ROGER BACON'S POLYGLOT ALPHABETS

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ROGER BACON AND LANGUAGE

Encyclopaedias usually label Roger Bacon as "theologian, philosopher, and scientist." Literary scholars and critics will certainly associate Roger Bacon with Robert Greene's Friar Bacon and Friar Bungay. The romantic comedy illustrates Bacon's close connections with experimental science and with magic art. Oculists even credit Greene's Franciscan friar with the epoch-making invention of spectacles. As for acoustics and experimental phonetics, the doctor mirabilis in Friar Bacon and Friar Bungay tried hard but eventually failed to construct a speaking machine. To his great disappointment, his Brazen Head collapsed while repeating the magic spell "Time is out."

As a matter of fact, Roger Bacon composed his "Linguarum Cognitio" or Part Three of Opus Majus and a fragment of a Cambridge Hebrew Grammar, besides several minor contributions to comparative linguistics. With respect to language cognition, he clearly distinguished three stages of acquisition and perfection: a reading and comprehending knowledge after three days, a translating knowledge and ability after several years, and a
full teaching, preaching, and praying competence to a speaker’s mother-tongue after thirty years. Bacon’s own language studies date back to his early university days at Oxford and Paris, lasting for over forty years of his life.

Substantially, the present state of research on Roger Bacon must and can build upon the critical text editions by John Sherron Brewer (1859), John Henry Bridges (1893, reprinted in 1964), and Edmond Nolan and S.A. Hirsch (1902). On the occasion of the seventh centenary of the monastic scholar’s birthday in 1914, S.A. Hirsch composed his most important contribution “Roger Bacon and Philology” to A.G. Little’s Festschrift for Roger Bacon. In 1963, a Mediaeval Studies symposium at Cologne focussed on the historical background of the humanities in Europe and on Jewish Studies. In 1973, Matthias Thiel submitted the printed version of his Munich dissertation on Grundlagen der Hebräischenkenntnisse des frühen Mittelalters. In 1978, Hans H. Wellisch devoted one of the subchapters of his monumental study on The Conversion of Scripts to “Roger Bacon.” In 1990, Sarah Larratt Keefer and David A. Burrows reported on their research into “Hebrew and the Hebraicum in Late Anglo-Saxon England.”

As for Roger Bacon’s command of Hebrew, there still prevail the evaluations formulated by John Henry Bridges, Edmond Nolan, and S.A. Hirsch, as well as again by S.A. Hirsch in 1893, 1902, and 1914 respectively. Hebraists and philologists praise Roger Bacon’s amazing erudition and perspicacity as much as they blame his astounding or almost incredible ignorance of comprehension and his disregard for spelling. Of course, any praise or blame should be weighed against the general thirteenth-century setting and potential of foreign-language learning. For, contrary to the long and splendid tradition of mediaeval Latin studies, Hebrew was then meeting with some serious lacks and reservations which detracted from its full acquisition and cognition:

- Religious barriers and aversions between Latin-oriented Christians and Hebrew-oriented Jews used to block off unimpeded cultural interchanges on a larger scale. In Solomon A. Birnbaum’s words: “Isolated Jews acquired a knowledge of the Christian script, and some learned Christians got to know the Hebrew alphabet.”

- A deplorable neglect and lack of dictionaries, grammars, handbooks, and translations on both sides of the Channel (but, as Roger Bacon remarked, at Paris in particular) hampered the straight, ready, and systematic approach to foreign-language acquisition. Only long after Roger Bacon’s undergraduate and postgraduate thirst for knowledge,
the expulsion of Jews from England in 1290 brought some quite considerable accession of Hebrew manuscripts and source-material to insular monastic libraries.

- Up to the eleventh century, literacy, literality, literation, and literature had remained the customary ways to foreign-language learning. After Jerome’s superb and unique knowledge of Hebrew had fallen into oblivion, *linguarum cognitio* practically survived as a rather sporadic and superficial command of paradigmatic lexical items. Late-mediaeval monastic students of Hebrew failed to acquire any deeper comprehension of or flexibility with syntagmatic contextual forms. Only towards the end of the eleventh century and during the twelfth century did orality, oration, and orature come to the fore. Abraham ben Meir ibn Ezra’s stay in and around London since 1158 must have established and promoted Hebrew studies in the Middle English period. First and foremost, the monastic scholars of Saint Victor soon took the lead. Urged by a horde of fanatic crusaders, Richard the Lionhearted hastened to blame the friars of Saint Victor for their Judaizing tendencies.\(^9\)

- Despite the complementary attempts at biblical literacy and orality, thirteenth-century scholars would, as a rule, stare at Hebrew knowledge as something rare and quite exceptional.

