

## ENGLISH ABSTRACTS

### PROF. SAUL LIEBERMAN AND THE INSTITUTE FOR ADVANCED TORAH STUDIES AT BAR-ILAN UNIVERSITY: A CHAPTER ILLUMINATING HIS *WELTANSCHAUUNG*

*Shlomo H. Pick*

The article discusses Prof. Saul Lieberman and his relationship to the Torah world. Part I enhances some of the material found in Marc Shapira's *Saul Lieberman and the Orthodox*. Part II discusses Lieberman's relationship with Israeli rabbis and Bar-Ilan University, especially its Department of Talmud. Part III provides new information concerning Prof. Lieberman and his relationship with and support of the Institute for Advanced Torah Studies at Bar-Ilan University, which is basically a yeshiva and a kollel in its classic form. His support reveals his allegiance to Halakhah as the only criterion for all activities.

### ALGORITHM FOR LAND DIVISION AND THE JUBILEE IN MODERN TIMES

*Erel Segal-haLevi*

When the Israelites entered the land of Israel during the days of Joshua ben Nun, they were instructed to divide the land equally among them. They were also instructed to return the lands to their original owners once in 50 years. In our times, the lands are not divided equally, so it does not make sense to start counting towards the Jubilee, since this will only serve to keep the unequal division. On the other hand, in today's reality, it is not practical to actually take all lands and divide them equally. This paper presents a graph-based algorithm for gradual implementation of the Jubilee idea, thus ensuring that the number of land-owners will increase monotonically with minimal intervention in the land market. Agent-based simulations show that this algorithm converges to a state where every citizen has a land plot.

*MEGILLAH AFAH: THE MEASUREMENT OF THE WORLD ACCORDING  
TO R. ELIEZER HAKALIR'S PERCEPTION*

*Uri Zur and Yehudah Ashkenazi*

The present article deals with R. Eliezer HaKalir's understanding of the meaning of *zeret* (the "little finger" or "pinky") as a term denoting a unit of length, and the measurements of the universe as compared with those of the Torah.

The Tosafists cite HaKalir in connection with the following Talmudic passage (Eruvin 28a): "A folded [lit., flying] scroll, its length is twenty cubits, and its width is ten cubits, and when you unfold it, it would be [its extent] twenty by twenty [cubits], and since it is written, 'It was written within or without,' and if you peel it, how large would it be? Forty by twenty cubits. And it is written, 'Who has measured the waters in the hollow of his hand, and the heavens with a span He gauged'. Consequently, the entire universe is [equal to] one [part] in a three thousand and two hundred of the Torah."

In Eruvin 28a, s.v. "*echad*," the Tosafists quote HaKalir as follows: "Two thousand and four hundred in the world extended." R. HaKalir maintains that the size of the Torah is the same as that of the scroll (*megillah*), or 20 cubits (*amah*) by 40 cubits, thus totaling 800 square cubits.

Commentaries abound and debates are rife concerning the meaning of R. HaKalir's words. It is difficult to uphold any one definitive conclusion as to whether his opinion is that the size of the universe is equal to that of *zeret* (as did the Tosafists). Also, it appears that R. HaKalir distinguished between units of area and volume, unlike the text of the *sugya* in Eruvin and the Tosafot, a point which has confused some of the commentators.

The aim of the present article is to interpret R. HaKalir's view and to address the difficulties raised by the Tosafists in this connection. To do this, a series of different commentaries on R. HaKalir's words and the Tosafists' gloss will be taken into consideration.

