From Value to Fact: The Emergence of Phonology as a Precise Discipline in Late Imperial China

Benjamin Elman

Journal of the American Oriental Society, Vol. 102, No. 3. (Jul. - Oct., 1982), pp. 493-500.

FROM VALUE TO FACT: THE EMERGENCE OF PHONOLOGY AS A PRECISE DISCIPLINE IN LATE IMPERIAL CHINA*

Benjamin Elman

Colby College

The emergence of phonology as a key discipline during the Ch'ing dynasty was closely tied to the triumph of precise empirical techniques of philological analysis, championed by participants in the evidential research movement, over Neo-Confucian moral philosophy. In phonology, such applications stressed the reconstruction of archaic finals through an examination of ancient rhyme schemes. In the late eighteenth century, significant steps were taken to investigate archaic initials as well. Such pioneering studies established the foundations of modern Chinese linguistics and at the same time provided Western linguists with much of the necessary data and tools needed to refine earlier reconstructions of ancient Chinese phonology.

INTRODUCTION

During the Sung (960–1279) and Ming (1368–1644) dynasties, the goal of Confucian literati was the cultivation of moral perfection. Their ideal was a life of intense and unremitting effort, a life they felt would successfully emulate the ancient sages. After 1644, however, this ideal was taken less and less literally. The Ch'ing dynasty (1644–1911) heirs of these fervent groups of Neo-Confucians were members of a secular academic community, which encouraged original and critical scholarship.

For the Neo-Confucians, the Confucian Canon had been the repository of moral truth that transcended time and place. The reaction of Ch'ing textual scholars against the unquestioned authority of the Classics was most evident in their precise studies in linguistics, astronomy, mathematics, geography, and epigraphy. Seventeenth- and eighteenth-century scholars applied these fields of research to verify or controvert important elements of the Confucian legacy. They were dissatisfied with the unverifiable moral ideals that pervaded the Sung-Ming vision of antiquity.[1]

Many were alarmed, however, by the possible heterodox implications of such exact scholarship. In a revealing letter written in 1668 to his hometown friend Ku Yen-wu[a] (1613–82), Kuei Chuang[b] (1613–73) noted:[2]

> In your previous letter you wrote that you were concentrating on phonology. You have already completed books [on this subject], but I have not yet seen them. However, a friend told me in some detail that in your discussion of rhymes you necessarily emphasize the most ancient, saying that Confucius could not avoid making mistakes [in pronunciation]. These words are startling for people to hear. Because of such statements, it seems to me that as your scholarship broadens your eccentricities will deepen. In the future it will not be limited to rhymes. If your other discussions are anything like the discussion of phonology, won't they also [be regarded] as the [expression of] unrealistic and odd opinions?

Ku intended no impiety. When he contended that Confucius in transmitting the Classics could not help

---

[1] See my "The Unravelling of Neo-Confucianism: The Lower Yangtze Academic Community in Late Imperial China" (Unpublished Ph.D. dissertation, University of Pennsylvania, 1980), passim.

[2] Kuei, *Kuei Chuang chi* [Kuei Chuang's Collected Writings] (Peking: Chung-hua shu-chü, 2 vols., 1962), II/323–24.

but pronounce the words in the dialect of his time and locality, Ku was attempting to reconstruct the way the sages themselves had spoken the words now contained in the Classics. His goal was the clarity and purification of the Chinese language, which would in turn induce a purity of thought and restore the classical ordering to the world. Ku explained:[3]

> To summarize the ten divisions of ancient pronuncia-
> tion, I prepared the *Table of Ancient Pronunciation*
> in two chapters. As a result, the six Classics are now
> readable. The books by various pre-Han (206 B.C.–
> A.D. 220) masters all contain [phonetic] variations,
> but the variants are not extreme. Heaven by preserving
> these writings has demonstrated that the sages will
> one day return and restore the pronunciation of today
> to the clarity and purity of ancient times.

To achieve his goals, Ku Yen-wu stressed a rigorous analysis of historical changes in the pronunciation of Chinese characters that appeared in the Classics. In this effort, he was one of the pioneers of an emerging *k'ao-cheng*[c] [evidential research] movement, a movement that emphasized the importance of phonology.