Roger Bacon’s basic conception of language sticks to the Donatist and Priscianic canon of Latin grammar. Progressing from the smaller to the larger units of segmental description, or from simple features to complicated phenomena, his studies follow the consecutive chapters or lessons on “vox — littera — syllaba — dictio.” Like his insular and continental contemporaries, Bacon shows and propagates Latin-oriented thinking. Accordingly, authors and scribes would follow the rules and habits of the letters of the Latin microalphabet for universal literation and transliteration. Each of the letters bears a name (*nomen*), a shape (*figura*), and a sound-value (*potestas*), but no longer a numerical code or symbolism (*computus*).\(^10\)

Theoretically and biographically, Roger Bacon could have acquired his knowledge of Hebrew either in England before 1240 as well as between 1247 and 1257, or in France between 1240 and 1247 as well as between 1257 and 1268. Practically and linguistically, some conclusive evidence and cogent arguments speak in favour of the Continent. It is true that the Franciscan scholar renders, transliterates, demonstrates, and teaches Hebrew punctuation in a complete (although partly erratic) Latin-alphabetic scheme as a linear set of ten long and short vowels.\(^11\)
Yet occasionally, spontaneously, and thus all the more convincingly, he presents his inventory of vowels after the Continental mnemonic pattern as conventionalized and internalized in Romania. Anglo-Saxon and Norman English vernacular mnemonics should rather have guided the Oxford scholar to the spoken letter-names of the Latin microalphabet as conventionalized and internalized in Germania. Speakers descended from insular or Continental Germanic stock as well as speakers descended from Anglo-Norman stock (like Bacon) but born, bred, and resident in thirteenth-century England for generations would normally tend towards sounding the *sonus naturalis* of vowels and the *sonus vicarius* of consonants in full length and sharp contrast to the short *sonus vicarius* of semivowels:

\[
\text{'a be ce de e ef ge ha i ca el em en o pe cu er es te u ex/ix.}
\]

Romance speakers would tend towards sounding the *sonus naturalis* of vowels at half length and in mild contrast to the short *sonus vicarius* both before semivowels and after consonants:

\[
\text{'a be c e de e ef ge ha i ca el em en o pe qu er es te u ex/ix.}
\]

Roger Bacon's Latinized scheme of the Hebrew vowels\(^\text{12}\) avoids any reflections of or connections and associations with the vocalic length in Kamets, Sere, Hirek magnum, or Hōlem magnum. Rather, it mirrors a short *sonus vicarius* of the syllabophones and identifies the sound-values with the mnemonic typology of Romania.

**ROGER BACON AND HEBREW**

Beyond these preliminaries, only a minute analysis of the two alphabets in Roger Bacon's "Linguarum Cognitio" and in the fragment of his *Cambridge Hebrew Grammar* can give a deeper insight into the state and perfection of his Hebrew. "Linguarum Cognitio" presents a Hebrew-Latin microalphabet plus a Hebrew macroalphabet in three manuscript lines; modern editors expand it into four printed lines. The chart takes stock of the elaborated 27-letter Hebrew pansystem. It comprises the 22 letters in graphemic transliteration and integrates the allographic final shapes of the letters KMNP TS or the so-called KaMNaPeTS. Bacon correlates the Hebrew macro- and microalphabets with the equivalents of the Latin microalphabet.
Unlike "Linguarum Cognitio," the fragment of the Cambridge Hebrew Grammar merely correlates the Hebrew macroalphabet with the Latin microalphabet.¹⁵
Instead, it superposes the allophonic transcripts of the Latin sound-values above the 22 regular and the 5 diacritic letter-names of the Hebrew macroalphabet. At first (and further) sight, Roger Bacon arranges the leftward Hebrew alphabet in an inconsistent, confused, and erratic sequence. Obviously, the copyist did not grasp or misconceived and spoilt the rough draft; subsequently, the grammarian never corrected the scribal blunder. At any rate, the chart must have complicated or discouraged elementary learning. Unless some plausible solution to the puzzling disorder and transpositions can be produced from the manuscript reading as it stands, the alphabet of the Cambridge Hebrew Grammar will justify the blame for Roger Bacon’s poor Hebrew. Fortunately, there seems to have been some method in the mediaeval scribe’s “madness.”

