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**ANALYSES OF THE "GANS"
COMMITTEE REPORT**

by

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Abstract

This document contains four separate analyses, each with a different author, of the “Gans” committee report on the Bible codes (DP 364 of the Center for the Study of Rationality, June 2004). The analyses appear in alphabetical order of the authors’ names. Three of the authors were members of the committee; one, Doron Witztum, is active in Bible codes research. Two of the analyses—by Aumann and by Furstenberg—support the report of the committee; the other two—by Lapidés and by Witztum—do not. This document contains material that was generated after the results of the committee’s experiments became known; other than reporting the numerical results themselves, DP 364 contains only material generated before they became known.

A PERSONAL PERSPECTIVE ON THE WORK OF THE “GANS” COMMITTEE

Robert J. Aumann

1. As reported by Aumann and Furstenberg in DP 364 of the Center for the Study of Rationality (June 2004), the committee that investigated the Gans-Inbal results on the Bible Code was unable to replicate their results. Thus, the evidence gathered by the committee fails to confirm the existence of the putative code.
2. By their nature, significance tests of the kind performed by the committee can only show that a phenomenon exists (or is very likely to); they can never show that a phenomenon does *not* exist. Even when—like here—the test turns out negative, in principle it remains possible that a different design may yield a positive result.
3. Nevertheless, failure to confirm an experimental finding in a replication of a scientific experiment casts doubt on the validity of the original finding. When there is a question as to whether or not a phenomenon exists, a negative finding such as that of the committee must be taken as evidence against the existence of the phenomenon.
4. In this instance, doubts have been raised as to whether the committee’s experimental design was carried out correctly; in particular, whether the data provided by the experts was in all cases correct (please see the section of this document authored by Doron Witztum). From some viewpoints, some of these doubts are unquestionably justified; in one case, an expert provided data some of which he himself subsequently acknowledged to be mistaken.
5. But, in spite of acknowledged mistakes in the data provided by the experts, the committee’s work should not be entirely discounted. The input to the experiments consists not just of the data provided by the experts; the experts themselves, and even the process of selecting them, are part of the input. The question that the committee faced is whether the existence of a code could be verified scientifically by currently available methods. In this case, the methods included the exercise of judgment by the experts in deciding on the data to submit; the exercise of judgment in selecting the experts; and the exercise of judgment in selecting those who selected the experts (Professors Furstenberg and Lubotzky). All this was part of the experimental design. Perforce, the design took into account that some of the experts might make mistakes; this may be considered an inherent random element, like other random elements in the design (e.g., selection of a key for the random number generator, or indeed selection of random numbers once a key has been selected). Frankly, I don’t see how the design could have been improved *a priori*.
6. As an observer—not a researcher! —I have been involved with the Codes research for close to twenty years, and have invested in it a tremendous amount of time and energy. Though the basic thesis of the research seems wildly improbable, for many years I thought that an ironclad case had been made for the codes; I did not see how “cheating” could have been possible. Then came the work of the “opponents” (see, for example, McKay, Bar-Natan, Bar-Hillel and Kalai, *Statistical Science* 14 (1999), 149-173). Though this work did not convince me that the data had been manipulated, it did convince me that it *could* have been; that manipulation was technically possible. The

arguments that ensued—including, on both sides, implicit or explicit accusations of manipulation—eventually became extremely complex, and I was unable to follow them sufficiently well to decide for myself who is right. Having become convinced that the only way to settle the matter to my satisfaction is to conduct an experiment designed and analyzed under my own supervision, I welcomed the suggestion of Eliyahu Rips to chair the committee referred to in Paragraph 1 above. Though fairly sure that the committee’s work would convince almost no one who did not hold the corresponding opinion beforehand, I still thought it worthwhile to conduct the experiment just for the purpose of deciding the issue for myself. And, I decided that that would be the end of my own involvement in the Codes research.

7. During the years of the committee’s work, I became convinced that the data is too complex and ambiguous, and its analysis involves too many judgment calls, to allow reaching meaningful scientific conclusions.

8. The matter of manipulation played a central role in the evaluation of the research, and also in the research itself: the committee’s experiment was designed to avoid, at all costs, the remotest possibility of manipulation. I myself have gotten to know the people on both sides fairly well, and find the accusations of manipulation hard to believe; everyone involved seems sincere, and also to understand the issue of manipulation—which makes unintentional manipulation unlikely. Nevertheless, the basic thesis of the research is *a priori* even harder to believe than the possibility of manipulation. Moreover, matters of personal trust cannot be considered a legitimate part of a scientific analysis; results must be repeatable and objective, and their validation cannot depend on the analyst’s personal assessment of the researchers’ honesty.

9. An interesting feature of this research is that, as noted in Paragraph 6, almost everybody involved made up his mind early in the game—sometimes before seeing any evidence at all—and then was unwilling to consider changing it. The research has a high ideological content, and many people are unwilling to abandon ideologies, no matter what the evidence is. When I first presented the results of Witztum, Rips, and Rosenberg at the Center for the Study of Rationality at the Hebrew University, Professor Maya Bar-Hillel told me after the presentation, Bob, I won’t believe this no matter *what* evidence you bring me. She now says—and no doubt believes—that this was not really meant literally; but I believe that it was, and indeed that it remains true today. Many others hold similar views.

10. Some readers may disagree with the view set forth in Paragraph 5 above, and hold that a factual error disqualifies the research. But even under this view, the committee’s results certainly do not *support* the Codes. At best, they return us to where we were before the committee started its work—with a low *a priori* estimate of the probability that the Codes are real.

11. We come finally to the bottom line: *A priori*, the thesis of the Codes research seems wildly improbable. Though the original work of Witztum, Rips, and Rosenberg, and that of Gans, established a *prima facie* case for the existence of the codes, this case was undermined by the work of the “opponents” (see Point 6 above). Research conducted under my own supervision failed to confirm the existence of the codes—though it also did not establish their non-existence. So I must return to my *a priori* estimate, that the Codes phenomenon is improbable.

