

HIDDEN INFORMATION IN BIBLICAL HEBREW – FURTHER EXAMPLES

Prof. Haim Shore

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1. INTRODUCTION

Is there hidden information in biblical Hebrew words?

Reading various Jewish sources, one encounters time and again a surprising revelation: Chazal (an acronym for the Hebrew "Chachameinu Zichronam Livracha", "our sages of blessed memory") believed that there were hidden linkages between physical properties of the real world and respective biblical verses or biblical Hebrew words. This conviction is expressed not merely by general assertions, like "Bezaleel knew how to assemble letters with which heaven and Earth had been created" (Berachot, 55a), but also in various detailed examples, some of which reflect efforts to extract real useful information about the physical world from analysis of the structure and the numerical values of relevant words or verses. We should clarify right away: we do not refer here to Gematria. The latter relates to a common belief, adopted by rabbis and Jewish bible interpreters alike, that if two Hebrew words share the same numerical values – probably there is a certain "secret" that binds them together, and it is up to Gematria to expose this common relationship. However, separate and unrelated to Gematria, Chazal had believed that words in the Hebrew language provided hidden information about their respective objects, independently of other words. Let us give some examples. The numerical value of the Hebrew "Heraion" (pregnancy) represents the expected duration of human pregnancy (271 days; Midrash Rabbah, Bereshit, 20). Rabbi Shmuel relates to "Harbeh arbeh itzvonech ve-heronech" ("I will greatly multiply the pain of thy child bearing", Gen., 2:16). Since "Harbeh" is numerically equivalent to 212, an embryo surviving 212 days, thus Rabbi Shmuel, will probably survive the whole pregnancy (Midrash Rabbah, Bereshit 20). Also therein, Rabi Yehoshua deduces that pregnancy of snakes takes seven years, based on the verse: "Because thou hast done this, thou art cursed above all cattle, and above every beast of the field" (Gen. 3:14). In the name of Rabbi Ibon Halevi Rabbi, Midrash Tanchuma relates to the peculiar verse: "If a woman have conceived seed, and born a man child ..." (Lev. 12:2). Why the emphasis on the *woman* conceiving seed and a male baby being born as

a result? Midrash Tanchuma says: “If man precede — giving birth to female baby; If the woman precedes—giving birth to male baby” (Midrash Tanchuma, Parashat Isah Ki Tazria, C).

Over the years, we have assembled scores of examples where Hebrew biblical words seemed to convey information beyond that stored in the revealed meaning of the word. These examples were either traceable to Jewish historical sources or detected by personal observation. Eventually, these examples have been published in a book (Shore¹), and made public in an interview given by the author to the Israeli daily The Jerusalem Post (December, 4, 2009²).

An innovative aspect of the examples assembled in Shore¹ is the introduction of statistical analysis to establish in a rigorous scientifically acceptable fashion whether a linear relationship exists between numerical values of a set of inter-related biblical Hebrew words and a major physical property shared by all objects that these words stand for. As explained elsewhere in detail³, existence of a statistically significant linear relationship indicates that the numerical values of the words in the set deliver the same information as the scientifically proven physical measure, only on a different scale. Over twenty examples, relating to various physical properties, are given in Shore¹, with the associated statistical analyses. These include, for instance, colors and their respective spectral frequencies, metals and their atomic weights and specific heat capacity of the three phases of water (ice, liquid water and steam). An outstanding example relates to the set of words “Eretz” (Earth), “Yareach” (moon) and “Shemesh” (Sun). Drawing the numerical values of these Hebrew words on the horizontal axis (of a two-dimensional coordinate system), and the diameters of the respective celestial objects on the vertical axis (on a log scale), one finds the points to align on a straight line. The linear relationship obtained is statistically highly significant (at the 5% significance level).

A thorough explanation of the approach pursued in Shore¹, and why a linear relationship is so meaningful, may be found at the author’s website³, where a free download expounds the approach with some further examples (all taken from Shore¹).

