

The Transmission of the Talmud and the Computer Age

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THE BABYLONIAN TALMUD is a direct outgrowth of the ancient oral Torah of pharisaic and rabbinic Judaism. We will address the exploration of modern technology and the dissemination of the Talmud in the twenty-first century upon the background of the oral Torah, its ultimate reduction to writing, and the various stages of the transmission of the Talmud text.

The Sinaitic revelation culminated in a covenant whose conditions and bylaws engraved in stone were intended for deposit in this form.¹ In addition, explicit divine instructions call for the recording of specific covenantal obligations and encompassing documentation.² Joshua recorded an exemplar of the Mosaic Torah in public monumental form on stone.³ According to rabbinic tradition this text encompassed the entire Pentateuch, with translation into seventy languages.⁴ Throughout the biblical saga, important texts and information are recorded in writing. Jeremiah employed a professional scribe, Barukh ben Neriah, in order to record his prophecy.

After the Babylonian exile, Ezra used the written text of the Torah for renewed inquiry into the contents of the commandments and to expand their detailed elucidation.⁵ The inquiry, elucidation, and midrashic expansion were certainly performed orally, and eventually the oral, non-written character became a base norm of rabbinic lore. One cannot say with certainty when the formal ban against writing was laid down. In the post-biblical period, however, written composition by Jews in both Hebrew and Greek continued unabated, and we can assume that appropriate means for the reproduction and dissemination of these works existed. The Pentateuch was translated into Greek in about 250 B.C.E. *The Book of Ben Sira* and other works whose remains were to become “Apocrypha,” took form in writing.

At Qumran, book production was a well-developed pastime, if not an obsession. A plethora of genres were represented, including what we would today call *halakhah*. Even the proto-rabbinic work, *Megillat Taanit* (*Scroll of Fasting*), was composed during the Second Temple period and was transmitted in writing. Its very title containing the word “scroll,” thusly referred to in the Mishnah, testifies to its written form.⁶

However, in tannaitic sources we learn that the recording of post-biblical sacred literature in writing was prohibited. “Those who write ‘blessings’ (ברכות) are as those who burn the Torah.” R. Yishmael once went to inspect a person suspected of writing down ‘blessings.’ The person threw the copy in a basin of water when he heard him coming, to which R. Yishmael remarked, “The punishment for the latter act is greater than for the former.”⁷

1. On “deposit” as a form of publication, see S. Lieberman, *Hellenism in Jewish Palestine* (New York 1962), p. 86.

2. Exodus 17:14, Deuteronomy 6:9, 11:20, 32:22–26.

3. Joshua 8:32. See Deuteronomy 27:3. This method of publication is reminiscent of Hammurabi’s stele. The fine execution and large amount of text there should dispel the concern that only a small amount of text can be presented in this manner (see Nahmanides to Deut. *ibid.*; Kaufmann to Joshua *ibid.*).

4. Mishnah *Sotah* 7:5; *Tosefta Sotah* 8:6–7.

5. Nehemiah 8:7–8.

6. And acceptance as such in rabbinic literature. See Rashi *Shabbat* 13b s.v. *megillat*; *Eruvin* 62b, s.v. *kegon*; cf. V. Noam, *Megillat Taanit* (Jerusalem, 2003), p. 22.

7. *Tosefta Shabbat* 13:4. Did this refer to a sort of prototype prayerbook? “Blessings,” although they contain God’s name and many matters from the Torah, are not to be rescued from a burning house on the Sabbath (*ibid.*).

8. See E.E. Urbach, *The Sages* (Jerusalem, 1979), p. 410, who saw the mention of a translation of Job in the Rabban Gamliel the Elder account as indeterminate as to whether it was Aramaic or Greek. However, the word *targum* is a technical term for Aramaic: “[Bible texts] written in *targum* or any language are rescued (from a fire on Sabbath) but sealed from distribution” (*Tosefta* *ibid.*). The reference is to translation of any part of the Bible (see Friedman, “The Primacy of *Tosefta* in Mishnah-*Tosefta* Parallels—*Shabbat* 16:1 “כל כתבי הקדש” (Hebrew), *Tarbiz* 62 (1993), p. 318) and not just *Ketuvim* (as R. Weiss, *The Aramaic Targum of Job* (Tel Aviv, 1979), p. 4; cf. Rashi *Shabbat* 115a s.v. *itmar; teunim*).

9. In the home of Yoḥanan ha-Nazuf (“the rebuked”), S. Klein, “לחקר השמות והמנויים,” *Lesbonenu* 2 (1928), p. 338. Perhaps he was rebuked for holding a library.

10. Ostensibly due to the prohibition to write it down, cf. Lieberman, *Tosefta ki-Feshutah*, 3 (Jerusalem, 1955), p. 203, n. 6. Urbach (see n. 8 above) claimed that the objection was to translation itself of Job, even oral, or to Rabban Gamliel’s dissatisfaction with the particular translator’s method (p. 410). However, the context in the *Tosefta* relates it to a prohibition of all written Bible translation (see n. 9 above).

11. See Lieberman, *Ha-Yerushalmi ki-Feshuto* (Jerusalem, 1935), p. 194.

12. *Yerushalmi Shabbat* 16:1, 15c.

13. S. Naeh, “The Structure and Division of *Torat Kobanim*,” *Tarbiz* 66 (1997), see p. 504 and n. 93. On the Babylonian nature of the R. Shimon b’Rabbi account (“two thirds of a third”) in *Bavli Kiddushin* 33a, see Friedman, “Historical Aggadah in the Babylonian Talmud” (Hebrew), *Saul Lieberman Memorial Volume* (Jerusalem and New York, 1993), p. 143.

14. Friedman, “A Good Story Deserves Retelling—The Unfolding of the Akiva Legend,” *JSIJ* 3 (2004), p. 29, n. 95. <http://www.biu.ac.il/JS/JSIJ/3-2004/Friedman.pdf>.

15. See J.M. Baumgarten, *Studies in Qumran Law* (Leiden, 1977), pp. 18–21.

Written translations of the Bible were banned. When found they were confiscated and removed from circulation.