ANOTHER PERSONAL PERSPECTIVE ON THE WORK OF THE "GANS" COMMITTEE

Hillel Furstenberg

As the member of the Gans committee entrusted with implementing the experiments designed by the committee, I will record some comments on the procedures followed, in the hope that this may help evaluate the outcome of the experiments. It will be useful to begin with some general observations.

The "Codes hypothesis" which was being tested claims the existence of encoded references to historical "events" - or "facts" - in the text of the book of Genesis, including events taking place after the writing of the Bible was completed. One must bear in mind the fundamentally non-scientific character of this hypothesis. This is not on account of the outrageous nature of the claim, but rather because of its incompleteness which doesn't allow for falsification. No one is privy to the type of events that a divine Encoder would choose to include. This must be guessed at, and the non-appearance of a particular event or fact does not falsify the claim. Nor can one be certain that the data will be presented in precisely the form we expect. The hypothesis does prescribe the manner in which events are purportedly recorded; namely, by statistically testable proximity within the text of key words or phrases related to the event. In the case of the Gans experiment and its replication, the words in question are the names of leading Jewish personalities and the designations of localities of significance in their lives (usually birthplace or place of death). Guesswork enters however on account of ambiguities in the presentation of this data; the rules for presentation will tend to be ad hoc and are not part of the larger hypothesis. It must be conceded that the design of experiments by our committee did not succeed in eliminating this guesswork.

The original experiments by Rips, Rosenberg and Witztum and by Gans were flawed as a result of the looseness in the presentation of data which theoretically allowed for manipulation of the data that would lead to ostensible confirmation of the hypothesis. In attempting to replicate the Gans experiment, the committee sought to avoid the pitfalls of the earlier version, hopefully both with regard to the credibility of a confirmation and with regard to the decisiveness of non-confirmation. Here the first goal was relatively easy to achieve; the second much harder. The first goal was achieved to some extent in both versions of the experiment, by calling upon "independent" experts to make the decisions that determined the data to be checked by the computer search of the text. The security component was more decisive in the Replicative version in which, following a suggestion of I. Rips, a multi-stage process was invoked, involving independent experts between whom no collusion was possible, and by carrying out the various stages of the process under a high degree of confidentiality.

The significance of non-confirmation of the hypothesis by the experiment is predicated on the assumption that the data being fed the computer is "correct". Clearly there is no absolute way of ascertaining this, and the "human" component is unavoidable. The data regarding the names of the personalities was left unchallenged, and a battery of experts was called upon in determining the list of localities to be checked against the names. In the original conception of the replicative test the experts

were to be called upon to (i) identify the localities associated with each individual, (ii) determine the appellation of the locality at the time in question (e.g., Leningrad vs St. Petersburg), (iii) determine the correct spelling of the appellation in question. These represented the three stages of the compilation process.

In the course of implementing stage (ii) it was found that typically knowledge of the time span in question would enable the expert consulted to guess who the historical figure was, thus compromising the desired independence of the information provided by the various experts. To overcome this the second expert was asked to report on the appellation/s of the particular locality as they appeared in Jewish documents during the various periods of Jewish occupation.

In the original conception as discussed by our committee, the third stage was to deal with orthography from a purely grammatical standpoint, and there was some ambivalence as to the role of an expert in this regard. The committee accepted the algorithm proposed by I. Rips (appearing in Appendix 3B(iii) of the formal committee report, DP 364 of the Rationality Center), which provides the rules of spelling for words with known pronunciation. It developed, however, that the pronunciation of names in most cases - as attested to by the experts consulted - could only be known from the spellings. The procedure that appeared as a result most in line with the spirit of the deliberations by the committee on this matter was to consult a third set of experts on the spellings that appear in documents relating to the localities. Thus three further experts were called upon, each widely read on Jewish history in a particular geographical region, and they reported on the dominant spellings used for the cities in question. Finally, when applicable, the spellings were modified in accordance with the Rips algorithm.

Another deviation from the committee directive was instructing all but the first expert orally rather than in writing. This was found necessary as a result of the subtlety of the instructions and the need for clarity as well as the nature of our request which made an informal presentation preferable to a formal one in writing.

The challenge remains to the proponents of the Codes hypothesis to design an experiment that can be decisive in both directions. It is questionable whether the human element can be removed in a manner satisfactory to all sides. The present experiment is, in my opinion, close to optimal, and may represent the best that "scientific" analysis can achieve, but it cannot be said that the issue has been totally resolved.

OPINION OF A COMMITTEE MEMBER

Isaak Lapidés

At present, I cannot sign the final protocol of the Committee, and let me explain the reasons.

Background. After several years of tense discussions, the Committee consisting of 5 scientists, mostly mathematicians, worked out instructions for two lists of data for two experiments. One of them is designated R and the other is designated F. Both experiments are aimed at performing another test in the spirit of the Gans experiment, where R more closely follows the principles used in Gans' investigation, while F is more "loose" in its design.

Each of the sets of data was prepared by an expert/experts appointed by the representatives of the Committee. The computations on the basis of the data provided by the experts show lack of significance.

At the last meeting of the Committee (reduced to 3 members after Professor Bar-Natan and Professor Rips resigned from the Committee), Professor Aumann and Professor Furstenberg inserted the results of the computations into the final protocol of the Committee, prepared in advance, and signed it. I, being the third member of the Committee, refused to sign it. In the sequel, I specify the reasons for my refusal to sign the protocol of the Committee.

Technical reasons. A thorough check has shown that the work of the experts and of the representatives of the Committee was plagued with extreme carelessness, resulting in dozens of errors and in many essential violations of the instructions of the Committee. The experiments based on those data therefore lacked any scientific meaning (see [1] and [2]).

List R.

(1) Expert (I) of list R was requested to identify the places of birth and death of the 66 personalities of the sample. The instructions in writing stated:

"We are asking you to write only the places that, according to your opinion, are known in a reliable way; you have to indicate the sources of the information and to specify the rules according to which you have acted and how you have applied these rules in every particular instance."

