

ENGLISH ABSTRACTS

DEFINITION OF TEMPORARY HOURS ACCORDING TO HISTORICAL AND ARCHEOLOGICAL FINDINGS CONCERNING SUNDIALS

Ytshak Chavet

Many “mitsvot” depend on the hour of the day. Most “poskim” agree that all hours mentioned in the Talmud are “temporary” hours, namely, hours obtained by the division of the day length by twelve, independent of the actual day length, be it short (as in winter) or long (as in summer). However, how should the day length be defined? Different opinions prevail on that subject. The two most common definitions for the day length are either from dawn to the stars’ appearance (like “Magen Avraham”) or from sunrise to sunset (like the GR”A).

In order to find out what method was used during the Talmud period, the paper reviews the methods used for measuring time from ancient to modern times. Before the invention of any tool for that purpose, time of the day was assessed by visually evaluating the sun’s height in its course from east to west. The first sundial invented during the third century B.C. measured the temporary hours between sunrise and sunset and these hours were quickly adopted in the whole Mediterranean zone and even further eastward. A sundial of this type was discovered in the excavations of the Temple area. The more perfected sundial measuring true equal hours was invented only in the twelfth century, a long time after the Talmud period.

After discussing the mentioned data, and further pertinent details, the paper concludes that, in the time of the Talmud, temporary hours were used and measured with the original sundial that was common in Eretz-Israel, as in the whole region, and which measured the hours strictly between sunrise and sunset. Any other proposition defining temporary hours has, therefore, neither historical nor logical basis.

DID JOSEPHUS SAVE HIMSELF BY VIRTUE OF HIS
MATHEMATICAL KNOWLEDGE?

David Schonberg

The thesis set out in the article, despite Josephus' portrayal of his having been saved by chance or by Providence at the lottery carried out in the cave near Yodfat when he (with another) remained out of a group of those hiding from the Romans, is that Josephus saved himself by virtue of his mathematical knowledge and designed the lottery in advance so as to be saved. To this end, he was not assisted by elimination systems known only in ancient history or in far-away cultures, but specifically by a known system and mathematical knowledge available in the Jewish world of his times and in close proximity, his surroundings in Jerusalem.

There is what is called today in mathematics "the Josephus problem", a term first coined by a French mathematician at the outset of the 17th century in regard to a certain type of mathematical conundrum. One of the earliest examples of a conundrum of this type can be found in the works of Abraham Ibn-Ezra. This type of conundrum relates to what is called "counting-out", i.e. a counting system in which one person of a group is picked out, each time. The mathematical riddle was seen to be reminiscent of Josephus' account of his saving himself at Yodfat in a type of lottery as the conundrums were posed with the understanding that a solution could be worked out in advance and it had been always suspected that Josephus somehow "fixed" the Yodfat lottery in his favour. Yet, the question remained as to how exactly Josephus may have arranged his lottery in order to make sure of his survival.

The article considers, primarily from a historical outlook, the required mathematical knowledge for such a lottery and the sources for such knowledge: whether the lottery/ elimination systems that were practiced in the Roman legions; whether the various elimination systems known to us from the Middle Ages, such as that brought down in the name of R' Abraham Ibn-Ezra, a kind of conundrum that may have been known in the ancient world; or the various lottery systems practiced amongst the Jewish people since ancient times.

The article makes the proposition that whatever Josephus may have done, it is unlikely that he relied on chance nor can one assume that he acted in a vacuum. Our proposition is that the lottery he suggested, in all likelihood, had certain similarities to lotteries known in his times. Of these, though, it is unlikely that he was assisted by elimination systems known only in ancient history or in far-away

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cultures. Nor is it likely that the Yodfat lottery used actual lots, as he describes, as cheating in such a lottery would have been too obvious and risky. Thus, the Yodfat lottery was probably different from that which he described – but from where might Josephus have derived inspiration for his lottery?

Of all the lottery systems open to possible manipulation and the most likely that could have provided inspiration for the lottery at Yodfat, there was one that took place regularly in Josephus' immediate surroundings – the *payis* carried out in the Temple. Of this, we know that attempts were made to “fix” the results, so there was clearly both an awareness of and ability to preempt counting-out systems in Josephus' times. Thus, we posit the theory that Josephus' lottery was inspired in some way by the *payis*, and we examine its operation – the *payis* being a lottery that Josephus must have known well, coming as he did from Jerusalem's priestly circles.

HOW DOES THE HOLY SCRIPTURE REGARDING “SOLOMON'S SEA” COINCIDE WITH MATHEMATICAL KNOWLEDGE?

Daniel Moshe Levi

The holy scripture describes the round vessel that Solomon created as having a diameter of 10 Ama and a circumference of 30 Ama. By common mathematical knowledge a circle that has a diameter of 10 Ama should have a circumference of more than 31 Ama.

However, one can derive from additional verses in the scripture that the actual diameter of the vessel was not exactly 10 Ama, but rather approximately more than 9.5 Ama. Such a diameter will indeed give a circumference of 30 Ama, and the holy scripture will be verified according to our mathematical knowledge.

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THE ANNULMENT OF *KCHAL* IN A RATIO OF FIFTY-NINE PARTS: A
MATHEMATICAL EXPLANATION IN LIGHT OF THE “BEIT MEIR”
COMMENTARY

Tuvia Shlomo Bar Ilan, Nathan Keller

One of the fundamental laws of Kashrut states that something forbidden will be nullified if it is mixed with a Kosher substance at least sixty times its volume. Similarly, milk and meat accidentally cooked together is not forbidden if the meat ingredient comprises less than a sixtieth of the total volume of the dairy ingredients, or vice versa. One of the exceptions to this rule is the *Kchal* – the udder. If the udder is cooked with meat, the volume ratio required for annulment is fifty nine, and not sixty. In this article, we discuss the “Beit-Meir” explanation of this law, and propose a mathematical formula according to which the required proportion, fifty nine times in volume, is not arbitrary, but an exact, essential proportion.

