן ליהוה מן הדבהמה מן הדבקר ומן הדבאר תקריבו
 אתי קרבנכם: אם עלה קרבנו מן הדבאר וזכר תמים
 וקריבנו אלפתח אהל מועד יקריב אתו לרצו לפני
 יהוה: וסמך ידו על ראש העלה ונרצה לו לכפר עליו:
 ושחט את דבן הדבקר ליהוה והקריבו את
 הכהנים ורחקו את הדם על המזבח סביב
 אשרפתח אהל מועד: והפשיט את העלה ונתתה
 לנתחיה: ונתנו בנן אהרן הכהן אש על המזבח וקריבו
 עצים על האש: וקריבו פאחיהם הפאים את הנתחים
 את האש ואת הפדר על העצים אשר על האש אשר
 על המזבח: וקריבו וכרעיו יסחך במים והקטיר הכהן
 את הכל המזבחה עלה אשה ריחניחוח ליהוה: ו
 ואם מן הדבאר קריבנו מן הבשבים מן העזים לעלה

Non-Equidistant
Letter Intervals:

א ← ה ← ר ← ו

| x\y | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
|-----|----|----|----|----|----|----|---|---|----|---|----|
| -5 | 5 | 9 | 10 | 6 | 7 | 11 | 8 | 7 | 5 | 9 | 9 |
| -4 | 9 | 5 | 5 | 8 | 8 | 8 | 9 | 7 | 8 | 2 | 9 |
| -3 | 5 | 10 | 7 | 3 | 4 | 8 | 2 | 5 | 3 | 4 | 10 |
| -2 | 5 | 8 | 5 | 8 | 6 | 10 | 4 | 5 | 6 | 3 | 7 |
| -1 | 8 | 7 | 9 | 4 | 8 | 10 | 7 | 7 | 11 | 8 | 9 |
| 0 | 9 | 8 | 14 | 6 | 8 | 25 | 5 | 8 | 4 | 6 | 15 |
| 1 | 8 | 5 | 10 | 11 | 7 | 6 | 8 | 8 | 5 | 5 | 10 |
| 2 | 9 | 4 | 10 | 9 | 5 | 8 | 8 | 7 | 5 | 9 | 9 |
| 3 | 5 | 11 | 8 | 12 | 9 | 5 | 5 | 4 | 12 | 5 | 8 |
| 4 | 11 | 9 | 6 | 4 | 6 | 9 | 6 | 7 | 8 | 7 | 6 |
| 5 | 4 | 8 | 11 | 5 | 8 | 9 | 7 | 8 | 6 | 6 | 9 |

25

Alternate Combinations of א,ה,ר,ג



```

//Sample code runs a few example analyses:
int _tmain(int argc, _TCHAR* argv[])
{
    wstring vayikra
(L"
ויקרא אל משה וידבר יהוה אליו מאהל מועד לאמר דבר אל בני ישראל ואמרת אליהם כייקריבכם קרבנליהוה מנחה מנהבה מנהבה בקרו מנהצאנתקריבו את קרבנכם סעלה לקרב
נומנה בקרו זכרתמיים קריבנואלפתחאהלמועדיקריבאתולרצנו לפנייהוה וסמך ידוע לראשה עלה הונרצה לולכפר עליו ושחט אתבנה בקר לפנייהוה והקריבו בני אהרנה כהניסא
תהדסו וקראתהדס עלה מזבח סביב אשרפתחאהלמועד והפשיט אתה עלה הונתחאתהלנתחיה הונתנו בני אהרנה כהנאשעלה מזבח וערכו עציסעלה אש וערכו בני אהרנה כהניסאת
נתחיה סאתה ראשואתה פדרעלה עציסאשרעלה אש אשרעלה מזבח וקריבו וזכר עיירח קיבמיסוה קטירה כהנאתה כלה מזבח עלה אש הריחניחוליהוה ואם מנהצאנתקריבנו מנהכ
כשביסאמונה עזיסעלה הזכרתמיים קריבנו ושחט אתועלירך המזבח צפנה לפנייהוה וזרקו בני אהרנה כהניסאתדמועלה מזבח סביבונתחאתולנתחיהוה אתראשוואתפדרווערך
");
    wstring aharon (L"אהרן");

    cout<< "Original Parsha:" << findNumberOfSkippingCodes(vayikra,aharon) <<endl;

    //Remove one letter... chas v'sholom!!!
    wstring vayikra_missing_a_letter
(L"
ויקרא אל משה וידבר יהוה אליו מאהל מועד לאמר דבר אל בני ישראל ואמרת אליהם כייקריבכם קרבנליהוה מנחה מנהבה מנהבה בקרו מנהצאנתקריבו את קרבנכם סעלה לקרב
נומנה בקרו זכרתמיים קריבנואלפתחאהלמועדיקריבאתולרצנו לפנייהוה וסמך ידוע לראשה עלה הונרצה לולכפר עליו ושחט אתבנה בקר לפנייהוה והקריבו בני אהרנה כהניסא
תהדסו וקראתהדס עלה מזבח סביב אשרפתחאהלמועד והפשיט אתה עלה הונתחאתהלנתחיה הונתנו בני אהרנה כהנאשעלה מזבח וערכו עציסעלה אש וערכו בני אהרנה כהניסאתה
נתחיה סאתה ראשואתה פדרעלה עציסאשרעלה אש אשרעלה מזבח וקריבו וזכר עיירח קיבמיסוה קטירה כהנאתה כלה מזבח עלה אש הריחניחוליהוה ואם מנהצאנתקריבנו מנהכ
שביסאמונה עזיסעלה הזכרתמיים קריבנו ושחט אתועלירך המזבח צפנה לפנייהוה וזרקו בני אהרנה כהניסאתדמועלה מזבח סביבונתחאתולנתחיהוה אתראשוואתפדרווערך
");
    cout<< "Missing One Letter:" << findNumberOfSkippingCodes(vayikra_missing_a_letter,aharon)
<<endl;

    wstring aharon_jumbled_HNRA (L"ארנה");
    cout<< "Permutation HNRA:" << findNumberOfSkippingCodes(vayikra,aharon_jumbled_HNRA)
<<endl;

    wstring aharon_jumbled_NHRA (L"ארנה");
    cout<< "Permutation ARNH:" << findNumberOfSkippingCodes(vayikra,aharon_jumbled_NHRA)
<<endl;

    wstring aharon_jumbled_RNHA (L"אהנר");
    cout<< "Permutation RNHA:" << findNumberOfSkippingCodes(vayikra,aharon_jumbled_RNHA)
<<endl;

    getchar();
    return 0;
}

```

Output:

```

C:\dev\dvartorah\dvartorah\Debug\dvartorah.exe
Original Parsha:20
Missing One Letter:13
Permutation HNRA:7
Permutation ARNH:5
Permutation RNHA:8

```