In this article, we first demonstrate the approach as it applies to the diameters of all seven planets (Pluto, Mercury, Mars, Venus, Neptune, Saturn, Jupiter). The example is taken from Shore¹, and it is repeated here, with some extensions, as an initiating demonstration for the new methodology. The main reason for selecting this example is the large number of points in the set (seven). Aligning of seven points on a straight line accidentally is highly improbable, and renders it extremely hard to relate to this phenomenon as mere coincidence. This example is followed by new findings obtained by us after publication of the book¹, and by some comments and suggestions received via e-mail from readers exposed either to the book¹ or to the interview in the Jerusalem Post².

2. PLANETS’ DIAMETERS

This example is taken from Ch. 8 in Shore¹, with some extensions. It relates to our attempt to link together names for celestial objects that appear in the Bible to known diameters of the planets. This is an outrageous and hard to prove (let alone believe) proposition on two counts. First, the Bible never refers to any particular planet (apart from Earth, which obviously is never considered to be one of a set

of planets, namely, stars that encircle the sun). Secondly, why should one even conceive of biblical sky-related names as associated with planets' diameters? Furthermore, given that there is no allusion to planets, how would one associate a particular biblical name to a particular planet?

We are unaware of any scholarly interpretation that attributes apparently sky-related biblical names to planets. However, certain names are traditionally interpreted to be associated with certain groups of stars. Examples are Ash, Aish, Ksil and Kimah (we will refer to these shortly). Even-Shoshan⁴ interprets Ash to be one of the planets, Aish to be a group of non-moving stars ("Kochvei-Shevet"), Ksil to be the group of stars called Orion, and Kimah as "A group of radiating stars of the sign Taurus".

We now discard this assumption, and make an initial assumption that all references to celestial objects in biblical Hebrew relate to planets. We exclude from this characterization Earth, the sun and the moon. There are four such names: *Kimah*²⁴ (Amos 5:8; Job 9:9, 38:31), *Ksil*²⁵ (Isa.13:10; Amos 5:8; Job 9:9, 38:31), *Ash*²⁶ (Job 9:9, occasionally also *Aish*, Job 38:32) and *Teman*²⁷ (Job 9:9). The latter means in biblical Hebrew also south, but from the general context of the verse where it appears it is obvious that the name relates to a celestial object. We add to this set *Kochav*, which in biblical Hebrew simply means star. *Kochav* is assumed here to relate also to an unknown planet, though in most places in the Bible it appears in the plural to signify all stars. Such developments, where a specific meaning is later generalized is often encountered in the evolution of languages (relate, for example, to the words "to Xerox" or "fridge").

Two other names added to the set are "Mazar" (only the plural, Mazarot or Mezarim, appears in the Bible, at Job, 38:32 and Job 38:9, respectively), and "Shachar". The first is interpreted in Even-Shoshan⁴ as "Mazal" (a planet). The second is often interpreted by Jewish scholars as "a morning star" (relate, for example, to SofS. 6:10, and how some Jewish commentators interpret it). As elaborated on at some length in Shore¹, these names probably represented originally the two most luminary stars in the sky, after the sun and the moon, namely, Venus (probably named "Mazar" in Hebrew) and Jupiter (probably named "Shachar" in Hebrew). As we shall later demonstrate, the statistical analysis indeed corroborates this interpretation for the two names.

We now have seven names for celestial objects that appear in the bible. Which planets do these names possibly allude to?

For no obvious alternative method to assign names to planets, we sort in an ascending order the numerical values of the biblical Hebrew names (denoted ONV for "Object Numerical Values"), and doing likewise for the seven planets' equatorial diameters (as given by NASA site). Table 1 introduces the results (corresponding to Table 8.3 in Shore¹).

The most surprising finding in this table is that "Mazar" and "Shachar" indeed represent in the table the very same planets these names have formerly been attributed to from altogether non-statistical

Table 1. Data for diameters of planets with their assumed biblical names

Name	Hebrew name	ONV	Equatorial	
			diameter (km)	Log-diameter
Pluto	<i>Kochav</i>	48	2302	7.7415
Mercury	<i>Kimah</i>	75	4879.4	8.4928
Mars	<i>Ksil</i>	120	6794.0	8.8238
Venus	<i>Mazar</i>	247	12103.8	9.4013
Neptune	<i>Ash</i>	370	49528	10.8103
Saturn	<i>Temah</i>	490	120536	11.6997
Jupiter	<i>Shachar</i>	508	142984	11.8705

arguments (refer to Shore¹, sections 8.3.4 and 8.3.5). We conclude that this convergence to identical results, emanating from two different modes of analysis, only enhance the validity of this analysis.