R. Yose said: R. Ḥalafta once went to visit Rabban Gamliel in Tiberias and found him sitting at the table of Yoḥanan ben ha-Nazif with a *targum* [Aramaic translation] of the book of Job in his hand, reading it. R. Ḥalafta said to him: “I remember that Rabban Gamliel the Elder, your paternal grandfather, was sitting on a step on the Temple Mount and they brought before him a *targum* of the book of Job, and he instructed the builder to seal it in the wall.” At that moment [hearing this], Rabban Gamliel (the grandson) sent [his attendant] and had it sealed off. R. Yose ben R. Yehuda said [concerning the builder]: he overturned a vat of cement upon it.

The prohibition of a written translation was softened in the interval between grandfather and grandson. The latter was relishing the opportunity of reading an Aramaic⁸ translation of the most difficult book in the Bible in relative privacy⁹ when he was called to order by a report that his grandfather prohibited its use.¹⁰

The above-quoted *Tosefta* (“Those who write ‘blessings’ are as those who burn the Torah”) forms the basis of the statement in *Bavli Temurah* in the name of Rabbi Yoḥanan: “Those who write *halakhot* are as those who burn the Torah.” R. Yehoshua ben Levi said, “*Aggadab*, whoever writes it down has no portion [in the world to come], whoever expounds it [from a written text]¹¹ is burnt, and whoever hears it [from him] receives no reward.” Nonetheless, the same R. Yehoshua ben

Levi said, “In all my days I never looked at a book of *aggadah* except once, and I found written there. . . .”¹²

The prayerbook, the *Targum*, and the *aggadah* were available in written form as the above indicates. Officially banned, their use may have been on the increase, a type of gradual acceptance. *Sifra*, the halakhic *midrash* to Leviticus, was reduced to writing (at least in Babylonia) early enough to influence the terminology used for its divisions and structure.¹³ Reading Mishnah by candle light was apparently one of the themes introduced in the later version of *Avot de-Rabbi Nathan*.¹⁴ Officially, however, the written form was never granted full acceptance, for the oral quality of the traditions and the abhorrence of granting them written form were deeply rooted in the history of pharisaic Judaism.¹⁵

The Qumran/pharisaic contrast must be understood on several levels. In Qumran the works are written down from the time of their original composition by anonymous authors, copied in scriptoria and deposited in official collections. Among the pharisees, composition as such rarely exists. The traditions emanate from live and complex interaction of a social class of sages and their disciples. They are produced and transmitted orally, as small discrete units of teachings and dialectical discourse.¹⁶ If they reach the stage of composition, it is only after a long process that somehow arrives at a structure and closure, converting them into a literary “work.” This reality of practice is matched by ideology. Canonization of scripture was equivalent to assigning the physical scroll, in its official parchment and ink makeup, a ritual status.¹⁷ The proto-masoretic text is fixed on a word-by-word, even letter-by-letter basis. There is a cutoff point for recognition of inspired books,¹⁸ and post-biblical written compositions are frowned upon.¹⁹ Rabbinic lore is thus set off from scripture by maintaining its original oral context as a matter of principle.

The Qumran community oriented itself to scripture in a more free and open fashion. There was no consecrated fixity of text; transmission and revision went hand in hand. Witness the many harmonistic and related textual innovations in the Isaiah scroll.²⁰ Even the complete intermingling of extra-biblical genres with the biblical text took place in Qumran, as in the Temple Scroll. These practices, and the ideology they represent, strengthen the native tendency to written composition and completely dovetail with publication, deposit, and dissemination of original works across the spectrum of legal and hermeneutic creativity.

The oral approach to post-biblical literary creativity is thus seen as a specific characteristic of Pharisaism, not necessarily shared by other, sectarian entities. In a significant sense, the pharisees maintain Ezra’s approach in which the acceptance of the Torah as closed literarily and binding religiously opens a new period of public oral expounding of the Torah, creating a corpus of content elicited from the divine word and absorbing its Sinaitic authority. The format of personal, oral transmission from generation to generation is inherent to its authority, and superceded any other derivation of *halakhab*, such as by vote.²¹

The pharisaic/rabbinic traditions were originally small units, which, even when their formulation was completely fixed, were not yet extended works, and their oral transmission was perfectly natural. However, even when rabbinic works became full-blown literary creations, with polished inner structure and fixed text, they were viewed in terms of the cultural category of oral works, *Torah she-be-al peh*. This fact reduces the question of the existence or absence of written copies to a mere technical issue, peripheral to the basic orientation to this literature within its own society. This is made clear by Lieberman’s seminal research on the publication of the Mishnah. Reduction to writing can be an issue of central importance only if the written form becomes a vehicle for the publication of that work (through deposit) and for

16. See the report brought to R. Eliezer of the debate in Yavneh, where decisions and argumentation are given by count (*Tosefta Yadaim* 2:16).

17. *Mishnah Yadaim* 4:5. See Friedman, “The Holy Scriptures Defile the Hands—the Transformation of a Biblical Concept in Rabbinic Theology,” *Minḥab le-Naḥum: Biblical and Other Studies Presented to Nabum Sarna in Honour of his 70th Birthday*, ed. M. Brettler and M. Fishbane (London, 1993), pp. 117–132.

18. *Seder Olam* 30 indicates the termination of prophecy at the time of Alexander the Great: “After then cup your ear to hear the words of the Sages.”

19. *Kobelet* 12:12; explained “Whoever brings more than the twenty-four books into his home brings confusion” (*Kobelet Rabbah*); “Whoever reads a book besides the twenty-four, it is as if he read from the external books” (*Pesikta Rabbati* 3).

20. See Friedman, “On the Origin of Textual Variants in the Babylonian Talmud” (Hebrew, English Summary), *Sidra* 7 (1991), pp. 74–76, n. 17, and the literature cited there.

21. “R. Eliezer said, ‘Pay no attention to your voting, for I have received a tradition from Rabban Yoḥanan ben Zakkai who received it from the Pairs, and the Pairs from the prophets, and the prophets from Moses, a *halakhab* given to Moses from Sinai’” (*Tosefta Yadaim* 2:18; cf. *Mishnah Yadaim* 4:3, *Mishnah Peah* 2:6, *Mishnah Eduyyot* 8:7 [concerning Elijah!]).

22. See S. Z. Havlin, "Literary Closure as the Base of Halakhic Periodization," *Researches in Talmudic Literature . . . in Honour of the Eightieth Birthday of Shaul Lieberman* (Jerusalem, 1983), pp. 181–182 (and Maimonides cited there).