The aim of these requests is to secure the transparency of the work of the experts and its quality.

Let us check whether expert (I) had fulfilled these requests. Now, expert (I) has provided a list of criteria for his work. Do these criteria satisfy the above requests? Carefully looking at the criteria provided by expert (I) definitely leads to a negative answer.

The 1st paragraph of the criteria says:

"Where I have written 'All the sources' my intention is to say that this is the conclusion of different sources that seem to be independent and, in addition, were convincing to me"

This is not a rule and not a criterion, but merely a way to designate a subjective decision, which is misleading in its form and certainly is not a substitute for a specific reference to a source. (Expert (I) used the designation "all the sources" 25 times and 4 times he gave no reference to a source at all.)

Paragraph 4 deals with the cases of doubt, and here is what it says:

"In different cases we were unable to make a decision or to establish the facts, so then I wrote question marks and added the word "probably"."

Expert (I) did not formulate any clear criterion when a case will be defined as a doubt. He contends himself with amorphous saying void of any actual meaning and which contains no operative rule how to distinguish between different situations (different reasons leading to a state of doubt) and what are the orderly ways of resolving the doubts. In the absence of a definite rule, expert (I) in many cases called the data doubtful in a subjective way and without any meaningful control. (And his decisions about what should be termed as doubtful show a considerable lack of consistency.)

In the remaining paragraphs 2, 3 and 5 expert (I) only indicates what are the kinds of sources preferable in his view ("studies and books in which the main goal is the as meticulous as possible record of the places of birth and death," personal evidence and "books and researches devoted to single person"), but he gives no rules of preference amongst these sources. Moreover, in many cases expert (I) acted totally against these paragraphs (see [1], pp.12,13). In addition, there are 4 cases that correspond to paragraph 3 (personal evidence), and only in one of them (with respect to the place of birth of R' Yaakov Emden) does the personal evidence support the data provided by the expert.

And to be sure, in the absence of definite guiding rules, expert (I) never indicates how he applies them in every individual case.

Given all the above, it is possible to state that expert I did not fulfill the requests of the instruction letter. Nevertheless, the representative of the Committee agreed to accept the work of the expert.

In addition, the work of first expert (I) is done with extreme sloppiness. In [1], pp.6-10, 14(!) cases are listed in which the content of the source expert I is referring to, simply does not match at all the data as given by the expert (or it even contradicts it). In one instance there was an error in the identification of the person (HaRaShash). (In 6 cases the expert conceded that he was in error. For the rest see [3].)

(2) According to the written instructions of the Committee, expert (II) had to provide the "names of the communities for the places appearing in the list" (no more than 3 names for each place). He also was requested "to specify the rules according to

which you have acted and how they were applied in every particular instance, and to indicate the sources of the information."

Here the actions of the representative of the Committee were in clear violation of the protocol. Instead of giving to expert (II) the written instructions of the Committee, he chose to instruct expert (II) orally, "in the spirit" of the written instructions, as he indeed indicated in handwriting on the text of the instructions. He also chose to deviate from the written instructions and not to require from the expert that the name of the community should be connected with a definite epoch.

Since expert (II) was given the instructions orally, it is impossible to determine now whether other (maybe inadvertent) deviations from the written instructions were made. And if they were made, how many. In any event, judging from the work of expert (II), it turns out that:

(a) He did not know that he has to give the names of communities, but rather the names of the localities (so, for example, he gives the name "Moravia," which is the name of a country and not the name of a community).

(b) He did not know that he has to give not more than 3 names (in 18 cases he gives more than 3 names).

(c) He did not know that he has to specify rules for his work and to indicate how to apply them in every particular instance, as required in the written instructions (and therefore he did not do this).

(d) He did not know that he has to give references to the sources of his information (and therefore he did not do this).

(See [1], p.18.)

(3) The next step of the actions of the representatives of the Committee has no basis whatsoever in the protocol of the Committee. Namely, they appointed a group of experts (III). The representatives of the Committee did not provide any explanation why they decided to appoint group III thus deviating from the protocol of the Committee. In this case also the instructions were given orally, without any precise documentation in writing. Furthermore, the representatives of the Committee do not remember at present what they precisely asked from group III! The representatives of the Committee are "inclined to think" that they asked from group III to choose one of names appearing in the list of expert II for each of the places (indeed, group III almost always gave only one name).

If this was indeed the request from group III, this is a clear violation of the protocol, which gives the following instruction:

"If there are several names, choose the most significant one. If the names are equal in their importance, take all of them, but not more than 3 for one place (in the indicated epoch)."

Besides, in 12 cases the data given by group III is not contained in the list of expert (II).

Group III supplied their data orally, and the only documentation of their data is in handwriting on the report of expert (I). Comparison between this data and the final list (taking into account the spelling rules) shows that in 12 cases the corresponding names

in the two lists do not fit one to another (see [1], pp.19-20).

(4) Faults in the process of the spelling of the names. The Committee adopted a procedure of how to get the spelling (in Hebrew) of each name. This procedure requires the knowledge of the correct pronunciation of each name. This information was to be supplied by the last expert by punctuation of the name ("nikud" in Hebrew). Instead, the representatives of the Committee decided the pronunciation themselves. As a result, in 18 cases this decision seems to be mistaken or lacking ([1], p.22). In addition, in 12 cases there were mistakes in applying the procedure. In addition, one of the personalities was by mistake omitted from the list. In addition, in 3 cases by mistake the place of the burial and not the place of the death was indicated. In addition, there were 3 typos ([1], p.22).

Conclusion: The accumulation of all the mistakes and faults described above makes the experiment R performed with this data devoid of any scientific meaning whatsoever.

List F.

(1) The expert for F was asked to prepare two lists, one of "localities" and the other of "Jewish communities." In fact, he only prepared the list of localities.

(2) The expert was asked to prepare "a short list of reference forms" (prefixes) for each of the two lists. He did not do this.