Plotting the planets' diameters on the vertical axis and ONV values on the horizontal axis, Figure 1 is obtained. Disappointingly, no clear-cut linear relationship between the plotted points can be discerned. In fact, one wonders whether any mathematical relationship is indicated at all that bind all points together.

We proceed to represent the diameters (vertical axis) on a log scale (instead of the original scale). One should be aware that expressing a number by its log value is just another method of representing a numerical value. No preference can be given to either form of representation, apart from the fact that for modeling purposes one may deliver interpretable results while the other does not. As often have happened with other examples in Shore¹, once a log scale is used, the desirable linear relationship surfaces, unexpectedly and with no logical explanation. Same points as plotted in Figure 1 (on the original scale) are now re-plotted on a log scale in Figure 2.

A linear relationship is in full view.

Statistical linear regression analysis was applied to the entire sample of seven points to statistically ascertain whether the linear relationship, intuitively perceived in Figure 2, is significant. For the present analysis, we have obtained adjusted R-squared of 0.9797. The model F-ratio is 291.9, which, for n=7, is highly significant (p<0.00001). In other words, the probability that the seven points in the analysis would align themselves on a straight line, the way they did, by chance alone, is less than 0.001%.

Confidence interval limits (at 95% confidence) are also plotted in Figure 2. Since Venus (*Mazar*¹⁹) and Pluto (*Kochav*²⁸) are close to these limits, the previous analysis was rerun excluding these observations. Results are plotted in Figure 3.

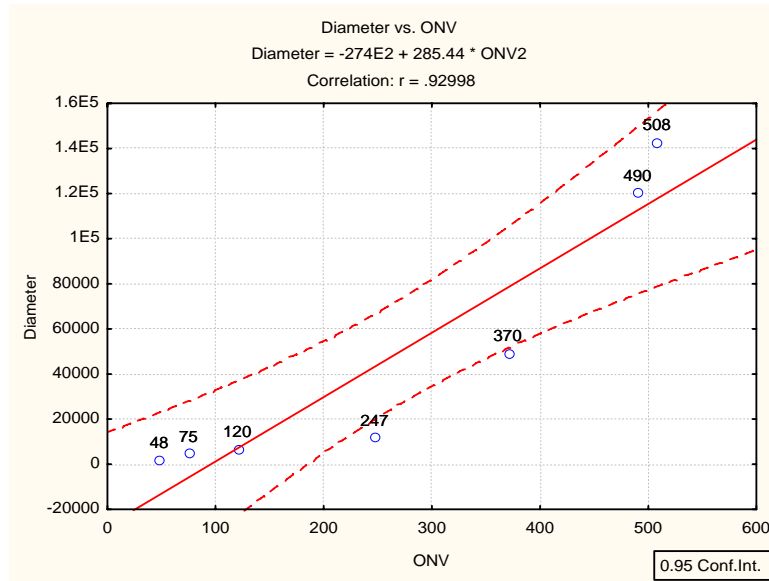


Figure 1. The data points on the original scale.