Chiang Yung[d] (1681–1762) went even further than Ku Yen-wu. He rejected the idealized vision of research that Ku still shared to an important degree with his Neo-Confucian predecessors. Chiang approached his research of rhymes and ancient pronunciation as an interesting technical project and not as a means to an ideal socio-political end. In fact, the editors of the definitive *Ssu-k'u ch'üan-shu*[e] [Complete Collection of the Four Treasuries (in the Imperial Library)], which was completed in the 1780's, agreed with Chiang on the status of ancient rhymes. The past they argued could not be revived intact by reconstructing ancient pronunciation. A crucial transition point had been reached in Confucian scholarship.[4]

Reemphasis on phonology during the Ch'ing dynasty was inseparable from the growth of auxiliary disciplines such as epigraphy, bibliography, collation, and forgery detection. Techniques used in these fields became essential tools in the more formal disciplines of textual criticism, historical geography, historical

linguistics, and mathematical astronomy. Evidential scholars viewed such formal disciplines as fields of research where *k'ao-cheng* methods could be applied to discrete bodies of knowledge.[5]

Relying on systematic gathering of materials that they would then critically scrutinize and in certain cases even quantify, Ch'ing scholars combined evidential research methods with data collection and organization. Liang Ch'i-ch'ao, for example, has estimated that Ch'ien Ta-hsin[f] (1728–1804) recorded over one hundred items in his notation book before he attempted to shed new light on the phenomenon of labiodentals (*ch'ing ch'un-yin*[g]) recorded in ancient Chinese texts. Ch'ien presented his data within a systematic discussion of ancient pronunciation (see further below).[6]

Moreover, during the Ch'ing period, there was noticeable progress in *k'ao-cheng* fields of inquiry. Such progress was possible because evidential scholars, unlike their Sung and Ming precursors, stressed research topics that lent themselves to cumulative results. Accompanying this sense of the continuity of academic progress was a quest for originality.

Although new discoveries had been praised during earlier dynasties, novelty became an explicit aim during the Ch'ing period. The pressure to "discover what our predecessors had not yet discovered" (*fa ch'ien-jen so wei fa*[h]) was felt at all levels of *k'ao-cheng* studies. Research on Chinese phonology was perhaps the most visible area in which the cumulative nature of textual scholarship was revealed and proven to Ch'ing scholars.[7]

PRE-CH'ING LINGUISTIC RESEARCH

During the Han dynasty, Hsu Shen[i] (58–147) had prepared the first systematic treatment of the Chinese written language in his *Shuo-wen chieh-tzu*[j] [Analysis of Characters As An Explanation of Writing] which

---

[3] Ku, *Ku Ting-lin shih-wen chi* [Ku Yen-wu's Collected Essays and Poems] (Hong Kong: Chung-hua shu-chü, 1976), p. 28.

[4] *Ssu-k'u ch'üan-shu tsung-mu* [Catalog of the Complete Collection of the Four Treasuries] (Taipei: I-wen yin-shu-kuan, 10 vols., 1974), 42/45a–45b, 44/50b.

[5] See my "The Unravelling of Neo-Confucianism," chapters 2 and 5.

[6] Liang, *Intellectual Trends in the Ch'ing Period*, translated by Immanuel Hsu (Cambridge: Harvard University Press, 1959), p. 70.

[7] For examples of such praise, see *Ssu-k'u ch'üan-shu tsung-mu*, 11/25a, 11/27b, 14/4b, 14/6a, 14/29a, 40/20b, 41/34b, 42/34a, 42/43a, 42/53a, 106/10b, 106/17a, 106/26b, 106/47a, 106/50b, 107/18a, 107/23b. These citations are only a brief sample taken from the *Documents*, Philology, and Astronomy and Mathematics subsections.

he presented to the throne in 121 A.D. Hsu arranged 9,353 different characters according to 530 radicals (*pu-shou*[k]), a system that with subsequent modification remained the basis of organization in most Chinese dictionaries. Not only did Hsu Shen provide the orthography of the archaic form for each character, he also specified the phonetic element for the vast majority of characters (over 80%) that were formed as phonetic compounds (*hsieh-sheng*[l]). The *Shuo-wen* became the definitive statement of the six rules (*liu-shu*[m]) governing the formation of Chinese characters. From the end of the Later Han dynasty (25–220) until the Northern Sung (960–1127), Hsu's research was accepted as the final authority in paleography and etymology.