For lack of cultural organization through school attendance or circulation of manuals, mediaeval minds had to contrive various subtle ways of learning by rote the complete sets of the Hebrew, Greek, or Latin alphabets with over twenty-two letter-names. Biblical, Talmudic, Patristic, and Scholastic masters used to transmit the Hebrew (or any other) macro- or microalphabet in subsets or mnemonic stretches called connexiones. In order to ease the learners’ minds by splitting up the memorial load into brief mnemonic aids, teachers subdivided the predominantly seven connexiones according to the numerical scheme “4-4-2-2-3-3-4.” Thus, the closed set of the Hebrew macroalphabet fell into its subsets: Aleph, Bet, Gimel, Dalet (4)—He, Waw, Zayin, Het (4)—Tet, Yod (2)—Kaph, Lamed (2)—Mem, Nun, Samekh (3)—Ayin, Pe, Tsade (3)—Koph, Resh, Sin/Shin, Tav (4). Each of the subsets yoked together a sequence easy to remember and worthy as symbols of faith and life.

The edition of the fragment of the Cambridge Hebrew Grammar transfers the basic material of the manuscript copied into a Hebrew alphabet of five printed lines. The Latinized version without the Hebrew microalphabet renders the four connexiones as a scheme of “8-9-5-5” letters. All the lines follow the Hebrew writing- and reading-direction from right to left.

8: ש ה ג ב
9: ל מ נ כ
5: מ ש

The initial segment at 5 letters of the first connexio of 8 and its final segment at 3 run from the centres of the first and the second line to their left ends. The initial segment at 3 letters of the second connexio of 9 and
its final segment at 6 fill the first and the second line from their right ends to their centres.

This close inspection of the macroalphabet in the *Cambridge Hebrew Grammar* can trace Roger Bacon’s own or his scribe’s copy to some manuscript at issue with a five-line Hebrew alphabet in five *connexiones* at “5-6-6-5-5” letters.

The scribe must have read, thought through, and written the right-to-left Hebrew *connexiones* in his left-to-right Latin habit, filling the rest of the lines after the same reverse procedure.

The legend or message of the chart reads as follows: The Roman numerals mark the five printed lines in the *Cambridge Hebrew Grammar*. The numbers in Arabic figures of each first line count the scribe’s reverse left-to-right arrangement of the Hebrew letters in the second below. The numbers in Arabic figures of each third line count the proper and original right-to-left arrangement of all the subsets or *connexiones* of the complete set of the Hebrew alphabet.
Upon reconstruction, the two-layered Hebrew alphabet of the *Cambridge Hebrew Grammar* agrees perfectly with the three-layered alphabet of "Linguarum Cognitio." From top to bottom, the three layers hold the symbols of the Latin (micro)alphabet, the Hebrew macroalphabet, and the Hebrew microalphabet. In other words, the upper line transcribes the Latin sound-value (*potestas*); the central line transliterates in Latin the letter-name (*nomen*) of the Hebrew macroalphabet; the lower line draws character for character (*figura*) the letters of the Hebrew microalphabet, starting consistently from right to left.

Apart from some diacritic specifications of the full letter-names, the surface structures of the pansystems of Roger Bacon's two Hebrew alphabets (the macroalphabet in the *Cambridge Hebrew Grammar* as well as the macro- and the microalphabet in "Linguarum Cognitio") form a seemingly monolingual block. Their dual arrangement along with the Latin alphabet presents them in bilingual comparison. Yet, certain features and incongruities in the surface structures of the Hebrew macroalphabets point towards deep structures comparatively impure and heterogeneous owing to their polyglot provenance.