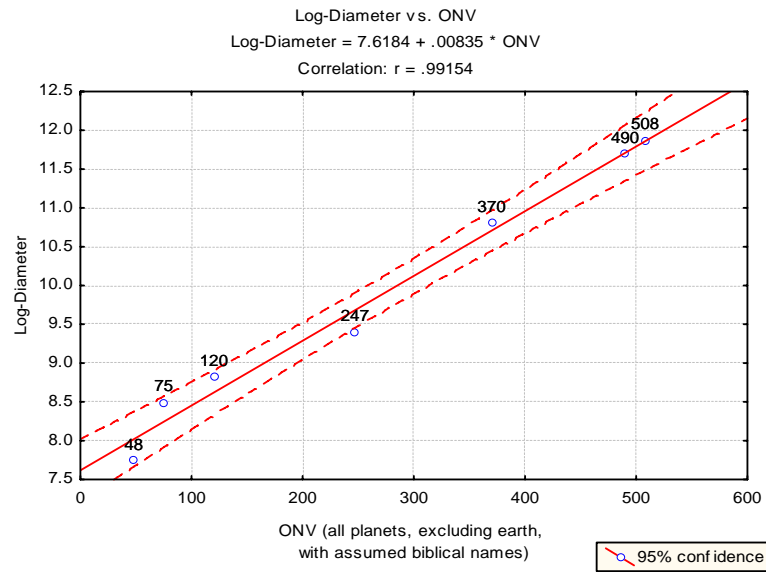


Figure 2. Log-diameter of the planets as a function of their object numerical values (ONV). All planets' names are biblical.

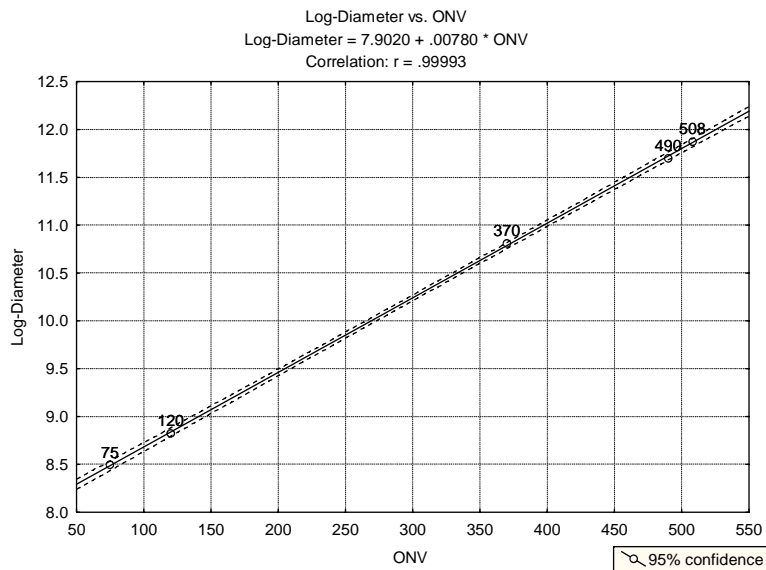


Figure 3. Log-diameter of the planets as a function of their ONV (excluding Venus and Pluto)

The adjusted R-squared is now 0.9998. The model F-ratio has jumped to 22421 (formerly 291.9), which, for n=5, is highly significant (p<0.00000). In other words, the probability that the five points in this analysis would align themselves on a straight line, the way they did, by chance alone, is less than 0.0001% (vs. 0.001% for the previous analysis)!

3. PLANETS' ORBITAL ANGULAR MOMENTUM

This idea for this analysis was forwarded to me by Dr. Howard Sharpe from Canada, and presented here with permission.

One of the most significant characteristics of a planet's orbit is its orbital angular momentum (OAM). The latter is defined as the product of the planet's mass times the planet's average distance from the sun times the planet's average orbital speed:

$$L = M * R * V = M(2\pi R^2) / T$$

where M is the planet's mass (kg), R its average orbital radius (meters), V its orbital linear speed (meters per second) and T its orbital period (in seconds).

Table 2 displays planets' ONVs values together with their orbital angular momentum (kg*m²/sec; m is "meter") and their log values. This time we have included Earth in the list. Also we assume that "Ash" and "Aish" represent different planets, and accordingly we add to the list planet Uranus (not included in the previous analysis, where we have assumed that "Ash" and "Aish" refer to the same planet). Thus, we now have altogether nine biblical Hebrew names and nine planetary OAM values.

Table 2 presents data for ONV (object numerical values) along with OAMs values for all nine planets.