23. Despite the fact that J. N. Epstein, *Introduction to the Mishnaic Text* (Jerusalem, 1948), pp. 700–706, and Lieberman, *Hellenism*, p. 84 and n. 10, took them quite seriously; see S. Schlesinger, "On the Writing Down of the Oral Torah in the Time of the Talmud," *Sinai* 117 [5756/1995], and Friedman, *Talmud Ha-Igud*, BM vii, *sugya* 19, to appear.

24. See Naeh, "Structure," p. 510.

25. *Iggeret Rav Sherira Gaon*, ed. B. M. Lewin (Haifa, 1921), p. 71.

26 For similar statements, see Epstein, *Prolegomena ad Litteras Amoraiticas* (Jerusalem, 1962), p. 140.

27. *Shitah Mekubbetzet*, ed. Ilan (Bnei Brak, 1975), p. 47.

28. Epstein, *Prolegomena*, p. 143.

29. See L. Moscovitz, *Talmudic Reasoning* (Tübingen, 2002), pp. 17–18 ("preponderance"); idem, "Designation is Significant," *AJS Review* 27 (2003), p. 236, n. 39 ("scholarly consensus;" see dissenting view noted there). Cf. M. Chernick, *Hermeneutical Studies in Talmudic and Midrashic Literature* (Lod, 1984), p. 63; Danzig, "Baraita," *Sinai* 85 (1987), pp. 220–221 and n. 26, p. 224, and passim. Linguistic studies now regularly distinguish among three linguistic groups: *tannaim*, *amoraim*, and anonymous stratum. Cf. Y. Breuer, "On the Hebrew Dialect of the Amoraim in the Babylonian Talmud," *Language Studies* 2–3 (1987), p. 129.

30. Friedman, "A Critical Study of Yevamot X with a Methodological Introduction" (Hebrew), *Texts and Studies: Analecta Judaica* I, ed. H. Z. Dimitrovsky (New York, 1977), pp. 283–321, and the literature cited there; idem, *Talmud Arukh: Bavli Bava Metzia VI: Critical Edition with Comprehensive Commentary*, Text Volume and Introduction (Jerusalem, 1996), pp. 7–23; D. Halivni, *Sources and Traditions* (Tel Aviv, New York, Jerusalem, 1968–2003), passim; <http://www.talmud-revadim.co.il/shut.php#>

its transmission. Even though the Mishnah was a polished literary work par excellence, the question of its existence in writing was not a central issue in that cultural milieu. Its publication and transmission were oral, and publication in an oral form was sufficient to establish the Mishnah as a cultural divide for the periodization of rabbinic lore. Its promulgation closed one era (tannaitic) and opened a new one (amoraic).²²

In general, talmudic rhetoric is permeated with the phraseology of its oral nature in describing all aspects of the intellectual pursuits of rabbinic society. The so-called talmudic proofs or indications of written recording of the Mishnah and other tannaitic works are unconvincing,²³ or, in light of the above, inconsequential.

This is the background of the "dual standard"²⁴ and the oral/written tension that has marked the talmudic culture for centuries, and indeed still leaves its mark today. Whenever and however the Talmud may have been written in manuscripts, the written form never received full and official recognition throughout the geonic period. It was tolerated begrudgingly. Spokesmen were careful to emphasize the overlapping of the written with the oral, giving the latter the upper hand. When Rav Sherira Gaon was asked how the Mishnah was written down, he answered: "Talmud and Mishnah were not written down, but were edited [orally]. Thus the scholars are careful to recite orally and not from written exemplars."²⁵ This language indicates that written copies indeed existed and were available in Rav Sherira's time, but the *gaon* is careful to put things in their proper cultural proportion. Oral recitation supercedes any use of written copies.²⁶

Consequently, it is difficult to pinpoint when the Talmud was reduced to writing chronologically, and, perhaps more significantly, what role writing played in the stages of its formulation and editing. R. Betzalel Ashkenazi (1520–1591/4) testifies to a reading of "all old manuscripts" in *Temurah* 14b stating that although official study was oral, "written texts were consulted in order to overcome forgetfulness."²⁷ This, however, is a post talmudic gloss.²⁸

Over the last three decades, an academic consensus²⁹ has formed viewing the Babylonian Talmud as composed of two basic elements: a core of tannaitic and amoraic statements, and a later, expansive, anonymous dialectical commentary woven around the earlier material, thus forming complex *sugyot*.³⁰ Was it possible for this vast editorial function to take place orally? Meir Ish Shalom's (nineteenth century) suggestion that this took place in written format may

be an attractive idea,³¹ but can only be entertained with extreme caution, and in the final analysis is inconclusive. Sasanian Zoroastrian legal works occasionally displaying *sugya*-like complexity composed at least as early as the sixth century are recognized as being committed to writing only as late as the ninth century.³²

The text of the Talmud was never fully fixed in the word-for-word, letter-for-letter manner that typifies the masoretic text of the Bible. It was always possible to introduce clarifications or alterations, albeit more minor in later periods but quite extensive in earlier times. E.S. Rosenthal felt that the extensive textual variants all derive from an oral stage, when the Talmud was already edited in terms of its content but its wording was still undetermined, its text “fluid.” He consequently extended the period of oral transmission and exclusion of any written text of the Bavli to the ninth century or beyond.³³

However, we have argued that talmudic editing must have included a complete formulation of the text, whether oral or written, and that a fixed text does not exclude later transmissional intervention. Certainly considered praiseworthy and desirable, improvement by the tradents contributed towards greater clarity, more exact technical terminology, and harmony of style and linguistic usage. This editorial style-editing of the fixed text, conceivably oral at initial stages, and later certainly on the basis of written exemplars, took place in various centers during the geonic period.³⁴ For certain parts of the Talmud the result is two distinct textual types, quite discernable in the textual witnesses surviving today.³⁵

Furthermore, Rosenthal’s claim of the exclusive oral transmission of the Babylonian Talmud into the ninth century is refuted by hard evidence: a manuscript of tractate *Hullin* written on a scroll!³⁶ The switchover from scroll to codex for the copying of Hebrew books is said to have taken place by the seventh century.³⁷ Maimonides identified a fragment of a Talmud manuscript as being “approximately 500 years old”³⁸ because it was written on a scroll,³⁹ indicating the beginning of the seventh century as the latest date for Talmud manuscripts on scrolls in Rambam’s opinion.