Study of ancient phonology continued during the Han when Cheng Hsuan[n] (127–200) recognized that contemporary and ancient forms of pronunciations differed. However, many scholars of the Han through T'ang (618–906) dynasties were unable to explain why certain words in the *Poetry Classic* and other classical texts no longer rhymed in expected places. They began to force the rhyme by emending characters so that the proper rhyme sequence was reestablished. Ignoring the possibility that the text had been correct and that the pronunciation of certain words subsequently had diverged, scholars introduced arbitrary changes into the Classics solely on the basis of rhyming criteria.[x]

A byproduct of Buddhist translation work from Sanskrit into Chinese after the fall of the Han dynasty in A.D. 220 was a Chinese phonetic system for the transcription of foreign proper names. In this system, every foreign work was divided into syllables, each represented by a Chinese character. In addition, Chinese syllables were subsequently transliterated by separating them into two parts, the initial sound and the remainder represented by two characters, e.g., *i*[ag] and *chou*[ah] as the transcription for *yu*[ai]—the first

Table 1. The Six Types of Characters

1. *CHIH-SHIH*[o]: simple ideographs, e.g., *shang*[p] [above] and *hsia*[q] [below].
2. *HSIANG-HSING*[r]: pictographs, e.g., *shan*[s] [mountain], which was originally *shan*[t].
3. *HSIEH-SHENG*[u]: phonetic compounds, e.g., *chiang*[v] [Yangtze River] made up of the water radical[w] for meaning and the phonetic element[x] (*kung*) for sound.
4. *HUI-I*[y]: compound ideographs, e.g., "sun" (*jih*[z]) "moon" (*yueh*[aa]) to form "bright" (*ming*[ab]).
5. *CHUAN-CHU*[ac]: extant characters used for new words by extension of meaning, e.g., *pu*[ad] [cloth] for "money."
6. *CHIA-CHIEH*[ae]: borrowed characters, e.g., *wan*[af] [scorpion] also used to mean "myriad" because of the same pronunciation.

character represents the initial consonant ([y]i-) and the second represents the remainder of the syllable (-[o]u). Known as *fan-chi'eh*[aj] [syllabic transcription], this system became the basis for a precise investigation of phonetics during the T'ang dynasty.

Using this phonetic system, Lu Fa-yen[ak] (ca. A.D. 600) compiled a rhyming dictionary entitled *Ch'ieh-yun*[al] [Rhymes Indicated by Syllabic Transcription], which gave the pronunciation of characters in *fan-ch'ieh*. Later, Lu Te-ming[am] (556–627), in his seventh-century etymological and phonological reference book entitled *Ching-tien shih-wen*[an] [Explanations of the Classics], which was based on some fourteen classical texts, reconstituted from more than 230 different classical commentaries the pronunciation of the Han, Wei (220–64), and Six Dynasties (265–589) periods, giving each syllable in *fan-ch'ieh* transcription. In addition, Lu acknowledged that ancient and modern rhymes were not equivalent.

Ch'en P'eng-nien[ao] (961–1017) revised and enlarged Lu Fa-yen's rhyming dictionary, titling the result the *Kuang-yun*[ap] [Expansion of Rhymes]. The latter was the best known rhyme dictionary of the Sung period. It contained 26,194 characters arranged under four classical tonal categories. Within each tone, words were further divided into rhymes and then classified according to homophonic groups. Pronunciation in *fan-ch'ieh* and meaning were included for all characters. Ch'en's dictionary was prized by Ch'ing phonologists because it faithfully preserved the phonological system of the sixth century A.D.

[x] For discussion see Chang Shih-lu, *Chung-kuo yin-yun-hsueh shih* (*hsia*) [History of Chinese Phonology, Vol. II] (Taipei: Commercial Press, 1975), pp. 261–323. See also Liang Ch'i-ch'ao, *Chung-kuo chin san-pai-nien hsueh-shu-shih* [Intellectual History of China During the Last 300 Years] (Taipei: Chung-hua shu-chü, 1955), pp. 214–23, and *Chinese Collections in the Library of Congress*, compiled by P. K. Yu (Washington, D.C.: Center for Chinese Research Materials, 3 vols., 1974), II/654–56. On the *Shuo-wen*, see Winston Lo, "Philology, An Aspect of Sung Rationalism," *Chinese Culture*, XVII, 4 (December 1976): 1–26.

Wang An-shih's[aq] (1021–86) influential *Tzu-shuo*[ar] [Explanation of Characters] represented a pivotal position in Sung philological and linguistic research. Although Wang An-shih made some effort to trace the archaic forms of characters, for the most part he attempted to reduce all graphs to words formed as ideographic compounds. Wang saw the *hui-i* rule of character formation (see Table 1 above) as the key to textual analysis. He contended that Hsu Shen's phonological derivations were arbitrary and unnecessary to understand the meaning of a character. Instead, Wang An-shih argued that by analyzing all the characters that made up a complex graph and by understanding the meaning of each component, one could determine the precise meaning of the whole.[9]

