were spoken. If the communists wished to promote their language program to combat illiteracy, they had to address that constituency.[58] As is well known, the Gwoyeu Romatzyh and Latinxua Sin Wenz movements strongly opposed one another.

As the modern Chinese-language reform embarked on the parallel path of alphabetization, however, a new horizon for conflict was about to open up. While it is commonly held that China's inevitable course to Romanize resulted from comparing Chinese and Western writing systems, an intermediary factor also played a crucial role.[59] Wu Zhihui, a proponent of Esperanto and founding editor of the Paris-based anarchist journal *New Century (Xin shiji)*, had already foreseen the importance of unifying the dialectal tongues in standard pronunciation in 1909. But it was not language per se but the power of standardization that he saw. The advent of a new technological age of mechanized writing impressed upon him as the greatest challenge to Chinese writing: "Not only does the Chinese script lack sound, it is also not amenable to printing or indexing . . . western script enjoys one great advantage that the Chinese language does not have. . . . A typewriter can be used with western scripts, but not with the Chinese language."[60]

Wu's expressed wish found an unexpected response in 1940s America. Outside of China, linguistic territories were being re-zoned according to a different kind of escalation, as Chinese intellectuals carried their projects into a foreign context, competing against alphabetic writing on the latter's own turf and with technology. Without dwelling on the familiar terrain of Romanization in the 1920s and 1930s, the next chapter turns to a different language war, where the question of the Chinese language officially enters the domain of alphabetic technology under the Cold War political geography.

3

Lin Yutang's Typewriter

> Typewriters are now, it is said, made for the English, French, German, Spanish, Bohemian, Russian, Danish, Swedish, Portuguese and Italian languages. It is only with the Chinese, with its thirty thousand characters, that science is powerless.
>
> Isaac Pitman's *The Phonetic Journal* (1893)

> That age is no more. I entertain the hope that my invention of the Chinese typewriter will play its role in modernizing the Chinese business office and ushering in the new industrial era for China.
>
> Lin Yutang, "China's War on Illiteracy," *The Rotarian* (November 1946)

The late Qing Dynasty's concern that the Chinese writing system—in which "science is powerless"—was not conducive to modern thinking took a very different turn in the ensuing decades. On April 17, 1946, the Chinese writer Lin Yutang filed an application with the U.S. Patent Office for a Chinese-language typewriter. The design, which had taken him about thirty years to conceive and build, realized the vision of the late Qing script reformers in typographic technology. (See Figure 9.) His venture relied on an assemblage of different means of production from China, Europe, and the United States. He put his idea to the test in 1927 by conducting an empirical study using an instruction manual on general mechanics and an English-language typewriter. In 1931, he spent time working with engineers in England, and subsequently brought back an early template from Xiamen. The casting mold for the type set was customized in New York's Chinatown, and Lin found a small factory in the suburbs to make the special parts for the ideographic writing machine. An Italian engineer helped him resolve