The early date of the *Hullin* scroll is corroborated by its extraordinary orthography, exhibiting many ancient forms previously considered uniquely Palestinian by scholars who assigned an inferior linguistic tradition to Babylonia. This scroll now demonstrates that in the early period the Babylonians had a linguistic tradition that incorporated some of the so-called Palestin-

31. See Friedman, “A Critical Study of Yevamot X with a Methodological Introduction,” p. 314, n. 112.

32. See recent work by Shai Secunda.

33. “[T]he Talmud was initially edited in respect of subject-matter and content only. Finalizing its linguistic dress continued over a long period, and at least until the ninth century the Talmud continued to be transmitted by way of loose oral recitation without being bound to a written text” (E.S. Rosenthal, “The History of the Text and Problems of Redaction in the Study of the Babylonian Talmud” (English summary), *Tarbiz* 57 (1987), p. 1).

34. Malachi Beit-Arié has dealt with creative intervention of medieval scribes copying non-talmudic texts. He writes: “My observations are based on the explicit testimonies of scribes themselves in their colophons concerning the extent of fidelity to the

exemplars from which they were copying and their critical approach to the reproduction and rendition of texts. These testimonies reflect a process in which copyists took increasing liberties to interfere critically with the transmission of the copied text— so much so that by the end of the Middle Ages, European scribes virtually regarded duplicating texts as critical editing” (M. Beit-Arié, *Unveiled Faces of Medieval Hebrew Books* (Jerusalem, 2003), p. 61). As for Talmud manuscripts, it would appear that scribes during the period of the *risbonim* by and large attempted to reproduce text exactly. The more creative transmission took place in the geonic period and at certain specific centers, as suggested above.

35. See Friedman, “Variants,” *Talmud Arukh*, pp. 25–55.

36. Friedman, “An Ancient Scroll Fragment (*Bavli Hullin* 101a–105a) and the Rediscovery of the Babylonian Branch of Tannaitic Hebrew,” *JQR* 86:1 (1995), pp. 9–50.

37. See Naeh, “Structure,” p. 510, n. 125, and references there.

38. *Mishneh Torah, Malveh ve-Loveh* 15:2; Y. Sussmann, “A Halakhic Inscription from the Beth-Shean Valley,” *Tarbiz* 43 (1973), p. 156, n. 457.

39. Havlin, “From Scroll to Codex,” *Alei Sefer* 16 (1990), pp. 151–152; Friedman, “Scroll,” p. 44; Naeh, “Structure,” pp. 512–515.

40. Friedman, "Scroll," pp. 44–45.

41. See Friedman, *Talmud Arukh*, pp. 82–83.

42. According to Yaakov Elman ("Acculturation to Elite Persian Norms and Modes of Thought in the Babylonian Jewish Community of Late Antiquity," *Netivot le-David, Jubilee Volume for David Weiss Halivni*, ed. idem [Jerusalem, 2004], pp. 21–42) it would take more than ten large scrolls with a total of 2,522 columns to produce the entire Talmud in this fashion, certainly not a feat likely to have been performed often in Babylonia. In any case, production as separate tractates always proceeded.

43. See Naeh, "Structure," p. 511, n. 133, and the literature cited there.

44. Although it has been demonstrated that textual witnesses of several parts of the Talmud exhibit clear division into families of dramatically diverging text types, this characterization may apply only to a minority of the tractates or parts of tractates, with the majority presenting a uniform surviving text (Friedman, "Variants," p. 101, n. 82; idem, "Variant Readings in the Babylonian Talmud—A Methodological Study Marking the Appearance of 13 Volumes of the Institute for the Complete Israeli Talmud's Edition," *Tarbiz* 68 (1998), p. 157).

45. See A. Grossman, "The Decline of Babylonia and the Rise of New Jewish Centers in Europe in the Eleventh Century" (Hebrew), *Proceedings of the Israel Academy of Arts and Sciences* 8, 9 (1999), pp. 159–185.

46. See Friedman, "Introduction," p. 290, n. 27.

47. A comprehensive study of these manuscripts is still a desideratum. A work devoted to their textual, paleographic, and codicological features has been planned by Shamma Friedman, Mordechai Glatzer and Peter Schäfer through a grant from the German-Israeli Foundation for Scientific Research and Development. A complete catalogue of Talmud manuscripts is under preparation by Yaakov Sussmann. Meanwhile, see Sussmann, "Talmud Fragments in the Cairo Genizah," *Teuda* 1 (1980), pp. 21–32; D. Rosenthal, *Mishnah Avodah Zarah: A Critical Edition with Introduction* (Jerusalem, 1980), pp. 96–106; Friedman, "Genizah Fragments and Fragmentary Talmud MSS of Bava Metziah—A Linguistic and Bibliographic Study" (Hebrew), *Alei Sefer* 9 (1981), pp. 5–55; idem, "A Talmud Fragment of the Geonic Type, with Marginal Text Notations" (Hebrew), *Tarbiz* 51 (1981), pp. 37–48; idem, *Talmud Arukh*, pp. 57–69, 77–88; and bibliography in H.L. Strack, G. Stemberger, *Introduction to the Talmud and Midrash* (Minneapolis, 1992), pp. 209–212. A series of facsimile editions was published by Makor in the seventies, and others.

48. With interesting exceptions. Cf. e.g. E.S. Rosenthal, *Yerushalmi Neziqin: Edited from the Escorial Manuscript with an Introduction; Introduction and Commentary by S. Lieberman* (Jerusalem, 1983), p. 1.