Wang An-shih's ahistorical structural approach depended on an imaginative observation of and inference from the makeup of the characters themselves. This orientation represented a clean break with the legacy of Hsu Shen's methodology, which was rooted, although at times perilously, in the historical analysis of paleography, etymology, and phonetics. Not recognizing the phonetic elements of such characters, Sung scholars often juggled the structure of the graphs in order to come up with plausible etymologies. The cumulative efforts of earlier philologists to reconstruct accurate etymologies based on historical evidence were overlooked. However, limitations in Wang's approach were recognized by scholars who dealt with characters that were formed through phonetic, not ideographic, rules. Cheng Ch'iao[as] (1104–62), for example, in a monograph on the six rules of character formation, analyzed 24,235 graphs, of which 90% were phonetic compounds, 7% ideographs, and only 3% pictographs.[10]

Renewed interest in phonology grew out of the rigorous rhyming requirements in Chinese poetics.

During the twelfth century, Chu Hsi[at] (1130–1200) and his followers emphasized the notion of *hsieh-yun*[au] [rhyming pronunciation], whereby they attempted to force the rhymes of the *Poetry* where the words no longer rhymed. Chu Hsi's approach was drawn in part from his predecessor Wu Yü's[av] (fl. ca. 1124) reconstruction of ancient pronunciation. Wu Yü, however, in his eleventh-century *Yun-pu*[aw] [Restoration of Rhymes] had tried to reconstruct the ancient pronunciation of words on the principle that the rhyme should reappear without arbitrarily emending characters. Wu divided ancient rhymes into nine categories and thereby placed the study of ancient rhymes and pronunciation on firm ground.

PHONOLOGY AS A PRECISE DISCIPLINE

Wu Yü's perspective gained increasing sophistication during the Ming dynasty through the phonetic research carried out by Cheng Hsiang[ax] and Yang Shen[ay] (1488–1559). Following Wu Yü's approach, Yang Shen attempted to reconstruct the pronunciation of the pre-Ch'in (221–207 B.C.) period by classifying ancient rhymes and examining their changes over time. The breakthrough, however, came with the 1616 publication in Nanking of Ch'en Ti's[az] (1541–1617) *Mao-shih ku-yin k'ao*[ba] [Examination of Ancient Pronunciation in the Mao Recension of the *Poetry*].[11]

With the help of Chiao Hung[bb] (1541–1620), who encouraged him to focus on the *Poetry* in order to reestablish ancient phonetics, Ch'en Ti, by means of a systematic arrangement of rhyming words, determined with a fair degree of accuracy the ancient pronunciation for several hundred rhyming words. In order to demonstrate what the ancient pronunciations were and how words originally rhymed, Ch'en listed all the instances he could gather from the *Poetry* itself, and then followed this proof with all the corroborating evidence from what he considered to be contemporary or only slightly later sources. The former he called *pen-cheng*[bc] [internal, lit., "basic," evidence] and the latter *p'ang-cheng*[bd] [external, lit., "subsidiary," evidence]. By applying a rigorous historical methodology, Ch'en Ti brought together all known instances of particular rhyme to show that they all pointed to a given reading.

[9] Winston Lo, pp. 9–10. See also Yves Hervouet (ed.), *A Sung Bibliography* (Hong Kong: Chinese University Press, 1978), pp. 55–56.

[10] K. T. Wu, "Scholarship, Book Production, and Libraries, 618–1644" (Unpublished Ph.D. dissertation, Univ. of Chicago, 1944), p. 28. See also Wong Lok Ping, "Lu Wen-ch'ao Ching-tien shih-wen Mao-shih yin-i k'ao-cheng ting-pu," [Supplementary Notes on Lu Wen-ch'ao's Evidential Analysis of the Phonetics of the Mao Poetry in (Lu Te-ming's) Explanation of the Classics], *Journal of Oriental Studies* (Hong Kong), VIII, 2 (July 1970): 289–301, and T. H. Tsien, *Written on Bamboo and Silk* (Chicago: Univ. of Chicago Press, 1962), p. 24.

[11] Chang Shih-lu, pp. 362–65, and *Ssu-k'u ch'üan-shu tsung-mu*, 41/46b, 42/27a. See also Jung Chao-tsu, *Ming-tai ssu-hsiang-shih* [History of Thought in the Ming Period] (Taipei: Ch'eng-wen Publishing Co., 1972), pp. 279–80.