Name	Object		Angular		Mass (M; kg)	Log-M
	Hebrew name	Numerical Value (ONV)	Orbital Momentum (OAM; kg*m/sec)	Log-OAM		
Pluto	<i>Kochav</i>	43	3.6E+38	88.78	1.27E+22	50.89589
Mercury	<i>Kimah</i>	75	9.1E+38	89.71	3.3E+23	54.15338
Mars	<i>Ksil</i>	120	3.5E+39	91.05	6.42E+23	54.81888
Venus	<i>Mazar</i>	247	1.8E+40	92.69	4.87E+24	56.84514
Earth	<i>Eretz</i>	291	2.7E+40	93.10	5.97E+24	57.04879
Uranus	<i>Ash</i>	370	1.7E+42	97.24	8.68E+25	59.72565
Neptune	<i>Aish</i>	380	2.5E+42	97.62	1.02E+26	59.88702
Saturn	<i>Temam</i>	490	7.8E+42	98.76	5.68E+26	61.60416
Jupiter	<i>Shachar</i>	508	1.9E+43	99.65	1.9E+27	62.81165

Table 2. Data for planetary orbital angular momentum (OAM) with assumed biblical names and their numerical values (ONV).

Once again, we remind the reader that attribution of planets' biblical Hebrew names to actual planets (actually, to the OAM values) is based merely on sorting both lists of values in an ascending order. Obviously, for Earth no such sorting is needed. However, Earth position (in both lists) is surprisingly compatible with the general sorting (just as had happened earlier with "Mazar" and "Shachar").

Figure 4 presents the results (the vertical axis presents log-OAM).

We realize that all nine points align themselves on a straight line. The adjusted R-squared is 0.958. The model F-ratio is 181.8, which, for n=9, is highly significant (p=0.000003). In other words, the probability that the nine points in this analysis would align themselves on a straight line, the way they did, by chance alone, is less than 0.0003% . Since the Earth point somewhat deviate beyond the confidence interval lower limit, it is removed from the sample, and linear regression analysis is re-run for a sample of n=8. The adjusted R-squared is 0.977. The model F-ratio is 294.3, which, for n=8, is highly significant (p=0.000003). The results are presented (with Earth excluded) in Figure 5.

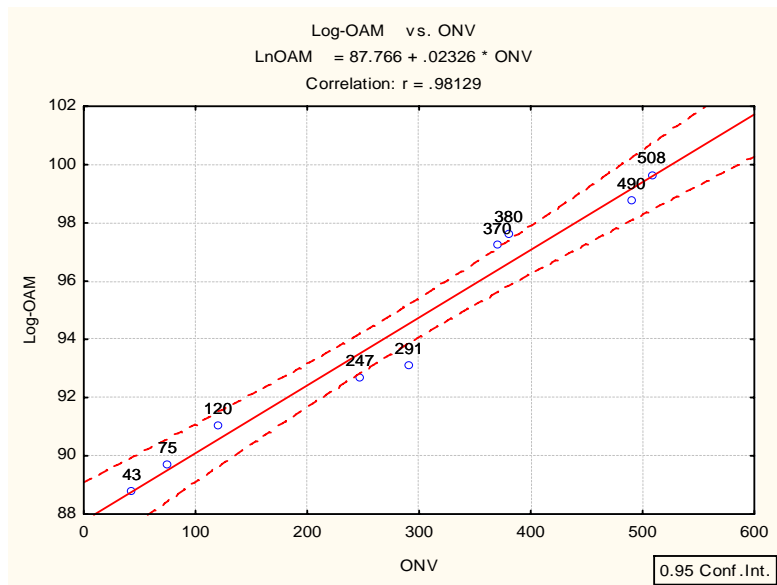


Figure 4. Planetary orbital angular momentum (OAM) of all nine planets as a function of their ONV