Excepting the marks of Sephardic pronunciation as not necessarily acquired in France, several phonic, graphic, and lexical features run through Roger Bacon's linguistic corpus, producing an impression of something quite regular, normal, or habitual in his conception, diction, and description, of something bearing the Continental stamp of Roman internalization. Along these lines, Bacon builds upon the typological change into short prop-vowels after the consonants in the Latin alphabet in Romania, such as bè cè dè că pĕ qŭ tĕ. As customary on Romance territories, the alphabets drop the lenis aspiration of Aitch. Lexically, the letter-names of the central line implement the Northern French and (Anglo-)Norman diacritical wordpairs "uverte–close" and "torte–dreite" in order to differentiate between the Hebrew subset of the five dual letters (initial or medial versus final) memorized as diacritics for the KaMNaPeTS letters.

**Roger Bacon and Ashkenaz**

Neither a consistent reconstruction of the pansystem of the Hebrew macro- and microalphabet nor the clear evidence for Romania as the linguistic main source area of the Latin microalphabet and of several phonic, graphic, and lexical features can sufficiently exhaust the surface structure of Roger Bacon's dual alphabet in the *Cambridge Hebrew Grammar* and his triple
alphabet in “Linguarum Cognitio.” Hebrew and Latin-Romance bilingualism must fall short of a thorough reading of the manuscript material and of an adequate solution to Bacon’s knowledge of Hebrew. Some marks of surface-structural significance suggest historical ties to the sound-evolution in Germania. “Linguarum Cognitio” alters the letter-names vav and tav of the Cambridge Hebrew Grammar into vaf and taf respectively. Although fortis–lenis oppositions may well occur in French or in (Anglo-)Norman adjectives like juif–juive, neuf–neuve, vif–vive, the further instances of the tenuis t in Iot and Lamet instead of the media d inIOD and Lamed will hardly admit of a purely Romania-based explanation of the phenomenon. Similar observations on devoiced final consonants make the pendulum still more decidedly swing towards Germania. Byrhtferth’s late-Anglo-Saxon Manual\(^{17}\) and Roger Bacon’s Cambridge Hebrew Grammar mention the letter-names Beth, De-lth. (Heth), Theth and beth, deleth, heth, teth respectively. Yet, “Linguarum Cognitio” switches over to bet. dalet, heis, teis. Final s for t in heis and teis attests to the Second or Old High German Conso-nant Shift in Merovingian days.\(^{18}\)

What in the lexical distribution of the letter-names can account for the “t-t-s-s” break with either sound system or for the “Hebrew plus Old High German” mix? For lack of charts, dictionaries, encyclopaedias, grammars, handbooks, and other scripted aids, mediaeval teachers and learners organized and memorized the continuum or pansystem of the Hebrew macroalphabet in shorter stretches, subsets, or connexiones. On an average, a mediaeval connexion used to bind together some 4 or 5 letter-names of the macroalphabet or acrophones of the microalphabet. The seven connexiones of the Hebrew macroalphabet normally subdivided into the numerical scheme “4-4-2-2-3-3-4.” Memories naturally served at a higher degree of clarity, precision, and retention of the correct sequence, when memorizing the comparatively frequent first and second connexiones. Erratic memorization or reproduction would more likely creep in with the rare and final sections of the alphabet. Likewise but outside the subsets or connexiones, erratic reproduction might occur in the subsystems of the voces memorales, which classify and memorize particular acrophones of the microalphabet in
phonological order. Besides, mediaeval religious communities tended towards segregation, and Christian students of Hebrew more often than not depended upon liberal Jews and converts with only moderate education and literacy. Roger Bacon or his scribe corrupted the Talmudic mnemonic SaSSaTSaReSH (שדר) in the anonymous Sepher Yetsirah for the sibilants from voiced z via voiceless s, whizzed ts, and rhotacized r to hissed f.¹⁹ The letter-name sazake mistakes the mnemonic for Tsade. The haplology of compressing sassaza- into saza- drops the voiceless acrophone of Samekh, a sound-value nonexistent and superfluous in Judaeo-French after its convergence with Sin instead of Shin.²⁰

