

**FINDINGS OF THE COMMITTEE TO INVESTIGATE THE GANS-INBAL RESULTS ON  
EQUIDISTANT LETTER SEQUENCES IN GENESIS**

by Robert J. Aumann and Hillel Furstenberg

**Abstract**

In 1996, a committee was formed to examine the results that had been reported by H. J. Gans regarding the existence of "encoded" texts in the bible foretelling events that took place many years after the Bible was written. The committee performed two additional tests in the spirit of the Gans experiments. Both tests failed to confirm the existence of the putative code.

## **Preface**

The committee whose report is provided herewith began work in 1996. The report, signed on 6 August 1998, contains instructions for carrying out a replication of the Gans-Inbal experiment. Collecting the data for this replication took an additional four years. The results reported in Part D of the report were calculated on 16 July 2002.

This report contains only material generated up to and including the moment that these results became known. All material generated after that date is included in a separate document, DP 365 of the Center for the Study of Rationality.

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2 May 2004

August 6, 1998

**Findings of the Ad Hoc Committee for the Investigation of the Gans-Inbal Results on the non-random occurrence of ELS's (Equidistant letter sequences) in Genesis.**

The Committee was organized at the initiative of Prof. D. Kazhdan.

The committee includes five members:

1. Prof. R. Aumann
2. Dr. D. Bar-Natan
3. Prof. H. Furstenberg
4. Dr. I. Lapidés
5. Prof. E. Rips

## **Part A - Introduction**

This committee was set up to look into the results reported by Gans in [G]. It will be recalled that previously Witztum, Rips and Rosenberg [WRR] had reported that the names of certain Rabbinic personalities who lived during the last millennium appeared in the book of Genesis in ELS's at a distance from the anniversaries of their deaths and births that is significantly lower than would be expected if the phenomenon were due to chance alone. WRR used the Margalioth Encyclopedia (1961) to generate a list of names and dates.

Gans reported a similar outcome, with dates replaced by localities. Also the Gans experiment was based on the Margalioth Encyclopedia, and used the Encyclopedia Hebraica (1981) to generate the list of Rabbinic localities following a clear algorithm.

The Committee decided to perform another test in the spirit of the Gans experiment. As the identification of the localities and their designations involves matters of judgement, the committee decided to turn to independent experts to generate the list. The selection of the experts was left to Prof. H. Furstenberg, a member of the committee, and Prof. A. Lubotzky, who is not a member of the committee. The identities of the selected experts were not revealed to the other committee members, until after the results of the computations were reported.

Agreement could not be reached on the instructions that the experts were to receive, so two sets of instructions were generated. One, which we here call the "Fresh" test, leaves more to the expert's discretion. The other, here called the "Replicative" test, hews more closely to the principles used in Gans's investigation, leaving less discretion to the experts. Each of the two lists thus generated was matched against the list of personality designations appearing in the Gans report.

Except for Appendix 4 below, and the numerical results reported in part D, this entire document was decided on and composed before any experts were consulted and before any computations were done. In particular, this applies to the criteria described in part B and the remarks in Section E.

## Part B - Criteria for Evaluating the Results

There are several rabbinic personalities involved in the WRR and G results. An early version of WRR was carried out with a list of 34 rabbinic personalities, while the version appearing in [WRR] is based on an additional list of 32 personalities. [G] is based on the combined list of 66 personalities. There are also different statistics that can be measured. Of relevance to us are the statistics P2 and P4 described in [WRR]. In the case of the Replicative test, which was to conform rather closely to the Gans experiment, we too use the combined list of 66 personalities and measure the P4 statistic, except that we use a permutation rank (as in [WRR]) rather than the raw statistic employed by Gans. This result is referred to as R. In the case of the Fresh test we calculated both P2 and P4 for the separate lists as well as for the combined list, thus arriving at six numerical values. The result, which we call F, is then defined as the next to "optimal" result; i.e., the value next to the least of the 6 numbers.

The outcome of the Fresh test will be deemed positive, i.e., to indicate that there is a real phenomenon of non random placement of ELS's in Genesis ("codes"), if  $F \leq .001$ ; negative, i.e., to offer no support for the codes hypothesis, if  $F \geq .05$ ; inconclusive, otherwise.