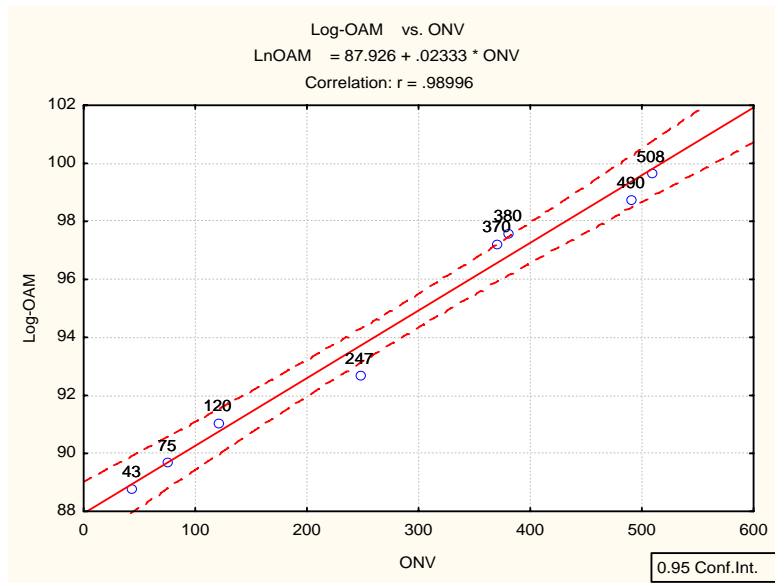


Figure 5. Planetary log-OAM (orbital angular momentum) as a function of their ONV (Earth excluded)

4. PLANETS' MASS

Planets' diameters and planets' mass, where both are measured on a log scale, should be inter-related by a linear transformation if their mass densities were equal. However, we know that average mass densities of the different planets differ. Therefore, we repeat the analysis in a previous section, and explore the relationship between planetary mass and the respective ONV for all nine planets. Values of the planets' mass are added to Table 2.

Figure 6 displays the results.

We realize that a linear relationship exists between the numerical values of the biblical Hebrew words and planetary mass, where the latter is measured on a log scale. Applying linear regression analysis, the adjusted R-squared is 0.953. The model F-ratio is 161.8, which, for $n=9$, is highly significant ($p=0.000004$). In other words, the probability that the nine points in this analysis would align themselves on a straight line, the way they did, by chance alone, is less than 0.0004% .

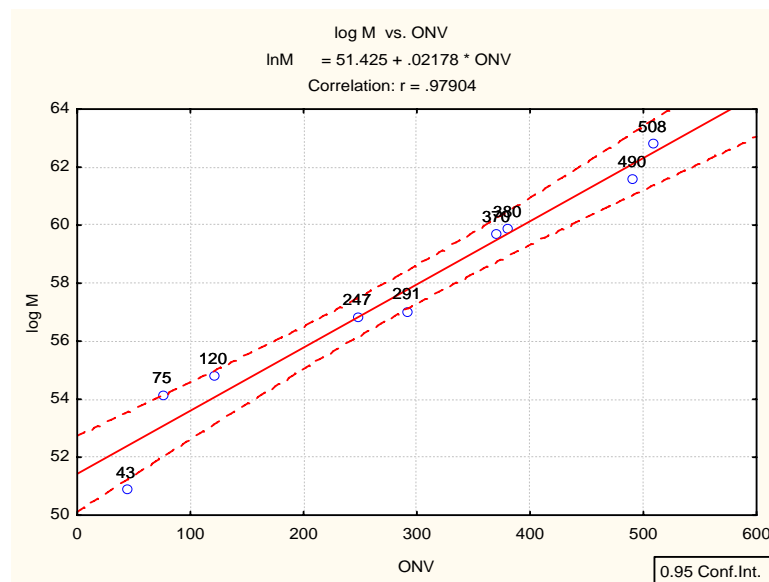


Figure 6. Planetary log-M (Mass, in Kg) a function of their ONV

5. HOW LONG IS HUMAN PREGNANCY?

The data below were forwarded to me by an American Obstetrician/Gynecologist, living and working in Mali, West Africa. Permission was granted to publicize excerpts from his e-mails, as given below. However he preferred to remain anonymous and therefore we will refer to him as Dr. X.

His e-mail to me regards the duration of human pregnancy. In my book I quote the numerical value of 271 days for “Herayon” (pregnancy), as indicative of expected duration of human pregnancy (Shore¹, p.49). However I quote two commonly accepted methods to calculate duration of human pregnancy: “One method is to measure human pregnancy from fertilization time, which is commonly accepted to be, on average, 266 days. Another method is to measure human pregnancy from the last menstrual period, which is commonly accepted as 280 days. The simple average (midpoint) between these two figures is 273 days (about nine months).”