A comparative investigation and systematic description of Roger Bacon’s scattered heritage of Hebrew can help to grasp and to judge anew his language conception and cognition. It lends sharper profile and power of distinction. The reinterpretation can clear away the contradiction prevailing among the scholars praising Bacon’s amazing erudition and perspicacity as much as blaming his astounding or almost incredible ignorance of comprehension and his disregard for spelling. Practically, all the strange signs of a chaotic or random command of Hebrew and the instances of blunder, inadvertence, or ignorance will cede to a systematic catalogue of rules and explanations. The catalogue turns the matter under investigation from an impression of subjective and personal misachievement into findings of objective configuration and interpersonal concatenation. The network of the bilingual Latin-Hebrew alphabet in the fragment of the Cambridge Hebrew Grammar, the polyglot Latin-Hebrew-Judaeo-French-Old-High-German alphabet in “Linguarum Cognitio,” the brief textual samples and illustrations of punctuation, pronunciation, and syllabophony as well as the onomastic etymologies identify Roger Bacon as an empiricist scholar who trusted speaking informants and oral information no less than he did writing authorities and scripted documents. Bacon as a late-mediaeval philologist and expert used to draw on various and heterogeneous sources.

In all likelihood, Roger Bacon gathered the essentials of his “Hebrew” in Northern France rather than in England. The north-western melting-pot of Ashkenaz surrounded him with a diversity of languages as well as with many processes of language amalgamation. On the one hand, the Carolingian Empire had created the peaceful coexistence of Romania and Germania, with Latin operating as a coordinating factor in everything ecclesiastical, educational, judicial, commercial, and international.²¹ On the other hand, Northern France formed one of the main centres of Ashkenazic
Jewry. From Gershom ben Yehuda's *yeshiva* at Mainz in the late tenth century, Rashi's Talmudic Academy of exegetic studies at Troyes in the second half of the eleventh century, and the ben Meir and Kalonymide families with their Rhenish *Bet Hamedrash* learning at Speyer, Worms; and Mainz (ד"ש), language cognition served the Rabbinic ideals of cosmopolitan education.²² Rashi alone passed on some two thousand French loanwords into German, many of them documented at their earliest occurrence. In Roger Bacon's day and age, habits of Franco-German mind and speech lived on among Rabbinic Jews in the outstanding Halakhic scholars Meir ben Barukh of Rothenburg (1215–1293) and Mordekhai ben Hillel (1240?–1298). Meir ben Barukh's *Vademecum* or diary holds evidence of the scholarly exchange between Romania and Germania from 1237 to 1256.²³ The span includes the 1240–1247 period of Bacon's stay at Paris. In the course of the cultural exchange, German rabbis would attend French schools, and vice versa. Alert minds and polyglot speakers made for wide understanding and high levels of education. According to the *Vademecum*, thirteenth-century Germania and Romania hosted both French words in Hebrew transliteration and spiritual debates between Jews and Christians. Meir ben Barukh's *Vademecum* opened a literary vogue with the highest circulation of diaries between 1290 and 1300.²⁴

The present state of research on the cross-Channel ties and cultural interchange in the Middle Ages between England and the Continent, between Jews and Christians, of Hebrew with Middle English, Old and Middle High German, or Yiddish as well as of Hebrew with Old Northern French and Judaeo-Northern French largely rests on uncoordinated studies of the various disciplines. Expert scholars in Germanic, Hebrew, Romance, or Yiddish philology, historians, Judaists, palaeographers, philosophers, and theologians have reported on research projects and investigations from their specific angles. Only with the revival of Jewish Studies in Israel, in England, on the Continent, and worldwide do research projects begin to focus on the origins and the situation of the Hebrew-Romance-Germanic-Yiddish catchment area and melting-pot of pre- and proto-Ashkenazic Jewry.

Unwittingly, Solomon A. Birnbaum's *Yiddish: A Survey and a Grammar* (Manchester, 1979) broke fresh ground for investigating Roger Bacon's acquisition and cognition of Hebrew. After a Biblical city, Ashkenazim Jews in Northern France called their European homeland Tsarphat.²⁵ They grew to speak and write the Tsarphatic variant of Judaeo-French. Birnbaum was able to trace some ten Tsarphatic manuscripts in Cambridge, London, and Oxford for the period between 1182 and 1397. Owing to persecutions and
expulsions in the West, Tsarphatic Ashkenazim Jews migrated to the east in the fourteenth century, giving up Tsarphatic and picking up West and Central Yiddish speech and script. In contrast to the scriptio defectiva or consonantal iteration of Hebrew, Tsarphatic conformed with the scriptio plena of Yiddish. Aiming at Hebraification, Tsarphatic or Judaeo-Northern French transliteration rendered both consonants and vowels. Of course, the exchange of the one language medium for another did not go without some prior or posterior contact in culture and communication. This give-and-take from East to West and vice versa entailed the consequence that the Jews in Northern France started absorbing Old High German and proto-Yiddish sources and components as early as the ninth century—early enough for Roger Bacon’s Hebrew studies in the Romance-Germanic-Semitic melting-pot of Northern France. At its initial stage, Ashkenazic Hebraifications of manuscripts mirrored Tsarphatic traits. Apart from the research on Tsarphatic, Roger Bacon’s Cambridge Hebrew Grammar and “Linguarum Cognitio” yield a promising contribution to the expansion and regional infiltration of Yiddish. Indirectly, Bacon’s “Hebrew” may shed light on the currently debated rise of proto-Yiddish in the Western area of the Rhineland or the Eastern area of the Danube Basin or in both areas simultaneously.