Chiao Hung seems to have been acquainted with Matteo Ricci's (1552–1610) works on Latin alphabetic writing translated into Chinese. This connection has been thought by some as evidence for Western influence on Ch'en Ti's phonological research. Other contemporaries of Ch'en Ti also recognized the advantage of the Latin alphabet for the transcription of Chinese sounds. Influenced by the scientific contributions made by the Jesuits, Liu Hsien-t'ing[be] (1648–95), for example, recognized the advantages of the Latin alphabet for the transcription of sounds and the importance of Sanskrit for phonological research. The *Ssu-k'u ch'üan-shu* editors indicated that after Ricci's alphabet system was introduced, the polymath Tai Chen[bf] (1724–77) contended that it was originally plagiarized from the Chinese *fan-ch'ieh* system. This critique was part of Tai's attempt to argue that various astronomical and mathematical notions introduced from Europe were all of native origin. The editors rejected Tai's argument and pointed out that Tai had failed to realize that phonology had also become an independent specialty in Hsi-yü[bg] [the western regions].

We might note that the *fan-ch'ieh* transcription system did not give absolute pronunciation. It could only show how ancient readings were grouped homophonically and not how to reproduce what they sounded like at a given time. Absolute pronunciation, although impossible to reproduce definitively, was more closely approximated by an alphabet. An alphabet at least limited the range of possibilities. It is unclear, however, how many Ch'ing scholars had mastered an alphabetic language well enough to grasp this point.

Wu yü's and Ch'en Ti's research proved to Ch'ing scholars such as Ku Yen-wu and Chiang Yung that what had been termed "rhyming pronunciation" during the T'ang and Sung dynasties was a poor excuse for emending characters. More importantly, Ch'en Ti showed them that the ancient rhyming system could be recovered through precise analysis and research. The inferior success of Sung scholars in linguistic research was seen in large part as a result of their lack of a rigorous methodology. Ch'ing scholars recognized that the remarkable achievements of recent scholarship in phonetics were a product of the conscious application of precise methods of analysis. Evidential scholars now realized how various types of evidence could be brought to bear on phonetic transformations.[12]

Ku Yen-wu sadly noted that the *hsieh-yun* theory not only had caused ancient rhymes to be lost but, because of arbitrary emendations, had also resulted in the loss of the original text. In his *Yun-pu cheng*[bh] [Corrections to the Restoration of Rhymes] and *Yin-hsueh wu-shu*[bi] [Five Books on Ancient Pronunciation], Ku consciously picked up where Wu Yü and Ch'en Ti had left off and made further discoveries in ancient pronunciation. Extending the inquiry from the *Poetry*, Ku included the pronunciation of the other Classics as external evidence for the ancient rhyming system in the *Poetry*. He divided the rhyming system into ten major divisions. Summarizing Ku's contribution, the *Ssu-k'u ch'üan-shu* editors maintained that Ku was instrumental in "discovering the guidelines" (*fa ch'i chih*[bj]) and "definitive theories" (*ting lun*[bk]) needed for the study of ancient rhymes.[13]

It had been recognized generally by the seventeenth century that the phonetic element of each character was the decisive element in establishing its meaning. Ch'ing philologists rejected the speculative conclusions that Wang An-shih and other Sung scholars had introduced in their glosses for the meanings of ancient characters. The consensus of scholarly opinion was that the *hui-i* rule had played a very limited role in the formation of Chinese characters. The overwhelming majority of graphs had been composed on the basis of phonetic rules and not ideographic combinations. A system of analysis known as *chia-chieh-tzu*[bl] [characters formed through phonetic borrowings] was employed not only to reconstruct ancient phonology but, more importantly, to decipher the ancient meaning of characters by means of ancient phonology.

The investigation of ancient script was shown to be a hopeless proposition unless one took into account the archaic pronunciation of the characters. Bernhard Karlgren has explained:

---

[12] *Dictionary of Ming Biography* (N.Y.: Columbia Univ. Press, 1976), pp. 182–83. See also *Eminent Chinese of the*

Ch'ing Period (Taipei: Cheng-wen, 1972), pp. 233, 423–24, 522, and *Ssu-k'u ch'üan-shu tsung-mu*, 41/15a–15b. For further discussion, see Sivin, "Copernicus in China," *Colloquia Copernica* (Warsaw), II (1973): 91ff, and *Ssu-k'u ch'üan-shu tsung-mu*, 42/32b–33b. I would like to thank Nathan Sivin of the University of Pennsylvania for his information and help on these issues.

[13] Chang Shih-lu, pp. 263–67. See also *Ssu-k'u ch'üan-shu tsung-mu*, 42/42a–43a, 44/49a, and Ma Yü-tsao, "Tai Tung-yuan tui-yü ku-yin-hsueh te kung-hsien" [Tai Chen's Contribution to the Study of Ancient Pronunciation], *Kuo-hsueh chi-k'an*, II, 2 (December 1929): 207–08.