(3) The expert did not provide any references for his information. He did not supply "a short explanation (in one or two lines) to each locality" as he was explicitly requested in writing.

It turns out [2] that there was a lacuna (oversight) in the protocol of the Committee. Namely, it does not specify what to do with the data supplied by the expert.

I stated the basic reasons why I do not agree with the results of the experiments performed by the Committee. I concluded that the starting data cannot lead to a well-founded conclusion regarding the Gans paper.

In conclusion, I believe that the Committee must start afresh or complete its work without any resolution.

References

[1] D.Witztum, Comments on List R (in Hebrew), submitted to the Committee.

[2] D.Witztum, Comments on List F (in Hebrew), submitted to the Committee.

[3] D.Witztum, Comments to the reply of the expert (I) (in Hebrew), submitted to the Committee.

Professor Isaak Lapides
27-08-2003
Jerusalem

**A CRITIQUE OF THE REPORT SUBMITTED BY THE COMMITTEE
ESTABLISHED TO EXAMINE GANS' EXPERIMENT¹**

Doron Witztum

Summary

- a. An experiment performed by Harold Gans [G]² to examine ELS rabbi/community matches in Genesis, concluded with statistical results that were highly significant. Data collection for the experiment was accomplished through a mechanical procedure by means of a precise algorithm.
- b. Following criticism of the algorithm and its implementation, a committee headed by Professor Yisrael Aumann was established. (The committee included a representative of the experiment's proponents, Professor Eliyahu Rips and a representative of its opponents, Professor Dror Bar-Natan). The objective of the committee was "to look into the results reported by Gans in [G]." The committee began examining the algorithm and how it was implemented, but after several meetings the original goal was abandoned and the committee moved onto something different: To plan and perform a new experiment that would examine the ELS matches of rabbi/community names in Genesis using new data.
- c. Because of disagreement over this new experiment's protocol, it was decided to conduct two separate experiments: Experiment [F] that would be loosely connected to [G], and experiment [R] that would replicate [G]. Data collection for the new experiments was entrusted to experts appointed by committee member Professor Hillel Furstenberg. Each expert would work in accordance with written instructions prepared in advance by each experiment's proponents.
- d. When we finally received the lists of data collected by the experts for [F] and [R], it was immediately obvious to us that they included errors. (For example, on the first page of data for [R] the word Venice was misspelled ("וינוציא" instead of "ויניציא") and on the first page of data for [F] the name of the one Spanish town "טולידו" was confused with the name of another Spanish town "טודילא"!) We immediately drew the attention of the committee to the fact that there were trivial errors in the data, and made it clear that we would not take part in any experiment or calculation until the collected data was first verified as being appropriate for a scientific experiment. As we will explain below, an exhaustive examination made at that time found not only trivial errors, but discovered that the experiments were fatally flawed because of deviations from the protocol and because of errors and carelessness in preparation of the data.
- e. When we informed the committee chairman of our decision, he insisted on

¹ Appendices for this article can be found at <http://ratio.huji.ac.il/dp/dp365A.pdf>

² Concerning the experiment see:

Gans, H, J. (1995). Coincidence of Equidistant Letter Sequence Pairs in the Book of Genesis. Preprint.

In 1997, due to critical feedback Gans decided to thoroughly examine his data and he announced the results of the subsequent two year investigation in a detailed paper:

Gans, H, J. (2000). A Primer on the Torah Codes Controversy for Laymen. Preprint. Pp.16-18.

Also see details in the book "Tzofen Bereshit" ("The Genesis Code") by D. Witztum (5764) in chapter 17 and in appendix 13.

proceeding with the experiments regardless. Even though he agreed that the data included serious flaws, he argued that he nevertheless felt obliged to complete the project as specified in the protocol that had been prepared in advance. When we retorted that an experiment based on such severely flawed data would be worthless, he admitted that it might indeed be necessary to start again from scratch. However, he insisted that he would publicize a committee report on the experiments even if we refused to participate, relying on Professor Bar-Natan's calculations. The chairman recommended that we agree to conduct the experiment and hand him our calculations, and said that if we did so we would be given an opportunity to explain the experiments' flaws.

Only by agreeing to his suggestion were we enabled to apprise the public (in the committee report) of the simple fact that the experiments lacked scientific validity.

Besides our firm position that it was inappropriate to conduct a flawed experiment and publicize it as scientifically valid, we are puzzled at the using of "conforming to protocol" as a chief rationale to continue with the experiment and publicize its results. In fact, the protocol was not conformed to in the course of the experiment and there were actually significant deviations from it, as we will explain below.

In conclusion

- The results of the committee's experiments reflect nothing but the failure of their data preparation. In particular, these results provide no implication concerning the existence or non-existence of the ELS phenomenon.
- As we have always stressed, according to our thesis only experiments based on accurate data have a good chance of succeeding, while those based on erroneous data are likely to fail.

In the rest of this paper, we will expand on the above mentioned points and in section E we will discuss whether any scientific benefit accrued from the committee's work despite its flaws.

A. The Gans Experiment

The Gans experiment [G] had two components:

1. **The thesis.** The thesis includes an exact definition of the investigation's subject. The experiment was precisely the same as the [WRR] experiment except for one thing. A list of communities of birth and death for each personality was substituted for the list of dates of birth and death used in [WRR]. The personalities, appellations, formulae, and p-level calculations were identical to that of [WRR]. For the communities, the experiment used the Jewish names (wherever possible), and used the main variants of these names. The spelling of the community names followed fixed rules.
2. **Data collection.** The data used was established by the Inbel Algorithm using the following database: Encyclopedia of Great Men in Israel (*EGMI*, edited by Dr. M. Margalioth), Encyclopedia Hebraica (*EH*), and the New Concordance of the Bible.

Let us detail the similarity of the components of [G] and [WRR].