Roger Bacon and “Hebrew”

Roger Bacon’s conception and cognition of language and languages were deeply rooted in the Roman tradition of Donatus, Priscianus, Cassiodorus, and Alcuin. In his comparative studies, Bacon viewed language as something static, constant, uniform, invariant, identical, and ubiquitous. He could not see the core of problems such as regional diversity (dialect), individual stamp (idiolect or sociolect), temporal change (chronolect or diachronics). Far from the modern demands for the consistency, stringency, or systematics of linguistic description and notation, he still lacked a good eye for the mechanism of covariation or alternation (synchronics).

Naturally, Roger Bacon’s overall conception affected his attitude towards language learning, usage, and teaching. He did penetrate and know how to keep asunder the substantial iteration of Latin proper and the derivational transliterations of Latinized Indo-European languages. Yet, he failed to grasp the fundamentals of the Semitic language branch and the deep structure of Hebrew. Instead, he put the adopted surface structures of Hebraifying transliterations on a level with genuine literations of Hebrew.
Bacon's idea of a uniform "Hebrew" written or spoken at various places and in various times practically covered both literacy and orality. As a consequence of his empiricist views and methods of research, his conception of "Hebrew" presupposed some koine with an omnipresence and interchangeability among all Jews as perfect transmitters and informants of identical language characteristics. His "Hebrew" merged all sorts of Jewish information on Hebrew letter-names into the two polyglot alphabets. Insular post-Anglo-Norman Conquest Jews of Ashkenazic or Sephardic provenance, Tsarphatic or Judaeo-Northern-French informants including the Old- or Middle-High-German- and proto-Yiddish-speaking representatives of the Rabbinic interchange with the Rhineland, Hebrew native speakers from the Holy Land and the adjacent Oriental countries in the Age of Crusades would all serve without differentiation or exception as heralds of the Hebrew-language world. In the linguistically blurred relief of the Northern French catchment area and in a seemingly uniform shape of partly Hebrew and partly Hebraified letters, a mixture of Latin, Romance, Semitic, and Germanic components must not discredit an otherwise closed system of the Hebrew alphabet. Upon detailed historical and mnemonic reconstruction, both the fragment of the *Cambridge Hebrew Grammar* and "Linguarum Cognitio" present a polyglot but substantially sound and well-structured "Hebrew" alphabet.

The conclusive evaluation of Roger Bacon's "Hebrew"-Latin alphabets demands a cautious interpretation of their various and polyglot facets. The complex, multilayered, and heterogeneous systems, subsystems, schemes, mnemonics, and items gathered from correct as well as from incorrect sources blur the path of the friar's studies and knowledge of "Hebrew." If a combination of causal logic and inductive reasoning or speculation can make a contribution to methodology and philology, a string of facts, concatenations, arguments, and conclusions can help to construe the historical evolution and relative chronology of the two polyglot alphabets.