The outcome of the Replicative test will be deemed positive, i.e., to indicate that the phenomenon of codes is real, if  $R \leq .0002$ ; negative, i.e., to offer no support for the codes hypothesis, if  $R \geq .05$ ; inconclusive, otherwise.

## Part C - Calculations and Dissemination

1. The Committee requests E. Rips and D. Bar-Natan to carry out the calculations independently and to report the outcome.
2. Transcripts of the Committee meetings will be made available to the public at the Center for Rationality of the Hebrew University.
3. The Present Document will be posted on the Internet and appear as a Discussion Paper of the Center for Rationality of the Hebrew University.
4. The names of the experts will be revealed (see Appendix 4 below), but only after all calculations are carried out (and, if necessary, reconciled).

### Part D - Results

1. The Fresh test resulted in a level of  $F = \dots$ , which is deemed  $\dots$ .   
(0.463406)                      (negative)
2. The Replicative test resulted in a level of  $R = \dots$ , which is deemed  $\dots$ .   
(0.617040)                      (negative)
3. For reference, the result of the Gans experiment was  $G = \dots$ .   
.000005.

As explained in Part B, the numbers displayed in 1-3 are permutation ranks computed using the algorithm of WRR. The discrepancy between the result of (3) and the result reported by Gans is due to the difference between the algorithms used.

### Part E - Cautionary Remarks

Caution must be exercised in interpreting these results. Even the Fresh test cannot be regarded as completely "fresh" - it is correlated with data on which codes experiments were performed before. However, the instructions were formulated in broad terms. In the case of the Replicative test, the instructions to the experts were more detailed, though they were still phrased in general terms and no specific localities were mentioned in them. One might say, therefore, that this data set is less "fresh".

On the other hand, if there is indeed a phenomenon of codes, then one would expect it to follow certain general rules or practices. Some idea of these rules were gained from the WRR experiment on dates, and from other previous experience (on matters unrelated to the localities in question), and it would be legitimate to incorporate these ideas in testing the localities. This is the logic behind the Replicative test.

The result  $G$  of Gans's experiment was adduced in Part D above for comparison with the result  $R$  of the replicative test. A great disparity between  $R$  and  $G$  may raise eyebrows. But it should be noted that if indeed there is a code phenomenon, then  $G$  might a priori be considerably smaller, or larger, than  $R$ . For example, this could happen if the expert had used spelling conventions that are systematically different from those used by the putative encoder.

### Part F - Minority Reports

In spite of the minority reports submitted herewith, it should be stressed that the form of Part A, and the texts of the instructions to the experts, were agreed upon by all the committee members. Moreover, both Dr. Bar Natan and Prof. Rips agreed that the statistics  $F$  and  $R$  described at the beginning of Part B were appropriate tools for judging the result. But, Dr. Bar Natan was opposed to setting any pre-specified thresholds by which to judge the results.

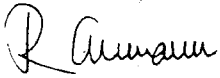
### Appendices

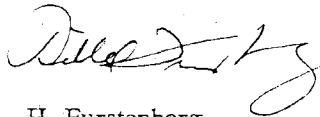
1. The Gans article;
2. The article of Witztum, Rips and Rosenberg;
3. Texts of the letters to the experts;
4. Responses of the experts;
5. Minority Reports.

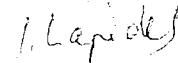
### Signatures

This document will be signed and dated twice; first, when the deliberations of the committee are finished, and second, when the results of the computations are reported.

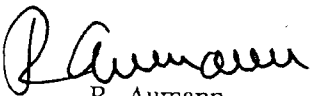
First Signatures:

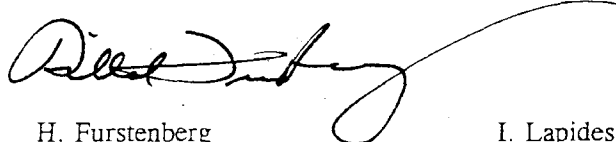
  
 R. Aumann  
 א"י 6/10/98  
 א"י 6/10/98

  
 H. Furstenberg  
 6/8/98

  
 I. Lapidès  
 6/8/98

Second Signatures:

  
 R. Aumann  
 א"י 15/6/03  
 15.6.03

  
 H. Furstenberg  
 15/6/03

I. Lapidès  
 Prof. Lapidès was not willing to affix his second signature to this report.