1. Concerning the thesis:
 - a. In [WRR] the subject investigated was the Rabbis' birth/death dates and not any other dates connected to them. Similarly, in [G] the subject investigated was the Rabbis' birth/death locations and not any other places connected to them.
 - b. [WRR] utilized only Jewish dates and not gentile dates. Similarly, [G] used the Jewish names of communities. (For more details, see appendix of this report, in appendix e of the document: "Remarks concerning the flaws of experiment [F]").

- c. [WRR] used only major name variants (this point is explained in “Tzofen Bereshit” chapter 7). [G] used the same policy concerning community names.
- d. [WRR]’s spelling was established according to fixed rules. The rules used by [G] were exactly the same rules used and documented in [WRR].

2. Concerning data collecting:

Both [WRR]’s Rabbis lists were based on *EGMI*. The data of the names and appellations were taken from *EGMI* by the expert, Professor Shlomo Zalman Havlin unless expert opinion differed. Thus *EGMI* was the default choice. *EGMI* was also the default choice also for the date data. Each date was taken from it unless it was found erroneous (or missing).

[G]’s choice of places followed a similar procedure. *EGMI* was the default choice used whenever expert opinion did not contradict *EGMI*. However, in [G]’s experiment Tzvi Inbal did not use experts to guide him in his task. Instead, *EH* was used as a substitute for expert guidance (*EH* is considered the most important and most historically and grammatically accurate encyclopedia in Hebrew).

The Inbal Algorithm

The algorithm of [G] was a mechanical procedure that entailed three separate stages:

- The first stage established the *place* of birth or death.
- The second stage established the *Jewish name/s* of the place.
- The third stage established the *Hebrew transliteration* of the name/s of the place.

The algorithm is a mechanical procedure governed by a reasonable number of *relevant, logical*³ rules. We are convinced that a procedure such as this cannot be “cooked” to give similarly successful results in texts like, for example, “War and Peace.”

Even though it would have been a relatively simple matter to examine and implement this algorithm, the committee ultimately failed to do this, as we will explain.

B. The Committee Changes Course

The Committee’s original goal was to examine [G] and it started doing this by examining component 2 (see section A above), that is the validity of the Inbal algorithm and the correctness of its implementation. However, after several meetings were held where these subjects were discussed, the committee abandoned its original purpose.

The committee members who had prompted the change suggested doing something else: To design and perform a new experiment that would examine ELS matches of the Famous Rabbis’ names in Genesis with a new data set of locations – something “similar” to Gans’ experiment.

In our opinion this was a mistake.

First of all, the fact that the committee members were inexperienced in the fields of history and linguistics meant that this new data set, and therefore the experiment based on it, were likely to be flawed, and this is indeed what happened. The problems involved in examining [G]’s data as was originally planned, would have been far

³ A full description of the algorithm can be found in appendix 13 of the book “Tzofen Bereshit” (“The Genesis Code”)

simpler to handle than designing, performing and controlling a new experiment from scratch in a field that was strange to the committee members.

Secondly, this new experiment would be no indicator of the validity of Gans' experiment. This was indeed admitted in the committee's report. Therefore this change of direction was not an alternative way of reaching the committee's goal – it couldn't reach it at all!

C. The Two Suggested Experiments

There was disagreement between [G]'s proponents and opponents concerning the new experiment's protocol, so it was decided to conduct two separate experiments.

Experiment [F], suggested by Professor Bar-Natan was only loosely connected to [G]. In fact, it was more similar to the flawed experiment conducted by Professor Simon (that yielded negative results).

For example, while [WRR] took into account the fact, that the words used for ELSs should (as far as possible) utilize spelling similar to that found in the Torah – because [WRR]'s whole claim is that these words are coded in the Torah – [F] had no spelling rules at all. We never claimed, for example, that the name Vienna spelled with two *vavs* – "ווײנא" - (against the rules of Torah spelling) is encoded in the Torah!

Experiment [R] suggested by Professor Rips was meant to be a replication of [G]. Therefore, the preparation of data for [R] was conducted in three stages similar to [G] (see below section D), except that in [R] the data collection was done by a “live” expert and not based directly on encyclopedias.

But in actual fact, as we'll see below, dozens of mistakes and deviations from the protocol produced a significantly flawed data list for the experiment. Therefore [R] was never actually implemented.

Significance of the Experiments

Gans' experiment had two components:

1. The thesis – which included the precise definition of the experiment's subject.
2. Data collection.

As we explained above, the committee originally decided to examine the technical component, 2. But instead of doing this it chose to conduct experiments of its own.

- One of these experiments, [F], was dissimilar to component 1 (the thesis) and therefore it had no relevance to [G].
- The second experiment, [R], was similar to component 1 (the thesis) and therefore it could be considered as a replication of [G]. The new aspect of [R] was component 2 (data collecting).

What did the committee plan to discover from experiment [R]?

It seems that the committee never made a precise statement to this effect, so we will need to figure it out ourselves.

[R] had three possible outcomes:

- a) If the data turned out to be very similar to [G] – it would indicate that there was no wiggle room in [G]'s data collecting.
- b) If a significant part of the data was different and the experiment still succeeded – it would indicate that even though there was wiggle room in [G]'s data collecting, this was not the reason for its success. (In other words, success was not dependent on specific variants or spellings of community names).

c) If a significant part of the data was different and the experiment failed – it would indicate that there was wiggle room in the data collection and that [G]’s success depended on specific data.

As we know, the outcome of [R] was c. However, as we will see, the data preparation was flawed, and this resulted in large numbers of errors and omissions in the data used for the experiment.

Because of this, the committee had no way of knowing whether the difference in data was because of wiggle room or because of these mistakes and omissions. Therefore, the committee never succeeded in clarifying whether wiggle room would exist if data were collected scientifically and rigorously!

D. Fatal Flaws.

The two suggested experiments were fatally flawed as a result of improper wording of the protocol as well as deviations from the protocol and a multitude of errors of various kinds.

Experiment [R]

Experiment [R] was designed to replicate Gans’ rabbi/community experiment. As we mentioned, data was prepared for [G] in three stages:

- I. Identifying the rabbis’ birth and death places.
- II. Establishing the names of the communities that existed at the places identified in stage I from Hebrew sources.
- III. Establishing the Hebrew transliteration of the names established in stage II.