EMOTIONAL INTELLIGENCE IN THE BOOK OF PROVERBS

Erel Segal Halevi

The book of Proverbs contains many verses about emotions, how they affect us and how we can control them. This domain, sometimes called “Emotional Intelligence,” is also a subject of contemporary scientific research. The article discusses several verses from the book of Proverbs that deal with emotions, and compares each verse with one or more studies from recent decades that deal with a similar subject.



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“THE EXISTENT WILL BE THE POINT OF DEPARTURE”:
THE EULOGIST AND THE CRAFT OF EULOGY IN
CONTEMPORARY ISRAELI SOCIETY

Yaron Silverstein

One of the most difficult experiences in a person's life is the passing away of someone close. This event arouses overwhelming emotions such as shock, fear, guilt, loneliness, insecurity with regard to the outside world, and the undermining of one's worldview. This event may become a significant meeting point between a rabbinical figure and a diverse population. In this framework the rabbi is expected to deliver eulogies at the funeral, during the *shiva*, and in various memorial services for the deceased. The good deeds of the deceased should constitute the center of the eulogy, and these deeds should be linked in the context of faith and Halakhah. The purpose of the eulogy is to console the deceased's relatives, to provide a spiritual framework for this difficult event, and to create a future commitment to the continuation of the deceased's good deeds. The rabbi should be aware of the moral value scale of the deceased and his family, and adjust himself to these values. The object is to discover the positive aspects within each and every human being. The starting point should be the set of values held by the deceased and his family, in accordance with the values of Judaism as perceived by the rabbi delivering the eulogy.

The importance of the eulogy in modern society has increased due to the disintegration of old social structures as well as the decline of traditional mourning customs. The death of a relative creates a need for private as well as familial introspection along with a need for spiritual and emotional support. The eulogy is the first step in granting this support.

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THE END OF IDOLATRY IN ISRAEL DURING THE PERSIAN PERIOD:
AN INTERDISCIPLINARY STUDY

Rivka Raviv

The phenomenon of idolatry as part of the national life of the Israelites is mentioned throughout the Bible, especially from the period of the Judges until the destruction of the First Temple. The campaigns engaged by the prophets of Israel against this phenomenon were unsuccessful. In this article, the question whether idolatry had disappeared from the lives of the Jews who returned to Zion after the Babylonian Exile is addressed. This issue is analyzed from three different fields of study: the biblical books at the end of the Jewish canon, the archeological evidence from the Persian period, and late reviews by the Sages in their writings. This analysis leads to the conclusion that despite the fact that idolatry had been a deep-seated problem for the Israelites for an extended period of time, and although idolatry continued to be widespread in Gentile society, it disappeared from Jewish public life in the Land of Israel during the Persian period.

BRINGING A YOUNG CHILD TO SYNAGOGUE: THE TENSION
BETWEEN EDUCATIONAL IDEALS AND ISSUES OF JEWISH LAW

Orna Schneider

Teaching the young to be observant Jews in general, and teaching them to come to synagogue for prayers from early childhood in particular, is held up as an educational ideal in the writing of our Sages, and the latter is seen as part of a religious experience essential to the construction of the young child's Jewish soul. The objective is to train the children to be G-d fearing and to sow the seeds of a strong faith. However, starting in the 16th century, the educational reality of having young children present during the religious service at the synagogue also became an anti-educational reality. Our Sages describe improper behaviors on the part of young children which interfered with the prayer service, and thereby insulted the sanctity of the house of prayer – the “mikdash katan”. This new reality resulted in much legal discourse surrounding the issue of “bringing a young child to the synagogue”.



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Biblical Commentary teaches that the ongoing tension between the educational ideal and issues of Jewish law remained unchanged throughout the generations, and reached its zenith in the post-modern era. Furthermore, there were marked differences in the ways that the religious establishment dealt with the problem, depending on the specific time and place. The latter underscore the prevalent social attitudes of the different communities in question.

THE ORAL LAW: ITS LIMITS, SOURCES AND FATE
ACCORDING TO MAIMONIDES

Yitzhak Isaak, Alexander Klein

This paper attempts to deal with some fundamental questions about the Oral Law, according to the doctrine of Maimonides:

- Which part of the Oral Law is the word of God and which part is the work of the Sages?
- Why can some of the message be written – the written law – whereas other parts were intended to remain oral – the Oral Law?
- What is the mechanism that ensures the integrity and the truth of what is passed on orally from generation to generation?
- Under what circumstances has Oral Law been written down, and what are the implications of this step?

It turns out that Maimonides had an original approach to understanding the term “Oral Law”, which is inconsistent with the common understanding of that term. According to Maimonides:

- The “Written Law” is that which God instructed Moses to write.
- The “Oral Law” is the complex interpretations of the “Written Law” and the additional laws that were given to Moses with the intent of remaining oral.
- There may be a contradiction between the simple meaning of the Scripture and the “accepted interpretation” given at Sinai. This is so in two ways, when the simple meaning of the Scripture presents the ideal law, and the “accepted interpretation” suggest how the law can be implemented in practice.



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- There can be no disagreement regarding the Law given by God to Moses. On the contrary, the existence of a controversial law is proof that this law was not given at Sinai.
- Not all the Talmudic negotiations were given at Sinai, for example, the rabbinical interpretations to the verses of the Bible.
- The Oral Law should have been left in its original state. But it was not expressly forbidden to write it down. Therefore the sages, when they deemed it necessary, put it in writing.