49. See Friedman, "Geonic."

50. Some exceptions to this rule were developed in the latter part of this period, essentially in Ashkenaz.

51. The common reference to Rashi's commentary as *quntres* is almost universally taken as *commentarius*. Actually it is from the Latin *quinternus*, indicating the gatherings of five sheets that eventually built the codex. See Beit-Arié, *Hebrew Codicology* (Jerusalem, 1981), pp. 44–45, n. 77, and Ben-Hayyim cited there.

ian characteristics.⁴⁰ The above, combined with other features, suggest that this extended fragment is a major candidate for being the oldest Talmud manuscript ever recovered.⁴¹ The scroll may have been part of the written Talmud texts⁴² prepared by the Babylonian geonic academies for dissemination in Spain and North Africa (and later perhaps other European destinations).⁴³ Interestingly, the wording of the text is surprisingly close to ours.⁴⁴

The dissemination of the Talmud outside of Babylonia throughout the Jewish world, and the decline of the geonic academies,⁴⁵ combined to garner greater acceptance for the written form of the Talmud and placed it on better footing. For an ensuing period of more than half a millennium the "book"⁴⁶ of the Talmud, in the form of manuscript codices, held sway in Jewish intellectual life.⁴⁷

These codices usually⁴⁸ contained the Talmud text only. The text remained a living and changing entity, in the sense that the margins provided space for textual notes (beyond what may have been possible on scrolls), which were often incorporated in the next copy.⁴⁹ Related literature, such as Rashi's commentary and *Tosafot*, so central to the printed Talmud as we know it, were essentially⁵⁰ available in separate codices only.⁵¹

The invention of movable-type printing dramatically brought its cultural revolution to the Talmud in two essential ways, creating a text more crystallized than ever before and developing interaction of the various elements of the talmudic "page."

Even though there was an independent branch of Talmud printing on the Iberian Peninsula,⁵² we will only examine the printing of the Talmud in Italy, considering that all subsequent efforts descend from the Venice edition published by Daniel Bomberg in the early sixteenth century.⁵³

The printed Talmud in Italy preceded Bomberg. Printers from the Soncino family, Joshua Solomon and Gershom, published individual tractates in the cities of Soncino and Pesaro. Although they did not complete the entire Talmud, the text of tractates that they produced, including those most commonly studied, was taken over by the Venice Bomberg edition. The scholar responsible for the arduous preparation of the first Soncino tractates was R. David b. Elazar Sal (Pizzighettone?). His copyediting of the text, accomplished with vast erudition and skill, is described by him in detail, listing where he departed from the manuscript(s) serving as base text. He also examined the Talmud text reflected in Rashi's commentary in comparison with the language in the Talmud, and, where there were divergences, he brought the two into agreement. His exactness in listing each word he emended suggests that only a small quantity of his sources were altered in this manner.⁵⁴

The printing of the Talmud essentially put an end to the period of manuscript copying⁵⁵ and of the consultation of a multiplicity of texts. The very ease and availability of the printed text naturally served to block access to the various text types previously available in manuscripts, which were profitably consulted during the period of the *rishonim*.⁵⁶ Frozen into a higher degree of standardization than ever before, the universal Talmud text is by and large not equal to the superior readings that were retrievable from the variegated pool of manuscripts. Were we to classify textual witnesses, we could establish three categories: the highly superior texts in the oldest fragments; the exceptionally good text found in a choice group of full manuscripts;⁵⁷ the standard, unexceptional level common in late manuscripts.⁵⁸ The quality of the printed text places it in this third group. It must then be said that mass-production enabled by printing was an exceptional advance quantitatively, but not qualitatively. Even the *aharonim* become locked in to the printed text, and abandon variant readings as a source for understanding the fine points of Talmud study.

The second achievement of Talmud printing, namely, the creation of the interactive page, was a quantum leap for the culture of Talmud study. Could Rashi's commentary and *Tosafot* ever have been aligned with the Gemara so easily before, using separate volumes, if you were fortunate enough to have access to them at the same time? The "two finger" system certainly must have gained its momentum through printing. The interface does not stop there. Since the third Venice edition of the Talmud (1546–1551), published by Marco Antonio Giustiniani, the passage on the page is integrated horizontally with other passages throughout the Talmud and vertically with the halakhic codes, through the learned references notes of R. Yehoshua Boaz, the *Masoret ha-Shas* and *Ein Mishpat*. The concept of *Masoret ha-Shas* was further developed and perfected in the late-nineteenth-

52. See H. Z. Dimitrovsky, *S'ridei Bavli: An Historical and Bibliographical Introduction* (New York, 1979).

53. Including "unknown" and unlisted prints, see Friedman, "Unrecorded and Misrecorded Early Printed Editions of the Talmud" (Hebrew), *Alei Sefer* 18 (1996), pp. 5–41.

54. Friedman, "David b. Elazar Sal and the Soncino Talmud Prints" (Hebrew), *Asufot* 7 (1993), pp. 9–28.

55. Except in Yemen, where copying and use of manuscripts continued for centuries.

56. See Y. S. Spiegel, *Chapters in the History of the Jewish Book: Scholars and their Annotations* (Ramat Gan, 1996), ch. iii.

57. Called by E.Y. Kutscher "archetypal texts," such as Cod. Hamburg 165 for the three *Bavot*.

58. Nahmanides penned a categorization of Talmud manuscripts in his time. This included: the [regular] books; corrected texts from Spain and from the academy of R. Hananel and his father R. Hushiel; old exemplars in Spain (*Milhamot to Bava Kamma* viii).

59. See R. Ziskind, *Rabbi Aryeh Loeb Yellin Author of "Yefeh Einayim"* (Jerusalem, 1973); Y.S. Weinfeld, *Introduction to the Vilna Shas* (Jerusalem, 1994), pp. 426–427 (and see this work in general for a handy bibliographical review until a full study is undertaken on the Vilna Shas).

60. See Lieberman, *Hellenism*, pp. 88–89.

61. See Friedman, "Rashi's Talmudic Commentaries: Revisions and Recessions" (Hebrew, English summary), *Rashi Studies*, ed. Z. A. Steinfeld (Ramat Gan, 1992), pp. 147–175; idem, "Maimonides' Autograph Draft of the Mishneh Torah," *Maimonides and the Cairo Genizah* (Israel Academy of Sciences, Jerusalem, 2006).

62. See <http://www.artscroll.com/Talmud1.htm> and Friedman, "Studies in Talmudic Interpretation, a Review Essay on the Occasion of the Publication of a Hebrew Edition of the ArtScroll Talmud" (Hebrew), *Badad 7*, Bar-Ilan University, (1998), pp. 77–91.