It was the great phonetic similarity, sometimes homo-
phony of large groups of monosyllabic words that
gave rise to the principle of phonetic loans (*chia-
chieh*), the character for one word being applied, as a
loan, to a totally different word that was identical or
similar in sound, a principle which in its turn, by the
elucidating addition of determinatives ("radicals"), led
to the creation of the great, even dominating category
of characters known as *hsieh-sheng*, phonetic com-
pounds, consisting of one "Radical" and one "Pho-
netic."

Although phonetic compounds formed the majority
of characters in Ch'in and Han times, during the
Chou dynasty (1122–221 B.C.) borrowed characters
had been very common and phonetic compounds
somewhat rarer. That is, characters were borrowed
without adding radicals, or sometimes by adding
radicals that did not ultimately become standard. If
the ancient pronunciation of a character could be
reconstructed, its ancient (and not its present) meaning
could be restored—hence the centrality of phonetic
research in Ch'ing philological studies. Phonology
became a systematic vehicle to "restore the past."

Ch'ing evidential scholars gradually developed a
more sophisticated notion of how the phonetic element
operated in the formation of complex characters. By
introducing the notion of *yu-wen*[bm] [the right side of a
graph (theory)], scholars were able to demonstrate
that the right-hand side of a character, which according
to the simple view of the phonetic element was sup-
posed to supply only the sound of the character, also
provided a clue to its meaning, although not in the
same way that Wang An-shih had argued (e.g., *chien*[bn]
means "small," and hence *ch'ien*[bo] means "shallow
water," *ch'ien*[bp] means "small metals," i.e., copper
coins, and similarly *chien*[bq] means "small note," i.e.,
letter, etc.).[14]

In the eighteenth century, Chiang Yung took issue
with some elements in Ku Yen-wu's phonological
research. Chiang carefully examined the more than
three hundred poems in the *Poetry* and compared his

findings with the pronunciation used during the Chou
and Ch'in dynasties; he then took into account more
recent examples of pronunciation and rhyme. With a
wider body of Chou and Ch'in dynasty data to build
on, Chiang Yung was able to increase Ku Yen-wu's
ten divisions of rhymes to thirteen. The *Ssu-k'u
ch'üan-shu* editors pointed out that Chiang's contribu-
tions brought the *t'iao-li*[br] [systematic organization] of
ancient rhymes to its most precise form until later
improvements.[15]

In his analysis of the relation of the four tones to
ancient pronunciation, Chiang Yung carefully noted
Ku Yen-wu's claim that Confucius has transmitted the
Changes using the dialect of his own time and place.
Following up this point, Chiang recognized that tonal
and phonetic transformations depended on place and
individual variations, in addition to undergoing the
vicissitudes of time. Having historicized pronunciation,
Chiang then transformed Ku Yen-wu's overly rigid
notions of phonetic changes. Arguing that in antiquity
the number of written characters, i.e., ideographs and
pictographs, was limited, whereas the number of
spoken words, i.e., sounds referring to things, objects,
concepts, etc., was unlimited, Chiang theorized that
all characters had had sounds attached to them but
many sounds had not yet had characters devised for
them. Chiang saw this situation as the fundamental
linguistic, dare one say transformative, dynamic where-
by, through a system of borrowed characters, oral
discourse generated a phonetically derived written
language. Chiang's recognition of the priority of the
spoken language explained why so few characters
were pictographs and ideographs. The same phenom-
enon can be discerned in the transliteration of Sanskrit
names and words from India in medieval China and
from Europe (e.g., *Ou-lo-pa*[bs] for "Europe") in more
recent centuries.[16]

Although Chiang accepted much of Ku Yen-wu's
analysis, he rejected its underlying intentions. Ku had
seen language as a moral, social, and political tool. If

---

[14] Bernhard Karlgren, *Grammata Serica* (Taipei: Ch'eng-
wen Reprint, 1966), p. 1, and "On the Script of the Chou
Dynasty," *Bulletin of the Museum of Far Eastern Antiquities*,
8 (1936): 177–78. See Noel Barnard, "The Nature of the
Ch'in 'Reform of the Script' as Reflected in Archaeological
Documents Excavated Under Control," in *Ancient China:
Studies in Civilization*, edited by David Roy and T. H. Tsien
(Hong Kong: Chinese Univ. Press, 1978), pp. 181–213, and

Winston Lo, "Philology," pp. 9–12. It should also be pointed
out that rhymes were used extensively in classification
procedures, e.g., the *P'ei-wen yun-fu* [Thesaurus of Rhymes].
Wang Hui-tsu[bz] (1731–1807), for example, compiled an index
to all biographies in the Dynastic Histories and arranged the
proper names under the prevailing syllabary of rhymes. See
Eminent Chinese of the Ch'ing Period, p. 825.