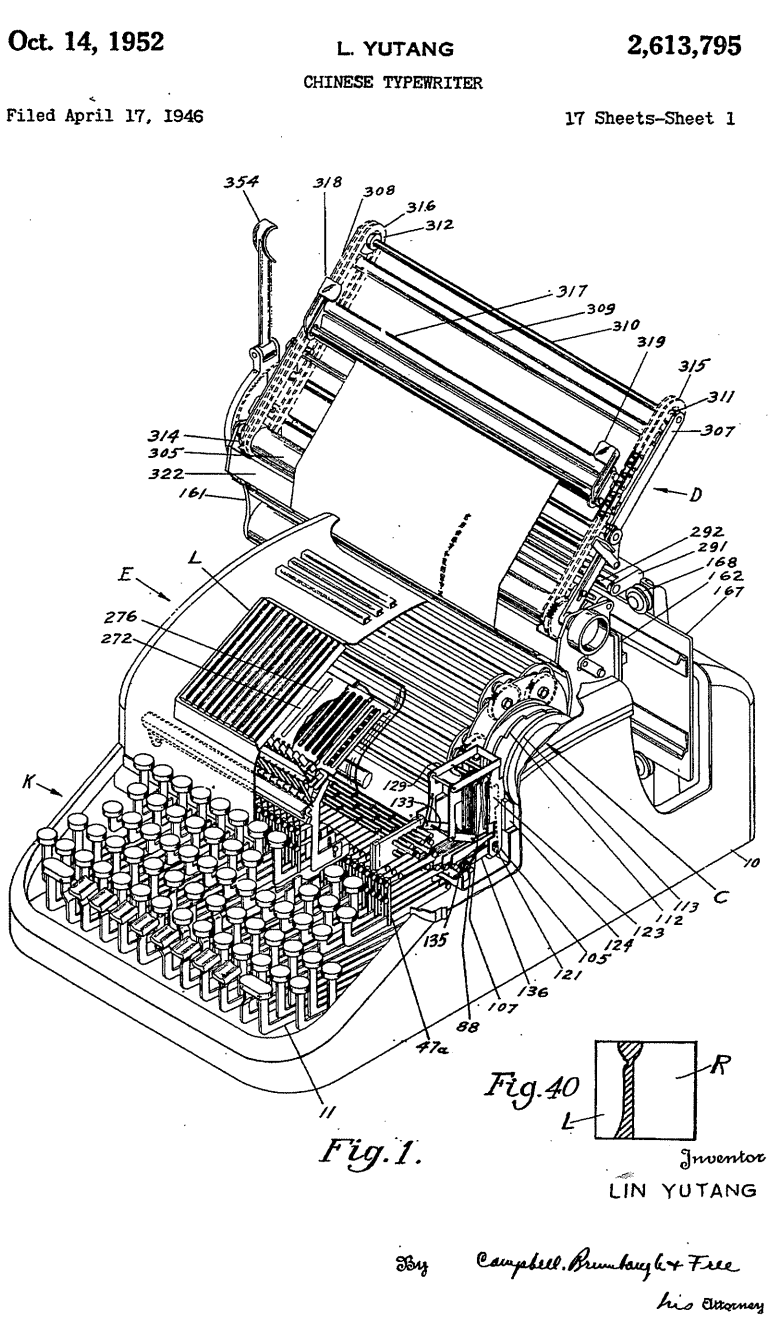

FIGURE 9. Lin Yutang, Chinese Typewriter, U.S. Patent 2,613,795, October 14, 1952.

design and mechanical issues during the production stage; this collaboration later ended unpleasantly in disputes over intellectual ownership.[1]

Whereas Lin's literary success is well known, his technological experiments have won only passing mention. By the mid-twentieth century, efforts to modernize the Chinese language were well under way. The new forms of its institutionalization, however, were far from uniform. In a hitherto unexamined history, Lin's typewriter played a breakthrough role in this process toward standardized mechanization and dissemination on an international scale. The stage was set by the language modernization movement in China on the one hand, and the early political topography of the Cold War on the other.

Historically, the perceived deficiency of the ideograph has reinforced, for many Western observers, the myth of alphabetism as a superior and more civilized form of script. As Haun Saussy shows in his study of the earlier phase of European and American linguists' interest in the ideogram, the very ways in which the Chinese language was presented as a specimen set it up to fail the terms of comparison.[2] Lin's machine, however, was about to fundamentally revise these terms of asymmetry. Its design introduced a new linguistic encounter that set the typewriter to Chinese radicals rather than alphabetic keys. At a critical juncture between the age of mechanization and the computer age in the postwar period, Lin's technological breakthrough joined a global race toward language dominance, intersecting the propagation of C. K. Ogden and I. A. Richards' Basic English in China and the new research on machine translation in the United States. Lin developed a Chinese writing machine that served as a prototype for automatic multilingual decoding. In the process, a then unimaginable history of how the Chinese ideographs intercepted alphabetic writing unfolded.