63. See Friedman, ed., *Five Sugyot From the Babylonian Talmud: The Society for the Interpretation of the Talmud* (Jerusalem, 2002), English introduction; idem, "The Talmud Today," to appear in the *Jewish Book Annual*; <http://atranet.co.il/sf/biography.html>; <http://www.atranet.co.il/igud/>

64. <http://uscj.org/metny/middletown/hasid.htm> = "The Digital Geniza," a dizzying list of sites listing more sites on a large range of Jewish Studies topics.

century Romm editions at Vilna through the additions by R. Isaiah Pick Berlin and R. Aryeh Loeb Yellin, author of the towering *Yefeh Einayim*.⁵⁹ The latter-mentioned work was groundbreaking in opening access to parallels in the Yerushalmi and the rest of Palestinian talmudic literature, and probably was the harbinger of the literary comparisons of modern Talmud scholarship. This approach places the Babylonian Talmud squarely within the wider framework of the entire talmudic-midrashic corpus (Mishnah, *Tosefta*, Bavli, Yerushalmi, halakhic, and aggadic *midrashim*), liberating it from its splendid isolation.

Oral transmission had its mechanisms for dissemination and even for correcting a text already disseminated, although the latter was cumbersome and never fully effective. Once the word goes out you cannot really revoke it.⁶⁰ A similar situation applied in the manuscript culture, but eventually more effective mechanisms were developed, especially for works of central importance and popularity. Both Rashi and Maimonides introduced corrections in the master copy of their works, which were periodically culled and brought to those who held copies. This allowed the ongoing intellectual growth of the master, partly based upon new sources that came his way, to come into the possession of readers, albeit often in an incomplete and garbled fashion.⁶¹

The third age, the age of printing, introduced mass dissemination at the expense of flexibility. An author could update his or her work only by publishing an entire new edition. For the Talmud, this was not a major disadvantage. People could bear the fixity of the text, which even presented certain advantages. The major advances for Talmud study included the organization of commentaries and references on the page on an interactive basis, and, of course, bringing the Talmud text into the accessibility of more people than ever before. Internet can offer us the advantages of each of the previous modes: regular updating allows improvements or corrections to reach all users, overcoming time-gaps and spotty distribution; interaction can now be multidirectional.

ON THE CONTEMPORARY SCENE, anticipation of fuller use of computerization in general, and Internet in particular, cautiously suggests the dawning of a new age in the formatting and dissemination of the Talmud, its research tools, and instruction across many levels. This is especially so in light of the significant increase of Talmud study in our time, the appearance of popular commentary such as in the Steinsaltz and Schottenstein editions of the Talmud,⁶² and the preparation of commentary of scholarly academic standards in friendly format, being undertaken by the Society for the Interpretation of the Talmud.⁶³

Are we equipped for effective and creative utilization of the dramatic innovations offered by internet dissemination? Not only are we presented with new tools, we confront a new range of audiences, only a small part of which corresponds

to the learned cadre of classical Talmud study. Judaica related sites exist in abundance.⁶⁴ Many popular Talmud sites are connected with *Daf Yomi*.⁶⁵ E-daf.com provides a facsimile of any page of the Vilna *Shas* requested. Many allow you to hear voice *shiurim*. MasterDaf, for instance, is a series of lessons on the Mishnah and the Babylonian Talmud given by Rabbi Avraham Kosman over a seven year period.⁶⁶ Another format is written comments, such as Rabbi Mendel Weinbach's Weekly TalmuDigest and Weekly DAFootnotes.⁶⁷ The voice and column format are still pre-computer techniques originally developed on tapes and in newsletters. For these, Internet serves as a powerful distribution enhancer but not as an innovator of format.

The task of how to take better advantage of these formidable tools is still ahead of us. One recalls the impressive use of animation in Internet medical instruction as an example of new powerful vehicles that could also be turned to popular Talmud instruction: for the structure of the *sugya*, the delineation of its components (*tannaim*, *amoraim*, anonymous) and their interaction, relationship to parallels, conceptual hierarchies, realia, and situations in the *sugya*. The vast horizons of Internet can hardly be seen yet, let alone approached. The power put in our hands begs to serve the great goals of Talmud instruction and research.

It is only natural to approach the new media opportunities in light of the old, and especially the page of the printed Talmud to which we have become accustomed. However, its two-dimensional interaction of text, commentary, and references on the printed page is most suggestive for three-dimensional computer interface. What are the computerized elements for scholarly Talmud study that currently exist or can be anticipated through wishful thinking?

Text. For over twenty years The Jewish Theological Seminary's Saul Lieberman Institute of Talmudic Research⁶⁸ has been producing a text database available on CD including all primary textual witnesses of the Babylonian Talmud, namely, full manuscripts, *genizah* and other early fragments, first printed editions (both Iberian and Italian), and Vilna *Shas*, with sophisticated searches possible using the Bar-Ilan Responsa Project search engine.⁶⁹

It is anticipated that the versions will ultimately be arranged on a searchable computerized synopsis.⁷⁰ An Internet user of a Vilna text can click on any line to see the synoptic presentation of all textual witnesses of that line, with immediate appreciation of any breakdown into major textual families.⁷¹ This in turn will assist in understanding many aspects of the text of the Talmud, from fine points to the very distinction between amoraic diction and the anonymous voice.

The scholarly user will want to verify transcription. The coming update of

65. <http://www.dafyomi.org/> = list of computerized Talmud options, many for sale.

66. <http://www.masterdaf.com/> = on site or as the Wolfson Talmud, complete in thirty-seven CD-ROMS.

67. <http://www.ohr.org.il/>

68. Friedman, "New Bibliographic and Textual Tools for Talmudic Research," *Ninth World Congress of Jewish Studies* (Jerusalem, 1986), pp. 31-37; idem, "Today;" <http://www.jtsa.edu/research/lieberman.shtml>;

<http://www.jtsa.edu/campus/register/bulletin/lieberman.pdf>;

<http://www.h-net.msu.edu/~judaic/oldlibrary/TALM-MSS.SLI.txt>

69. A futuristic enhancement could include a site containing digital images of all Talmud editions ever printed, complete or partial. For listing and study see R. N. N. Rabinovicz, *Maamar al badpasat ha-Talmud*, ed. A. M. Habermann (Jerusalem 1965).

70. See Friedman, *Talmud Arukh*, pp. 297-411.

71. A futuristic enhancement would be links to the literature of *geonim* and *rishonim* presenting the available readings for that line. Of course that literature should also have synopsis of textual witnesses.

72. Courtesy of George Blumenthal. The high-quality digitization provides microscopic clarity that surpasses human-eye capabilities. As part of the Lieberman Institute project, this writer has visited Italian archives in Bassano, Bologna, Cesena, Imola, and Modena, accompanied by the expert photographer Ardon Bar Hama, capturing digital images of ancient Talmud pages used in bindings by the archivists in the sixteenth century, and preserved in extraordinary quality. These texts were located and often restored through the outstanding efforts of Prof. Mauro Perani.