The preparation of the data list for the replication experiment [R] too, was originally intended to be in these three stages, each stage executed by an expert appointed by the committee. Instructions for three experts (one for each stage) were prepared in advance, and written appointments based on these instructions were supposed to be handed to them.

But in fact, many serious flaws were made in each one of the three stages. These flaws are detailed in the document in the appendix of the present paper titled “Comments on the flaws in the preparation of list R.”

Here are two examples of the mistakes made by Expert I, the person appointed to establish the birth/death places for this list.

a. In the above mentioned document, a series of remarkable errors found in the expert’s work was recorded. As explained there, we checked only a suspect subset of the data, and found 17 instances in which the expert’s data **did not exist** in the references given by him to support his decisions. Moreover, in 6 cases the information given in these references **contradicted** the data he claimed to derive from them! These errors are detailed in the referenced document.

One typical example: Concerning R. Avraham Saba (no. 38 on the list), the expert established his birthplace with certainty at the Spanish town of Samora. The reference he gave for this decision was “A. Gross, in the introduction to ‘Tzror Ha’mor’, Jerusalem 5745, pg. 20.” But in this reference it is written explicitly that “we don’t know for sure where and when he [R. A. Saba] was born”!

b. Expert I erred, and instead of supplying data for R. Shalom Shar’abi (no. 65 on the

list), he supplied data for another person, R. Shalom Shabazi. This happened in spite of the fact that he was given the full name of R. Shalom Shar'abi, and even the number of the relevant page in the encyclopedia!

[The committee representatives did not notice this mistake, and continued the process while adopting the data for the wrong person.]

Expert I was told some of our objections by the committee. In his "Reply to the Objections," the expert agreed to some of our objections and tried to justify himself regarding others.

In the document in the appendix of this paper titled "A critique of the 'Reply to the Objections' of expert I (list R)," we point out that the expert's admission that he seriously erred in many instances (including the obvious mistake of misidentifying one of the Famous Rabbis!) is tantamount to admission that his work was careless and unfit to be used by the committee. In addition, we prove in this document that in his very "Reply to the Objections," the expert committed new mistakes similar to the ones we had brought to the committee's attention.

The facts presented in the documents "Comments on the flaws in the preparation of list R" and "A critique of the 'Reply to the Objections' of expert I (list R)" indicate that the work of expert I was negligent. Therefore, any experiment based on this flawed data must, necessarily, be fatally flawed as well. The multiplicity of faults in the next two stages made things even worse.

Experiment [F]

Experiment [F] was intended to be a "fresh" experiment only loosely comparable to [G]. The data for this experiment, "list F" was originally intended to be collected by an expert appointed by the committee. Instructions prepared in advance were handed to the expert in a written appointment.

It turned out that mistakes caused serious flaws both in his fulfillment of the instructions and in the very possibility of performing the experiment. The main flaws resulted chiefly because of defects in the protocol and because explicit instructions in the written appointment were ignored both by the expert who prepared the data, and by the committee representative who accepted the expert's flawed list F and allowed it to be used for the experiment. In the document in the appendix of this paper titled "Comments on the flaws of experiment [F]" we detail the major flaws. In particular, we point out a serious lacuna in the protocol that makes the experiment practically impossible to implement.

In conclusion, it is our opinion that experiment [F] has fatal flaws that make it impossible to implement.

In section F below, we will discuss an informal suggestion that proposes how to complete the experiment on the basis of the expert's data and the transliteration rules the committee established in advance. We will demonstrate that by doing this the experiment indicates clear evidence of the ELS phenomenon.

E. Deviations from the protocol

In the course of preparing data for the experiments and after the data was given to the committee members who were opponents and proponents of [G] for the purposes of performing the necessary calculations, there were significant deviations from the protocol, as will be explained.

Deviations concerning [R]

In the document in the appendix of this paper titled “Comments about flaws in the preparation of list R,” we have detailed and recorded the faults made in each stage of the preparation of list R. Here we will mention those caused by committee members deviating from the protocol.

Deviations in the implementation of stage II

Expert II was supposed to implement stage II in preparation of the replication, the stage paralleling stage II of [G] (see section D above). Many faults occurred at this stage.

The expert did not follow his written instructions (which are recorded in the above document). It seems that the main reason this happened is that he never saw those instructions:

1. The committee representatives decided to appoint him verbally without handing him the written instructions.
2. In the course of their verbal instructions, the committee representatives deliberately deviated from what was explicit in the written appointment by failing to mention that any names used must be germane to particular historical periods. (See appendix D of the above document.)
3. It is not known how many more, unintentional changes resulted from instructing the expert verbally. In any case, it is clear from the expert’s work that:
 - a. He was unaware that he was supposed to list the names of communities and thought that he had to list the names of places. (For example, because of this mistake he included “Moravia” that is the name of a district and not of a community).
 - b. He was unaware that he was supposed to choose up to three variants of the relevant name and no more. (In 18 instances he provided more than three variants.)
 - c. He didn’t know that he was supposed to formulate rules and explain how they were applied (and therefore he failed to do so).
 - d. He was unaware that he was supposed to indicate supporting evidence for his choices (and therefore he did not).

The result:

- Because of 2, 3a and 3b, the list of data that he submitted was different in many cases that what was required.
- Because of 3c and 3d the work was not conducted in a disciplined fashion conducive to accuracy, nor was it conducted in a responsible manner that could be inspected and criticized as necessary.

The committee representatives received Expert II’s data list. Then, surprisingly, they decided, for some unspecified reason (and, to the best of our knowledge, without informing the other committee members) to appoint a completely new panel of experts whom they termed “team III”.