Background

Being on the cutting edge was an expensive venture. To finance his typewriter, Lin exhausted nearly all of the royalties from his English-language bestsellers. From 1930 onward, he had authored numerous nonfiction and fiction works and had introduced Chinese culture and civilization to the Anglophone audience. His commercial success in the United States further extended his reputation as one of modern China's best essayists. Nearly all of his English-language works were published by the John Day Company through Pearl S. Buck and her husband, Richard Walsh, both of whom were

instrumental in persuading Lin to return to the United States as a writer in 1936. Their friendship did not survive the typewriter. The 14-inch-by-19-inch apparatus almost bankrupted Lin, and he tried to borrow money from Buck. She refused, and this reputedly precipitated their much-publicized falling out. Against all odds, Lin's patent was finally approved in October 1952.[3]

The invention of a Chinese-language typewriter had been a long-standing challenge. Before Lin a number of people had tried, with spotty success, to launch similar machines.[4] As early as 1888, the missionary publication *The Chinese Recorder* enthusiastically followed the Presbyterian missionary Devello Zelotos Sheffield's development of such a machine, while a contemporary of Lin's, Gao Zhongqin, unveiled his own *"Tienhwa" (Dianhua)* electro-automatic Chinese typewriter just two months after Lin filed his patent application.[5] Though not the first Chinese-language typewriter, Lin's writing machine importantly anticipated the eventual digital globalization of the Chinese ideograph. Details of his model served as a main reference in subsequent developments in electronic writing: multilingual electric typewriters, Chinese-language input in data processing, the encoding of Chinese characters into unique numerical codes for storage and transmission, and electronic software that uses a phonetic version of Chinese. Even the interface presentation of current-day Chinese language software is still reminiscent of his "magic viewer," as will be discussed. Most recently, the digital encoding of the Chinese ideograph has come full circle, with new patented computer software that refine the methods of phonetic input by disambiguating homophones in the ideographic symbols of the user interface.[6] On the surface, the ideograph has not changed. It appears with just as many strokes and in the same customary tetragraphic space. Yet the cumulative process of its stroke orders, once the torturous mnemonic tasks of school children and foreigners, has been largely bypassed.

One might easily overlook the importance of convenience, given that a different conceptual hype has dominated theories of mechanized writing. Martin Heidegger expressed his dismay that the typographic print "tears writing from the essential realm of the hand."[7] From Friedrich Nietzsche's mishaps with the Malling Hansen typewriter to Friedrich Kittler's affirmation of the machine's inauguration of a media age in which "writing and soul" had fallen apart, the machine threatened to end the role of personal touch.[8] Technology was reciprocally bound with a willful destruction of the human and natural world that occasioned much of the crisis and innovation in twentieth-century western thought.

Lin's original interest in the typewriter, however, departs sharply from this set of metaphysical reflections on the age of technology. Setting the Chinese character to a new type was intended to give China a weighted entry into a world of polarized Eastern and Western influences. At the same time, the attention being paid to the Chinese language's outward access, through a parallel shift, subsumed the internal differences of tongues under a nationalizing and standardizing imperative. Measures of national status came to rely on a corresponding language as a basis for cultural distinction. Early on, Lin was already cognizant of this subtle power differential between languages and tongues. While he was still studying the mechanics of the machine, he reported a personal episode that underscored the indigenous linguistic landscape against which his idea for a Chinese-language typewriter became a new bid for global status. It involved a peculiar linguistic incident surrounding an English-language typewriter that he owned. In the essay "Ah Fong, My Houseboy," Lin remembers how a young servant once awed him with an unexpected show of genius:

> Then one day, the typewriter went out of commission. I spent two hours repairing it, but failed. I scolded [Ah Fong] for monkeying with it. He did not reply. But in the afternoon, I was out, and when I came back, he told me quietly, "Master, the machine is repaired." After that, I respected him as a human brother *(tongbao)*. . . . In many ways he is indispensable. He can answer telephone calls and scold the callers in English, Mandarin, Shanghai, Anhwei and Amoy dialects, this last being a language which few outsiders have ever the courage to learn or the luck to succeed in learning. How he picked up the English phrases and springs them upon me as a surprise with such perfect accent is a secret between himself and his Maker. He says "waiterminit" and not the "wai-t-a-meenyoo-t" of the Chinese college students."[9]

Ah Fong already had his eye on the typewriter, Lin recalls, the day he came into Lin's household at the age of sixteen. Making excuses to clean his study, Ah Fong would instead tinker with the clumsy machine for hours. What endeared him to Lin, however, was not only his ability to fix things but also his talent for feigning fluency in a foreign language he hardly knew. His unexpected ease with the English language relates directly to his gifted touch with the typewriter.[10] At the same time, the range of regional tongues that Ah Fong also commanded equally struck Lin. The two different kinds

of language skills impressed him for different reasons. Ah Fong's nimbleness with the English-language typewriter earned him Lin's respect as an equal, while his mastery of multiple Chinese dialects was simply noted as a native trait, something he was born into. Implicitly, Lin invoked a certain privilege in knowing English. It is Ah Fong's ability to put on the semblance of nativity in a foreign language that pleasantly surprised him. Disguising the nonnative, broken articulation of "wai-t-a-meenyoo-t" with a fluidly uttered "waiterminit," Ah Fong was able to turn linguistic nativity into an occasion of performance. His perfectly mastered accent is as unexpected as his ability to crack the machine.

Though this admiration is coupled with Lin's obvious condescension toward his hired help ("My house-boy is a real 'boy,' not only in the colonial, but also physiological sense of the word"), the recollection cues us to something important about the linguistic setting of his idea of a Chinese machine.[11] Lin's invention was a turn to typographic print against a still-varied oral practice of the modern Chinese language. There were the unschooled mother tongues of the everyday on the one hand, and the growing reality of linguistic intercourse on the scale of international power on the other. English does not appear in this scene merely as an alphabetic typescript. It is an example of a language of prestige. This emergent awareness holds in view a new prize, as the contest over the future of the modern Chinese language came to merge with the development of a global lingua franca.

Basic English, Lin Yutang, and Language Wars

Though the Western fascination with the Chinese language dates back to John Wilkins' seventeenth-century Real Character (a logic-based script with both written and sound representations) and John Webb's rediscovery of Chinese as the pre-Babelian "lingua franca," the interest played a new role around the mid-twentieth century.[12] Renewed tensions from class warfare and capitalist imperialism in the world inspired Western radical intellectuals to theorize about social change on every scale. In the same way that Henri Lefebvre saw a special cue to the organizing principle of spatiality in the aesthetic hints of the Japanese ideogram, Marshall McLuhan extrapolated a menacing premonition from the Chinese character.[13] His theory about alphabetic writing and the coming warfare in technology refetishizes, and also distorts, the Chinese ideogram as a dramatic alternative. His erroneous views about the "pictorial" quality of the Chinese language notwithstanding, I take him as a useful example of the

growing partnership between literacy, the technology of writing, and global language wars. McLuhan's personal relation to his mentor at Cambridge University, I. A. Richards, reveals the extent to which such a network of complicity supported world literacy projects such as Basic English.[14] The Cold War furnished a new occasion for dressing old biases in new garb. Partaking in discussions on the theories of communication and social transformations, McLuhan exemplifies the kind of interpretive lens in relation to which Lin's linguistic views and, subsequently, his typewriter, posed an important counterthesis.