[15] *Ssu-k'u ch'üan-shu tsung-mu*, 42/47b–52a, and Ma Yü-
tsao, "Tai Tung-yuan," pp. 208–09.

[16] *Ssu-k'u ch'üan-shu tsung-mu*, 44/50a–50b.

the ancient language employed by the sage-kings could be reconstructed, then Ku thought the ideal institutions and manners of antiquity could be restored as well. Chiang, however, noted that although both he and Ku had made considerable headway in reconstructing ancient pronunciation, it would be impossible to restore fully the ancient language. Chiang's historicist analysis thus prevented him from accepting Ku Yen-wu's ideal vision of language as a tool to revive the past. The tie between fact and value was severed from its classical moorings.[17]

Further research carried out in the eighteenth century brought phonology to the state of a rigorous discipline. Tuan Yü-ts'ai[bt] (1735–1815) employed the *Shuo-wen* as a systematic tool for dividing rhymes into more precise categories. Adding for new divisions, Tuan increased the number of Chiang Yung's divisions from thirteen to seventeen. K'ung Kuang-sen[bu] (1752–86), a student of Tai Chen, and Liu Feng-lu[by] (1776–1829) divided ancient rhymes into eighteen and twenty-six divisions respectively. Analysis of rhymes became more and more refined.

Although Tuan Yü-ts'ai was Tai Chen's disciple, Tuan had published a number of treatises on phonetics while Tai was still carrying out research on the subject. In a famous reply to Tuan, Tai Chen rejected Tuan's seventeen divisions and explained why he had increased the number of rhyming divisions first to twenty and then to twenty-five. Summarizing Ku Yen-wu's and Chiang Yung's research, Tai advised Tuan Yü-ts'ai on methodology. Tai saw his own research as an attempt to add to the growing precision of phonological studies. He wrote: "Master Ku [Yen-wu] pioneered the study of ancient pronunciation. Mr. Chiang [Yung] and I merely have continued [Ku's research] and added precision to it."[18]

Similar patterns of development occurred in the study of tones and their historical changes. Both Tai

Chen and Ch'ien Ta-hsin made important contributions to this field. Kinoshita Tetsuya recently has contended that Tai Chen focused his phonetic research not on ancient pronunciation per se, to which he nonetheless made important contributions, but rather on *sheng-lei*[bw] [types of sounds] that were the basis of both ancient and modern pronunciation. Seeing remarkable resemblance between ancient and modern rhymes, Tai rejected Ch'en Ti's and Ku Yen-wu's absolute bifurcation between the two. Rather than just delimit ancient and modern rhymes, Tai Chen employed the classification of rhyming words to discuss language at a higher level of linguistic significance. Tai contended that although there were changes in the pronunciation of words over time, the types of sounds remained remarkably constant. This phenomenon was due, Tai thought, to the natural limitations of the human voice (*tzu-jan chih chieh-hsien*[bx]) that made the production of only certain sounds possible. Pronunciation then was dependent not only on place, time and person, it was also dependent on the structural nature of the human voice. These latter elements were shared by ancient and modern speakers.

Phonological research in the late eighteenth century was turning away from the almost completely reconstructed field of ancient rhymes toward the relation of tones to pronunciation. The nature of sound production itself became an object of inquiry, and it was in this context that Ch'ien Ta-hsin's research on labiodentals was understood. Occuring in a section entitled "Ku wu ch'ing ch'un-yin shuo"[by] [The Theory That the Ancients Lacked Labiodentals], Ch'ien was extending Tai's analysis into sophisticated new directions.

Because the reconstruction of ancient Chinese phonology had been so closely tied to ancient rhyming criteria, some Chinese scholars had focused on reconstructing archaic finals. Work on archaic initials by Ch'ien Ta-hsin and others in the late eighteenth century indicates that such studies were also making considerable progress before Bernhard Karlgren initiated his pioneering studies on archaic initials early this century.[19]

---

[17] Chang Shih-lu, p. 268, and *Ssu-k'u ch'üan-shu tsung-mu*, 42/45a–45b.