However, appointing Team III had no basis in the protocol. The committee representatives gave no reason why this was done and why they deviated from the protocol. Aside from being a deviation from the protocol, appointing team III involved the following serious mishaps:

1. The committee representatives gave no written instructions to team III and no longer remember exactly what they instructed its members to do. The committee representatives think that they instructed the team to choose **one** of the alternative transliterations in expert II’s data list for each of the localities. In support of this claim, they point out that team III chose only one transliteration in almost every instance.

a. If that was the instruction given to team III, it obviously deviated from the protocol that specified as follows:

“If there are several names, choose the principal one among them. If the names are equally important, use them all, so long as not more than three names are chosen for one locality (at the time of history involved).”

The purpose of this instruction was to include a variety of name variations if they were all among the most significant. But for some reason the committee representatives chose to give **contrary** instructions that cut out a lot of data.

b. An examination of Team III’s data revealed that **in 12 instances** they added data that is not found in Expert II’s list (Details are included in the above mentioned document). This finding is not compatible with choosing **one** of the alternative transliterations in Expert II’s data list for each of the localities (as the committee representatives think that they instructed them).

2. Team III supplied their data to the committee representative *verbally*, and the only record of this data is a hand-written memo of the committee representative on a page of Expert I’s report (a Photostat of this is included with the above mentioned document). According to the committee representative, “the final transliteration was established according to the appellations of Team III and according to the rules that appear in 3-6, 3-7.”

But a comparison between the community names in the final list, taking into consideration the transliteration rules 3-6 and 3-7 reveals that in **12 cases** there is no correlation between the notes of the committee representative on Expert I’s report and between what appears in the final list! (Details – *ibid.*)

Deviations in the implementation of stage III

According to the original protocol, stage III (transliteration) was supposed to be implemented by an expert. But because of changes to the protocol introduced by the committee on 8 November ‘01, this implementation was done by the committee representatives instead. It was supposed to be done on the basis of an algorithm ordered by the committee from Prof. E. Rips, whose final version was established by the committee on 26 November ‘01. The algorithm is in the appendix of the above mentioned document.

Knowledge of the correct pronunciation of the community names is a **precondition** to arriving at the correct transliteration by means of the algorithm. In order to establish the correct pronunciation, Rips wrote in his original suggestion that:

“In order to spell the names according to *grammatical orthography* [“ktiv dikduki”], one must know the correct pronunciation of the words. Therefore the expert who supplies the names in the last stage must be requested to supply information regarding the names’ correct pronunciation.

Suggestion: This can be achieved in simple fashion by the above mentioned expert inserting punctuation symbols in the letters without changing their spelling etc.”

However, this is not what happened. Decisions concerning pronunciation were decided by the committee representative and not by the expert.

Therefore many of these decisions are unconvincing and even erroneous. Although there were many cases where correct pronunciation is not obvious and requires expert opinion, we focused only on those cases where the decisions of the committee representative seem erroneous or deficient. The above document mentions **18 such examples**. Besides these examples, there were also **12 other mistakes** caused by

erroneous implementation of the algorithm (as is explained there).

[It appears that the committee representative also deviated from the protocol by including several *burial* places in the final list.

1. In no. 20 the burial place “Frankfurt” is included, even though it is not the place of death.
2. In no. 35 the burial place “Verona” is included instead of the place of death.
3. In no. 59 the burial place “Modena” is included instead of the place of death.]

Deviations concerning [F]

In this report’s appendix, in the document titled “Comments on the flaws of experiment [F],” we have detailed and recorded the mistakes committed in experiment [F]. Here we will only mention those caused by the committee representatives’ deviation from the protocol. In addition, experiment [F] had basic flaws in the protocol itself (whose Photostat can be found in the above document) as we will explain.

The expert’s letter of appointment required him to prepare *two sets* of data.

Data set I had two sections:

- In the first section the expert was asked “to prepare for each of these Rabbis a list of **localities** which are, to your understanding, significant in the lives of the Rabbis etc.” (Emphasis ours.)
- In the second section, the expert was requested “to prepare a short list of adjectival phrases for locality names derived from names by adding a word or small number of letters etc.” (In other words, the expert was requested to *prefix* each locality name with the appropriate adjectival phrase/s referring to the name, like, for example, “the town of” Verona or “the city of” Rome.) “Please select only adjectival phrases that add 1-5 letters to the basic name of the locality and only such that were widely used in connection with the localities and persons concerned. In cases where some of the adjectival phrases are relevant only to some of the persons, please indicate so clearly.”

Data set II also had two sections:

- “We ask you to do all the work a second time, exchanging the word ‘localities’ with the words ‘Jewish communities.’ In most cases this will make no difference because most Jewish communities are named after the towns where they are found (or were found). In a small number of cases the name of the community is different than the name of the town. Please specify these cases explicitly.”
- “In addition, it is possible that the change will require changes of some adjectival phrases.”

However, only *a part* of all this was actually implemented by the expert:

1. The expert was asked to prepare two lists, one of “localities” and one of “Jewish communities,” but he only prepared a list of localities and not the second list.
2. The expert was asked to prepare “a short list of adjectival phrases” for each of the two above lists. “Adjectival phrases” were especially important when it came to calculating the lists’ results. But the expert did not prepare even one such list.

In addition:

3. The expert did not include any sources or any support of his conclusions. He also did not include a “short explanation (of one or two lines) for every locality” – as he was explicitly requested in the written appointment.

The committee representative deviated from the protocol by agreeing to accept this incomplete work from the expert. This deviation, together with the protocols' flaws – that we will discuss immediately – made it impossible to calculate the experiment's results.

Flaws in the protocol of [F]

It turns out that the protocol was incomplete:

1. The protocol (that was finalized before the expert started his work) states that the results for the expert's data list should be calculated. The protocol makes no mention of the simple fact that that *two lists* of data were ordered from this expert!

2. In addition, the protocol included no instructions concerning what to do with the data. For example, what to do with adjectival phrases and how to calculate the results for each of the two lists taking the adjectival phrases into account.

In other words, the protocol had *a serious lacuna* regarding the experiment's implementation.