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THE SOURCE OF AESTHETICS AND FIBONACCI NUMBERS IN  
TALMUD'S TALES

*Avraham Karsenty*

The Talmud uses “axioms” describing man in his environment. One of them is brought in the Berakhot tractate: “Three things increase a man’s self-esteem: a beautiful dwelling, a beautiful wife, and beautiful clothes.” Beyond the spiritual approach, this axiom can be explained using the mathematical Golden Ratio (Phi) value. This assumed divine proportion appears in nature and the human body like a divine stamp, suggesting that the world is a planned creation. It exists not only in global architecture and art, but also in Noah’s Ark, the Tabernacle, and the Temple. In this article, we demonstrate three novelties: 1) Even Talmudic axioms can be explained with mathematics; 2) the Golden Ratio, primarily cited in non-Jewish references, also appears in the Torah; and 3) the difficulty to identify the Golden Ratio in Torah texts is related not only to its different historical names, but also to the fundamentally different approach between Torah and other cultures.

UNDILUTED AND DILUTED WINE: THEIR WINE AND OUR WINE

*Zohar Amar*

In the hot Mediterranean climate of the Land of Israel and Babylon, wine may be produced by a natural manufacturing process similar to the techniques that were used in the past, delivering a product with a high percentage of alcohol and residual sugar. This allows for the production of a strong, sweet wine with a maximum alcohol content of 15.5% that may be preserved for a relatively extended period. Because of the high alcoholic content, it was accepted practice in many places in Mediterranean society during the Talmudic and Mishnaic periods to mix the wine with water, at various levels of dilution. It seems that the most common proportion was a ratio of 1:3, and this standard was ultimately accepted as a definition in Talmudic Jewish law and by Maimonides.

However, among the first religious decisors in Ashkenaz we find for the first time a distinction between “our” wine and “their” wine (and this later influenced the religious decisors of Sepharad). The explanation for this difference is related to climatic circumstances; indeed, the wine manufactured in Ashkenaz was weaker

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than that generally found in the Middle East. It seems that as the parallel of latitude is more northern, the level of alcoholic content in the grapes decreases due to insufficient exposure to the sun. This explains why the rabbis ruled that there is no need to dilute the wine with water, and it is better to drink it unmixed. In fact, regions above the 50th parallel north are not suited to grape-growing and wine production, and therefore in the past, it was difficult in those regions to obtain wine, which was consequently very expensive. This is the source of the Ashkenazic custom of making *kiddush* on bread and allowing other high-status beverages to also be permitted for this purpose. The article discusses the various schools of halakhic thought for defining which beverages are appropriate for the blessing of *borei pri hagefen*, as well as determining the currently accepted standard in the Israeli wine industry.

The strength of wine is measurable today in absolute values using a vinometer, and if our interpretation is correct, one can precisely measure the halakhic “standard” for wine and determine the degree of dilution relative to the quantity of grapes in the wine or to the alcohol content in various wines – at a ratio of 1:3. In other words, one can propose determining a standard of at least 25% grapes in grape juice or wine.

In the strong wines of the Land of Israel, the undiluted wine can be mixed so as to ensure that its alcohol content is not less than 4%. Accepting this standard (for those who are not bound by the later Sephardic rabbinical rulings) may make it easier for those who are not accustomed to drinking strong wine, and who wish to perform the commandments in the strictest way by drinking the four cups on Passover using red wine rather than grape juice.

## IDENTIFYING THE ACACIA TREES OF THE TABERNACLE

*Mordechai E. Kislev*

Two species of acacia were used for construction of the Tabernacle and its appurtenances: the white thorn (*Acacia albida*) was used for the poles and frames, and the Egyptian thorn (*Acacia nilotica* spp. *nilotica*) for the appurtenances, including the Holy Ark and the table. Here we assume that the Tabernacle was built from the best wood that was available to the ancient Hebrews, and these two acacias have clear advantages over their related species. In ancient Egyptian, the various acacia trees are called *šnd.t*, which made its way directly into Biblical Hebrew as *shitta* (שיטה). In our region, only the white thorn has a large enough

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trunk to form the frame boards, which were 5 m high and 0.75 m wide. The Children of Israel would not have been able to cut and dry the boards in the short time period between their receiving the commandment to build the Tabernacle on Tishrei 11 and its completion on Adar 23 in the same year. They therefore must have brought lumber with them from Egypt. The crossbars were most probably made from the horizontal roots of the white thorn brought from Eretz Yisra'el and replanted in Egypt. The Holy Ark and the table which were used in the Tabernacle and the Temple for 850 and 480 years respectively (unlike the frame boards and crossbars that were in use for only 53 years) had to be made of an extremely stable wood, namely Egyptian thorn.