השוכר את האומנין		308	
ג	צריכא דאיכא דמיתגר בארבעה ואיכא	דמיתגר בתלתא	דאמרו ליה אילאו דאמרת לן בארבעה
ה	צריכא דאיכא דמיתגר בארבעה ואיכא	דמיתגר בתלתא	דאמרי ליה אי לאו דאמרת לן בארבעה
א	צריכא דאיכא דמיתגר בארבעה ואיכא	דמיתגר בתלתא	וקא אמרי ליה אי לאו דאמרת לן בארבעה
ש	צריכ' דאיכא דמתגר בארבע ואיכא	דמתגר בתלת'	דאמרו ליה אי לאו דאמרת לן בארבעה
וא	צריכא דאיכא דמיתג' בארבעה ואיכא	דמיתגר בתלתא	דאמרו ליה אי לאו דאמרת לן בארבעה
וב	צריכא דאיכא דמיתגר בארבעה ואיכא	דמיתגר בתלתא	דאמרו ליה אי לאו דאמרת לן בארבעה
צ	צריכא דאי' דמיתוגר בארבעה ואיכא	דמיתוגר בתלתא	דאמרי ליה אי לאו דאמרת בארבעה
פפ	צריכא דאיכא דמיתוגר בארבעה ואיכא (דא)	דמיתוגר בתלתא	דאמרי ליה אי לאו דא"ל בארבעה
ף	צריכי דאיכ' מיתגר בארבע ואיכא	מתגר בתלת'	דאמר ליה אי לאו דאמר לי' בארבע'
מ	צריכ' דאיכ' דמיתגר בארבע' ואיכ'	דמיתגר בתלת'	דאמרי לי' אי לאו דאמר' לן בארב'
פ	צריכא דאיכ' דמיתגר בארבעה ואיכ'	דמיתגר בתלתא	דאמרי ליה אי לאו דאמרת בארבעה לא
ג	הוה 20 טרחינן	ומיתגרינן	בארבעה אובעית אימא הכא
ה	הוה 20 טרחינן	ומוגרין	נפשין בארבעה ואיבע' אימ' הכא
א	הוה 20 טרחינן	ומתגרינן	נפשין בארבעה איבעית אימ' הכא
ש	20 טרחינן	ומתגרינן	בארבע' איכא אימ' הכא
וא	הוה 20 טרחינן	ומיתגר	בארבעה אי' אי' הכא
וב	הוה 20 טרחינן	ומתגרינן	בארבעה איכ' תימ' הכא
צ	הוה 20 טרחינן	ומוגרינן	בארבעה ואיבע אימ' הכא
פפ	[...] 20	גרינ' ...	כאקנינן ...
ף	הוה 20 טרחינן	ומתגרינן	בארבעה אי' אי' הכא
מ	הוה 20 טרחי	ומוגרינ'	בארבע' ואיכ' אי' הכ' בכע' הכי' עסי' דאמרי לי'
פ	הוה 20	מוזלינן נפשין ומיתגרינן	גבך ואיכ' [אימא הכא בכעל הבית עסיקי' דאמרי ליה
ג	אילאו דאמרת לי בארבעה	הוה זילא	בימילתא לאיתגורי אובעית אימ' לעולם
ה	אי לאו דאמרת לן בארבעה	זילא בן	מילתא לאיתגורי ואיבע' אימ' לעולם
א	אי לאו דאמרת לי בארבעה	הוה זילא	כי מילתא לאיתגורי איכע' אימ' לעולם
ש	אי לאו דאמרת לן בארב'	הוה זילא	בן מילת' לאתגורי איכ' אימ' לעולם
וא	אי לאו דאמרת לן בארבעה	הוה זילא	לן מילתא לאיתגורי אי' אי' לעולם
וב	אי לאו דאמרת לן בארבעת	הוה זילא	בן מילתא לאיתגורי איכ' תימא לעולם
צ	אי לאו דאמרת לן בארבעה לא	הוה מוזלינן	נפשין ומתגרינן גבך ואיבע' אימ' לעול'
פפ	אי ... [בעה]	הוה מוזילנא	נפשאי ומתגורנא גבך ואיכא (א) אימ' לעולם
ף	אי לאו דאמר לן בארבעה	זילא ביה	מילתא לאיתגורא ואי' אי' לעולם
מ	אי לאו דאמר' לן בארבע לא	הוה מוזלינ'	נפשין ומתגרינ' גבך ואיכ' אי' לעול'
פ	אי לאו דאמרת לן בארבעא לא	הוה מוזלינן	לאיתגוריה ואיכ' [אימ' לעול'
ג	גפועלין	דאמרי ליה	כיון דאמרת לן בארבעה 25 טרחנן ועבדינן
ה	גפועלין	דאמרי ליה	כיון דאמרת לן בארבעה 25 טרחינן ועבדינן
א	גפועלים עסיקי' דאמ' ליה	כיון דאמ' ליה	כיון דאמ' לן בארבעה הוה 25 טרחינן ועבדינן
ש	גפועלים עסיקי' דאמרי ליה	כיון דאמרת לן בארבעה	25 טריחינן ועבדינן לך
וא	גפועל' עסיקי' דאמרו לי'	כיון דאמרת לן בארבע'	25 טרחינן ועבדינן
וב	גפועלים עסיקינן דאמרו ליה	כיון דאמרת לן בארבעת	25 טרחינן ועבדינן
צ	גפועלי' עסקי' דאמר ליה	כיון דאמרת לן בארבעה	25 טרחינן ועבדינן
פפ	גפועלים עסיקי' דאמרינן ליה	כיון דאמרת לן בארבעה	25 טרחינן ועבדינן
ף	באיתגורא גפועלים עסיקינן	כיון דאמר לי בד'	25 טרחינן ועבדינן
מ	גפועלי' עסי' דאמ' לי'	כיון דאמר' לן בארבע'	25 טרחי' ועבדינ'
פ	גפועלים עסיקי' דאמרי ליה	כיון דאמרת לן בארבעה	25 טרחינן ועבדינן

the Lieberman Institute will contain high quality digital images with large-magnitude zoomibility⁷² for many fragmentary texts, allowing exact manuscript deciphering in a manner never available before. This enlargement will also introduce new areas of study of medieval Hebrew calligraphy and its artistic qualities. A general presentation of facsimiles of Mishnah and Talmud manuscripts is available on the Hebrew University website.⁷³

Commentary. A careful review of Rashi studies should indicate the value of consulting the surviving manuscripts of his commentary. In light of the overwhelming importance of Rashi's commentary for all Talmud study and for the history of *halakhah*,⁷⁴ a link to a complete synopsis of his commentary is perhaps somewhere between the categories of realistic and futuristic. Text links of the type being developed by the Bar-Ilan Responsa Project⁷⁵ will serve entree to the entire commentarial and related literature, *geonim*, *rishonim* and *aḥaronim*.