Thus Dr. X:

“Dr Nagele, a physician in the 1850’s or so, created a rule for estimating the due date of a human pregnancy based on the first day of the last menstrual period. At this point, no one even knew that ovulation and therefore conception was taking place at approximately day 14 of the ovulatory cycle, so the only fixed point was the first day of the last menstrual cycle, and of course, one is not pregnant at this point, as one is actively sloughing the endometrial contents. Nevertheless, this is the one fixed point by which to date a pregnancy, and in his study of patients, he determined that the due date is 280 days after the first day of the woman’s last menstrual cycle. He invented a rule by which to estimate this for patients. It is still used today- Nagele’s rule⁵. Take the first day of the last cycle and then subtract three calendar months and add 7 days- the resulting day (about 280 days later) will be the patient’s approximate due date.

Later, in the 1930’s or 40’s it was determined⁶ that ovulation, and therefore conception was taking place approximately 14 days after the first day of the last menstrual period- thus the classic length of human gestation of 266 days after ovulation (and therefore conception +or- 1 day, as both the sperm and the egg can live in the female genital tract for about one day in the unfertilized state, before dying) was established.

These two numbers have been used ever since, and you refer to them in your book. However, in 1990, Dr Robert Mittendorf *et al.* published a comprehensive study of estimated delivery dates of American women⁷. As far as I know, this is the most recent scholarship done on this question. Interestingly he found that for women who had never had a child before, the average length of pregnancy was 274 days after conception, while for women who have had at least one baby before, the average length of gestation was 269 days. I find it fascinating that the average of these two is 271.5!! It is remarkable to me that 271 is found to be so near the center of the distribution by the most recent scholarship.

Thus Dr Mittendorf’s data show average gestation to be about 5 days longer on average than Dr Nagele’s data, and this only serves to further tighten the biblical evidence for 271. I suspect a true picture of the data would show a bell shaped curve centered directly on 271.”

6. WHAT PERCENTAGE OF THE HUMAN BLOOD IS CELLULAR?

In the same message, Dr. X refers to the fact that blood is Hebrew (“Dam”) is numerically equivalent to 44. I refer to this fact in my book, drawing attention that whenever a numerical value of a biblical Hebrew word amounts to a repeated appearance of a single digit (like “Sheleg”, snow, equaling 333), this number indicates a major physical property of the object that the word refers to. Relating to human blood, I have interpreted the repeated “4” as signaling the number of blood varieties that exist (Shore¹, p. 61 and 146). Dr. X believes that the number “44” conveys even deeper meaning, signaling the proportion of cellular blood (all the rest is liquid) in the human blood:

“One other thing that strengthens your case is the fact that one standard measure of human blood is called the hematocrit. This is the percentage of blood that is cellular (the rest being liquid- the plasma). The hematocrit normal values vary between males and females, but normally they are cited to be 42 - 50% for men and between 35 - 47% for women. Consult any laboratory manual and you will see that the norms cited for male and female hemoglobins always contain the number 44 for both, and a simple average of the male and female norms will always center around 44!!! I looked at several different limits of normal according to different texts and sites, and found my averages to always be between 42.5 and 45. So...this is astounding, eh?? 44 is definitely a key number for human blood.”

7. CONCLUSIONS

There is a growing body of evidence that numerical values of biblical Hebrew words store hidden information that relates directly to some major property of the objects symbolized by the words. Shore¹ has added a new dimension to this evidence by introducing the requirement for an inter-related set of words to display a statistically significant linear relationship between the numerical values of the words and the respective measures of the physical property. This requirement can be fulfilled either when the physical property is measured on the original scale or on a log scale. Sometimes, determination of the exact physical property is not clear-cut, like with the colors example, given in Shore¹, Ch. 8, where each color has an interval of frequencies that can represent it. For such cases, an additional statistical analysis may complement the linear regression analysis, based on calculus of probabilities. The latter calculates the probability of the numerical values of the words in the set to be sorted by chance identically to the sorting according to the physical property. If that probability is extremely small, evidence is provided for the implausibility of the “chance occurrence” hypothesis, and further strengthens the support for the alternative hypothesis, namely, that meaningful hidden information is stored in the numerical values of the biblical Hebrew words.

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