In fact, a few days after the data was presented to the two sides in order to calculate the results, the committee chairman noticed that the expert had not prepared a list of adjectival phrases and contacted the two sides and discussed which ones should be used. Our position was that once the data had been handed over to the two sides, it was too late to make any new decisions, otherwise the *a priori* nature of the experiment could be compromised. We do not know what the second side thought about this issue. The chairman finally instructed us to only use Proper names without any adjectival phrases.

Obviously, the committee chairman's *a posteriori* decision did not solve the problem that the protocol was defective in the first place. In our opinion, the correct procedure would have been to consider the whole range of possibilities.

This would be done as follows. It could be reasonably assumed that no more than a single result should be calculated for each data set of localities or communities. Lacking any other instruction, there are exactly four possibilities for the two sets of data:

I. Data set I: The "localities experiment:"

(1) A calculation in which each locality name is taken with its adjectival phrases (e.g., with its "prefixes").

(2) A calculation in which each locality name is taken with its adjectival and *also* without any adjectival phrases.

II. Data set II: The "communities experiment:"

(1) A calculation in which each community name is taken with its adjectival phrases (e.g., with its "prefixes").

(2) A calculation in which each community name is taken with its adjectival phrases and *also* without any adjectival phrases.

But none of these 4 possibilities could be implemented as we explained, because the expert only gave a data list of localities and not of communities, and even in his list of localities he included no data concerning adjectival phrases.

F. Deriving scientific benefit from the Committee's work

The committee invested a lot of time and effort in trying to execute its missions.

Alas, things were done in such a way that the committee's work led to no scientifically valid result.

Nevertheless, one may wonder whether it is possible to derive some scientific benefit using the data collected by the committee.

As explained above, the data collected for experiment [R] suffers too many mistakes and omissions; all it is good for is proving that *incorrect* data is not encoded in the Torah as ELSs.

On the other hand, as discussed above (in Section E), the data collected for experiment [F] mainly suffers other kinds of flaws, viz.:

1. The fact that only part of it was collected.
 2. The spelling used was not in accordance with the spelling of the Torah.
- If these two flaws could be overcome, the mended data might be used for an experiment.

1. Completing the data:

As was explained in Section E, it is impossible to conduct any one of the four experiments listed there using the data collected for [F]. The “localities experiment” cannot be conducted because the expert supplied no adjectival phrases. The “communities experiment” lacks not only adjectival phrases but also those community names that differ from the locality names.

It turns out that data for the “communities experiment” can be completed the easiest, especially if one concentrates on the most important data and restricts oneself to making minimal changes:

a. Considering the missing community names, the expert's appointment instructions stated that: “In most cases there will be no difference [from the locality names – D.W.], because most Jewish communities are named after their towns. In a few cases the name of the community will be different.” This is largely because the locality names chosen by the expert were already “those use/d by Jewish sources.” Therefore, in this case, the expected list of community names would be very similar to the list of locality names. The only exceptions might be a few cases where Jews gave a Jewish community a special Jewish (Hebrew) name that was different from the locality name.

Concerning the localities on the expert's list, we identified three⁴ cases of the required kind. The first such incidence we found was the name "אה"ו" ("AHW"). The community of AHW was a united community for the three neighboring localities: Altona, Hamburg and Wandsbeck. The name "אה"ו" ("AHW") was simply created from initials of these three names!

The second instance we found was "רמון ספרד" (“Rimon Sefarad”=“The Grenade of Spain” in Hebrew), a Jewish name of the Granada community. The third instance was "לוזינה" (Luzina), a Jewish name for the community of Lucena based on the names of the Biblical town "לוז" (Luz).

b. Another reason that it is relatively easy to complete the “communities experiment” is that unlike the “localities experiment” where it is difficult to guess what adjectival phrases the expert would have chosen, the adjectival phrases appropriate for the “communities experiment” are quite obvious:

⁴ At first we identified only the case of AHW, but after we did the experiment and described it in appendix E of the document “Comments on the flaws of experiment F” (included in the appendix of this paper), two other cases were found. Repeating the experiment gave the same significance.

- "קהל" ("Kehal" = "the community of..." For example, Kehal Vilna).
- "קהלת" ("kehilat" = another form of "the community of..." For example, Kehillat Vilna).

The usage of these two adjectival phrases dominates in Jewish historical documents. (For further details see appendix E of the document "Comments on the flaws of experiment F", included in the appendix of this paper.) This, in fact, is why the adjectival phrases "Kehal" and "Kehillat" were chosen for replication experiment [R].

Adding the above data to the expert list for [F], it seems that we could perform the "communities experiment", e.g., options II(1) and/or II(2) mentioned in section E above. We now deal with the problem of spelling.

2. Spelling.

Let us first stress that it is not we who initiated and designed experiment [F], and we had no part in composing its instructions to the expert, which did not include spelling rules at all. In our opinion, the resulting list F contains many names with unsuitable spelling for searching ELSs encoded in the Torah. (For example, list F spells Vienna with two Vavs: "ווינא".) The issue of the appropriate spelling was already discussed above (in Section C), and our position has been publicized many times in the past. Therefore we consider all results based on the present spelling of list F invalid.

But in this instance too, it is possible to mend the existing list, in the following way. The committee adopted in advance a set of spelling rules, whose original purpose was to use it for list R. But these spelling rules can be also applied to the names of list F. Applying these spelling rules to list F results in a list with a greater number of correct spellings.

We mended list F according to 1 and 2 above. Then we ran the "communities experiment" on the resulting list F'. The results were as follows:

	r4	r2
(1) Calculation with adjectival phrases	0.000895	0.000602
(2) Calculation with and without adjectival phrases	0.0046	0.0061

Where:

r2 is the ranking of statistic P2 out of 1,000,000 permutations, divided by 1,000,000.

r4 is the ranking of statistic P4 out of 1,000,000 permutations, divided by 1,000,000.

This calculation included all 66 Famous Rabbis. [More details can be found in appendix F of the document mentioned above. (See here note no. 3)].