Contemporary commentaries may also be computerized, or at least may establish some type of interface between the printed book and the electronic media. The Society for the Interpretation of the Talmud plans to limit the length of its full-tractate commentaries by sending the reader to additional material and in-depth excursions by footnoting the specific web page where this will be found.

Masoret ha-Talmud. Viewing and comparing extra-Bavli parallels throughout the talmudic corpus has become a *sine qua non* for certain contemporary approaches to Bavli study. Current tools for locating them⁷⁶ are difficult for today's users, and do not allow synoptic viewing. A computer-based reference to parallel passages within the talmudic-midrashic corpus (*Otzar ha-Makbilot*) has therefore been planned, and undergone initial construction under my direction at the Advanced Methodological Project of Bar-Ilan University. When complete, it is designed to allow the user to click on any line in the talmudic-midrashic corpus, and receive all parallel passages arranged in parallel columns.

A futuristic proposal of the third dimension would include all textual witnesses for all the other parts of the corpus: Mishnah, *Tosefta*, tannaitic and amoraic *midrashim*, and Yerushalmi. Presently, a Bar-Ilan website presents all textual witnesses of the *Tosefta*.⁷⁷ A select manuscript of optimal quality for each component of the corpus (and indeed for every post-biblical Hebrew work up to the *geonim*!) is found on the CD produced by the Historical Dictionary Project of the Academy of the Hebrew Language.⁷⁸ This vast work, soon to be available on website, is one of the outstanding scholarly achievements of our time. In order to compose a historical dictionary of the Hebrew language, the Academy is collecting full text of all post-biblical Hebrew, including ancient inscriptions, Qumran texts, liturgy, and the entire rabbinic corpus. Each text is based on a chosen manuscript, edited so as to address lacunae, etc. Thus for the Talmud student it presents a basic scholarly edition (i.e.,

73. Online Treasury of Talmudic Manuscripts of the Jewish National and University Library, David and Fela Shapell Family Digitization Project and the Hebrew University Department of Talmud, <http://jnul.huji.ac.il/dl/talmud/>

74. The *Beit Yosef* initiated the study of each paragraph in the *Tur* with a citation of Talmud and Rashi, as did *Maggid Mishneh* on the *Mishneh Torah*.

75. <http://www.biu.ac.il/JH/Responsa/>

76. *Yefeh Einayim*; M. Higer, *Otzar ha-Baraitot* (New York, 1938-1948); for order *Nashim* the Institute for the Complete Israeli Talmud's Edition, see Friedman, "Readings," pp. 136-138.

77. <http://www.biu.ac.il/js/tosefta/> with the other tannaitic texts planned.

78. <http://www.indiana.edu/~letrs/helpservices/QuickGuides/Maagarim/maagarim.html>

79. *Talmud Yerushalmi*, according to Ms. Or. 4720 (Scal. 3) of the Leiden University Library with Restorations and Corrections, Introduction by Yaakov Sussmann, The Academy of the Hebrew Language, Jerusalem, 2001.

choice text with editorial corrections) for Mishnah, *Tosefta*, Bavli, Yerushalmi,⁷⁹ halakhic and aggadic *midrashim*. Linguistic searches present all occurrences of any specific lexeme, without requiring the users to anticipate orthographic variations.

References. This function, like *Ein Mishpat*, leads the user out of the talmudic corpus towards related literature. The Lieberman Institute has produced an Index of References Dealing with Talmudic Literature. The CD presents references to scholarly literature, *rishonim*, and other categories on a page-by-page basis. The user can request listings by chapter and *mishnah* for Mishnah, chapter and *halakhab* for *Tosefta*, folio and side for Bavli, and various combinations for Yerushalmi (*midrash* has yet to be added). The output for each search is specific page references to any of hundreds of works that relate to the requested talmudic passage. Thus the works of the great authors of modern Talmud scholarship, including Jacob Naḥum Epstein, Saul Lieberman, and Avraham Weiss, can be consulted on a page-by-page basis. Future improvements would go beyond the system of references, which require finding the book, to links to an online facsimile of the book and page themselves.

This “passage index” must be supplemented by a computerized word- and subject-index. At present, a computerized word-index to research in the history of the Hebrew language exists as an internal resource at the Institute for Lexicography at Bar-Ilan University.

The above suggestions for online Talmud resources include some presently available, and some to be built. They must eventually operate under one virtual roof, with easy navigation from any beginning point to all the other locations. This vision may sound intimidating to the non-initiates of computerization. The generations born to computer-use will expect it and build upon it for enriching Talmud study in many frameworks. A range of educational applications will make use of the resources for specific backgrounds and needs. Graded electronic questionnaires will help the user find the level and combination fitting his or her needs.

The Babylonian Talmud is second to none in the post-biblical cultural history of the Jewish people, and in addition has often taken an honored place in world culture. It is both the Tree of Life and the Tree of Knowledge. Growing out of the ancient roots of the oral Torah, it has adapted to memorization and scrolls, handwritten codices, and the printed book. Its flowering in the computer age is a tribute to the Talmud’s vitality and never-ending engrossment of mind and spirit.⁸⁰

80. I will be glad to answer questions sent to: talmud@netvision.net.il



Above: Scroll of tractate *Hullin*, Babylonian Talmud (CUL T-S MISC. 26.53.17), with gratitude to Dr. S.C. Reif, Director of the Taylor-Schechter Genizah Research Unit at the Cambridge University Library, and the Syndics of the Library.



Right: Tractate *Bava Metzia* 23a (CUL T-S NS F(2) 36). The body of the text contains an otherwise unknown original reading; the later text was inserted in the margin.