The scribe of the two-line "Hebrew" macroalphabet in the fragment of the *Cambridge Hebrew Grammar* misconstrued and miscopied the connexiones or subsets of the Hebrew alphabet. Roger Bacon took no visible pains to correct the confusion in the manuscript. The Latin terminology and transliteration of the sound-values look rather conventional, elementary, rule-and-school-abiding, dependent, and narrow in source and ideas. As a whole, the draft lacks critical perspicacity and competence; it mirrors a receptive and imperfect knowledge of Hebrew in an earlier composition. The three-line "Hebrew" micro- and macroalphabet in "Linguarum Cognitio"
arranges the connexiones in their consistent "Hebrew"-Latin duplication, specifies the letter-names by means of the Norman-French or Anglo-Norman diacritics, and adds the final letter-shapes of the KaMNaPeTS consonants. Author and scribe realize the allophonic sounds of K and P. With all its traces of a mixed provenance and composition, the polyglot "Hebrew" alphabet in the "Linguarum Cognitio" version signalizes critical perspicacity and competence; it looks more substantiated, supplemented, and elaborated thanks to comparison and circumspection. The presentation betrays a more comprehensive, advanced, considerate, and perfect state of language acquisition and cognition in a later composition. Judging by the objective potential and possibilities of the late thirteenth century, Roger Bacon's subjective achievement certainly deserves no blame but high praise.30

NOTES


7 For praise and blame, see Bridges, ed. cit., ix; Nolan and Hirsch, ed. cit., 201 and 205 note 5; Hirsch, in Little, ed. cit., 142-51; Wellisch, op. cit., 157 notes 38 and 39.


Bridges, ed. cit., 91.


For the complete Latin microalphabet and pansystem as conventionalized and internalized in Romania, see page 165 above.

Reproduced from the triglottal chart of the Latin, Greek, and Hebrew alphabets in *Byrhtferth’s Manual* (A.D. 1011), now edited for the first time from MS. Ashmole 328 in the Bodleian Library by S. J. Crawford, EETS o.s. 177, Oxford, 1929, rpt. 1966, p. 166A.


For the Talmudic mnemonic SaSSaTSaReSH in the anonymous *Sepher Yet-sirah*, see Bacher, op. cit., 21; for the transposed mnemonic SaSSaSHAReTS, see

20 Birnbaum, op. cit., 150 and note 2: "The letter šin/sin stands for [s], a spelling that survived into the nineteenth century. It was inherited from Zarphatic" (original in italics). "Medieval French had no [J], the modern ch was then still [ťʃ], so no šin was needed in the Zarphatic spelling system." For the adaptation of the Hebrew alphabet to the phonological structure of German and for the demands of Yiddish and the superfluous letters respectively, see Bin-Nun, op. cit., 125.


24 Sirat, loc. cit., 94.

25 Birnbaum, op. cit., 33: "The regions which today form northern France were called by the Jews Tsarfat (a town mentioned in the Bible, English Zarephath), hence my name Zarphatic for the language of the Jewish community in northern France and for their type of Hebrew script. From here some migrated eastward to those parts of the German speech territory which are now its west-central and southern regions."

26 For the Zarphatism as the immediate ancestors of the Ashkenazim. see Birnbaum, op. cit., 58, 115, 118–19.


28 Birnbaum, op. cit., 67. For the minimal changes in the insular type of Zarphatic script during the short period between the Anglo-Norman Conquest (1066) and the expulsion of Jews from England (1290), see Solomon A. Birnbaum, *The Hebrew Scripts 1: The Text*, Leiden, 1971, 296.

29 For Roger Bacon’s view and definition of Jewish informants, see Brewer, ed. cit., 434: “Doctores autem non desunt; quia ubique sunt Hebraei, et eorum lingua est eadem in substantia cum Arabica et Chaldaea, licet in modo differant. Suntque homines Parisius, et in Francia, et ulterior in omnibus regionibus, qui de his sciunt quantum necesse fuerit in hac parte.” For the generic term *moderni Iudei* in his fragment of the *Cambridge Hebrew Grammar*, covering all sorts of Jewish authorities and informants, see Nolan and Hirsch, ed. cit., 204. With regard to Bacon’s particular preference for empirical analysis, induction, and cognition, see Wells, op. cit., 155 and 158–59 respectively: “... perhaps the first modern scientist, preferring firsthand knowledge and experiment to mere bookish wisdom and scholastic disputations on the writings of Aristotle ...” and “Bacon’s work must be considered the beginning of the systematic transliteration schemes for non-Roman alphabets. He designed definite phonetic values to each letter, based on the actual pronunciation by native speakers of the languages and on a thorough knowledge of their grammar and syntax.”

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[Note: The Hebrew font contained in this article is typeset in Joel Hoffman’s hclassic font.]

WORKS CITED


Burrows, David A. *See s.n. Keefer, Sarah Larratt.*


——. “Roger Bacon and Philology.” In A.G. Little, ed. 101–51.