### THE MATHEMATICAL STRUCTURE OF THE “4-GATE TABLE” AND THE PREVALENCE CALCULATION IN THE HEBREW CALENDAR

*Eran Raviv*

In previous papers (BDD 22 and BDD 26) we demonstrated that if we wish to calculate the prevalence of *simanei hashana* we must consider that the *molad* of the *rosh machzor* cannot occur continuously in all parts of the week (181440 parts).

In this paper we analyze the “4-gate table,” an ancient table from the period of the Geonim. In order to understand the internal structure of the table, we explain the mathematical function of the *rosh machzor*. In the second part we divide the 4-gate table into its basic building blocks, regarding the internal structure of 19 years as *machzor katan*.

In the second part of this paper, we present a new method describing how to change these building blocks, after which we can rebuild the “new 4-gate table.” From this new table we can calculate the prevalence of *simanei hashana* correctly and accurately.

THE GENERATION OF SECESSION AND THE PROBLEM OF LINGUISTIC  
AMBIGUITY

*Gaby Ravenna*

The linguistic schism that formed in the wake of the story of the Tower of Babel expressed itself not only in the formation of new languages, but also in the indistinctness of identical words. In this context there are four approaches:

The descriptive approach, formulated in *midrash* and *piyut*, focusing on a graphic description of the occurrences.

The social approach of Rabbi Samson Raphael Hirsch, who perceives linguistic ambiguity as an expression of social processes.

The imminent approach of Abraham Korman, according to which the change that occurred in the nature of language and its indistinctness is an inner and fundamental transformation.

The philological approach, represented by Samuel David Luzzatto and Isaac Samuel Reggio, who view the indistinctness of language as a result of various philological phenomena, and which is limited only to the instances where these phenomena occur.

From these approaches arise several principles that have applications in the field of information and knowledge – the awareness of language's indistinctness is necessary for coping with it, and ignoring it may lead to unbearable consequences.

Social homogeneity simplifies the exchange of information and its organization and retrieval. The narrower a field of knowledge is, the more uniform its language, and consequently, the exchange, organization and retrieval of that knowledge is more straightforward.

Expressions having different meanings from their literal meanings may reduce the efficiency of information systems. Even within a single language, many dialects exist and this should be taken into consideration when organizing information.



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TORAH AND TRIZ: ANALYSIS OF IDEAS OF JEWISH SAGES USING THE  
TRIZ APPROACH

*Yehuda Stupniker and Haggai Zilberberg*

In this research, we performed a ground-breaking step analysis of Jewish sages' ideas using the Theory of Inventive Problem Solving (TRIZ), that was formulated by the Russian-Jewish thinker, Geinrich Altshuller. Dealing with problem solving is the main component of the thinking process, and theoretical and applied research regarding this topic has intensified in recent years. This research investigated the existence and meaning of the connection between the ideas of Jewish sages and TRIZ.

For the purpose of this study, fundamental TRIZ ideas, such as deciphering, contradiction defining, ideal solution, and screen thinking concept were described. Some ideas from mainstream Jewish sages were analyzed with examples from the Talmud and Jewish sages. The TRIZ system was used as a tool for the analysis of these examples. This initial step is based on the analysis of more than one hundred examples from Jewish sages throughout the generations. Our conclusion shows a clear connection between Jewish sages' thought and TRIZ with various applications. In addition, this is the first time the TRIZ approach has been used for the analysis of ideas from Jewish Talmudic thought.