[18] *Tai Chen wen-chi* [Tai Chen's Essays] (Hong Kong: Chung-hua shu-chü, 1961), pp. 68, 75–77, and Chang Shih-lu, pp. 270–77. P'i Hsi-jui, *Ching-hsueh li-shih* [History of Classical Studies] (Hong Kong: Chung-hua shu-chü, 1961), p. 331, also discusses this research. Wang Nien-sun[ca] divided ancient rhymes into twenty-one divisions. See also Chou Yü-t'ung's notes on pp. 338–40 of P'i's book. Bernhard Karlgren bases his research on the rhyme scheme in the *Poetry* on Tuan Yü-ts'ai and other Ch'ing philologists. See *Grammata Serica*, p. 90.

---

[19] *Tai Chen wen-chi*, pp. 91–92, and Ma Yü-tsao, pp. 210–20, 227–28, 235. See also Chang Shih-lu, pp. 272–77, 281–94, *Eminent Chinese of the Ch'ing Period*, pp. 829–30, and Kinoshita Tetsuya, "Tai Shin no ongaku" [Tai Chen's Phonology], *Tōhōgaku*, 58 (July 1979): 128–42. Ch'ien demonstrated that all labiodentals were read as voiced labials in antiquity. This finding indicated that the ancients did not

We overlook at our peril the development of the systematic study of language in China. As in the West, the history of linguistics in China presents an interesting analogy to the evolution of empirical methods of verification in the natural sciences. The development of language study and the emergence of historical and comparative linguistics are not uniquely Western achievements. Ch'ing evidential scholars in particular established the foundations of modern Chinese linguistics. We can still see traces of that

have a sound corresponding to labiodentals. See *Huang-Ch'ing ching-chieh* [Ch'ing Exegesis of the Classics], edited by Juan Yuan and others (Taipei: Fu-hsing Reprint, 20 vols., 1961), 441/10b. For a critique of the pervasive impact that the traditional Chinese phonemic bias has had on contemporary Chinese linguistics, see Paul Kratochvil, "Traditions in Chinese Linguistics Fact or Fiction?," *Cahiers de linguistique Asie Orientale*, 1 (March 1977): 17–30.

influence in present-day Chinese linguistics.[20]

[20] Tsu-lin Mei and Jerry Norman indicate that based on recent scholarship there are seven types of acceptable evidence that can be employed to reconstruct Old Chinese: (1) rhymed texts; (2) paleography; (3) textual evidence; (4) dialect evidence; (5) old loan words in Thai and Vietnamese; (6) comparison with Tibeto-Burman languages; (7) transcriptions of foreign names. Ch'ing evidential scholars made extensive use of the first four types. It remains to be considered how aware they were of the latter three. See Mei and Norman, "The Numeral 'Six' in Old Chinese," in *Studies in General and Oriental Linguistics*, edited by Roman Jacobson and Shigeo Kawamoto (Tokyo: TEC Co., 1970), p. 451. On linguistic research in the West, see John Green, "The History of Science and the History of Linguistics," in *Studies in the History of Linguistics*, edited by Dell Hymes (Bloomington: Indiana Univ. Press, 1974), pp. 487–501, and Francis Dinneen, *An Introduction to General Linguistics* (N.Y.: Holt, Rinehart, and Winston, Inc., 1967), pp. 70–191.

GLOSSARY

a	顧炎武	z	日	ay	楊慎	bx	自然之節限
b	歸莊	aa	月	az	陳第	by	古無輕唇音說
c	考證	ab	明	ba	毛詩古音考	bz	注輝祖
d	江永	ac	轉注	bb	焦竑	ca	王念孫
e	四庫全書	ad	布	bc	本證		
f	錢大昕	ae	假借	bd	旁證		
g	輕唇音	af	萬夷	be	劉獻廷		
h	發前人所未發	ag	周	bf	戴震		
i	許慎	ah	游	bg	西域		
j	說文解字	ai	反切	bh	韻補 正		
k	部首	aj	陸法言	bi	音學五書		
l	諧聲	ak	切韻	bj	發其論指		
m	六書	al	陸德 明	bk	定假借字		
n	鄭玄	am	經典釋文	bl	古文		
o	指事	an	陳彭年	bm	戈		
p	上下	ao	廣韻	bn	淺		
q		ap	王安石	bo	錢箋		
r	象形	aq	字說	bp	條 理 巴		
s	山	ar	鄭樵	bq	歐 選 裁 森		
t	諧聲	as	朱熹韻補	br	段 王廣祿		
u	聲	at	叶韻	bs	孔 逢類		
v	江	au	吳韻	bt	劉聲		
w		av	鄭	bu			
x	工	aw		bv			
y	會意	ax		bw			