While crediting McLuhan with relating technology explicitly to the historical context in which it is embedded, Marjorie Ferguson notes his "monocausal, mediacentric" focus, made possible by an "*a*historial exaggeration of the order of the invention of printing" (original emphasis).[15] Manual Castells, despite a similar recognition of McLuhan's "unrestrained use of hyperbole," underscores his foresight in detailing a new age of mass media that reconfigures the rational order of alphabetic thinking.[16] But the superiority of alphabetic thinking was not McLuhan's own invention. The influence of classicist Eric Havelock, whom McLuhan knew at Cambridge University, and his views on the innate rational, superior powers of the Greek alphabet is discernible.[17] Taking Havelock's cue, McLuhan writes in *The Gutenberg Galaxy:*

> Mere writing, however, has not the peculiar power of the phonetic technology to detribalize man. Given the phonetic alphabet with its abstraction of meaning from sound and the translation of sound into a visual code . . . no pictographic or ideogrammic or hieroglyphic mode of writing has the detribalizing power of the phonetic alphabet. No other kind of writing save the phonetic has ever translated man out of the possessive world of total interdependence and interrelation that is the auditory network.[18]

Alphabetic writing carries a unique power that extricates man from a dependency on the ear, thereby dissociating him from the reliance on sense. Such a dissociation from the web of the senses comes naturally to the alphabet as proof of its potential for abstraction. The Chinese character, on the other hand, strikes McLuhan quite differently when he contrasts it in the following way: "With the ideograph we begin to move from the reverential to the referential. . . . In contrast to phonetic letters, the ideograph is a vortex that responds to lines of force. It is a mask of corporate energy."[19] Robert Cavell observes that McLuhan uses the ideograph as an occasion to rethink

the acoustic and visual space in orality and literacy.[20] Vortex, for McLuhan, has the specific meaning of identifying pattern within flux. The ideogram, in other words, enacts a certain gravitational force on writing itself. How McLuhan actually identifies this compositional tendency is a rather mystifying moment in his exposition. More revealingly, however, is that the movement, which he thinks is unique to the ideograph, points to a palpably rooted, nativist bondage. The ideograph is physically governed by an inner referentiality, whereby the picture is the word and the word is the picture. This tendency, to his mind, is distinctly tribal, bound to an ethnic place. This makes the ideograph inherently resistant, if not hostile, to the lineal and rational extensions that are reserved for alphabetic writing.

While disclaiming an interest in assigning values of cultural superiority to Chinese or Western cultures in the comparison, McLuhan is less subtle when he echoes Ernest Fenellosa and Sergei Einsenstein by calling "pictorial writing" an "animated cartoon."[21] To be fair, McLuhan began his project by thinking about orality and literacy, the subject of his Ph.D. thesis at Cambridge University.[22] This led him to contemplate the potential of the Chinese ideogram "to stand midway between the extremes of our abstract written tradition and the plenary oral tradition with its stress on speech as gesture and gesture as 'phatic communication.'"[23] The ideogram was invested with the potential to transcend its relation to the alphabet. It occupies a medial position between the opposite ends of print mechanization and pictorial technology. This possible theoretical venue, however, was not what immediately prompted McLuhan's interest. At the time, he was influenced by more recent events in other parts of the world, events that also gave inspiration to his emphasis on mediality. In *Understanding Media: The Extensions of Man,* he comments, on the growing stakes in alphabetic technology: "With literacy now about to hybridize the cultures of the Chinese, the Indians, and the Africans, we are about to experience such a release of human power and aggressive violence as makes the previous history of phonetic alphabet technology seem quite tame . . . for the electric implosion now brings oral and tribal ear-culture to the literate West."[24]

The escalated tension underlying the real clash stems, as it turns out, not from the difference between phonetic and nonphonetic writings but from the new culture wars waged in the medium of writing itself. In the twentieth century and beyond, as McLuhan saw it, the "retribalization" following the uprooting of cultures from colonization will be forged in the alphabetic

medium that has the capacity to reconfigure visual and acoustic space. However, between the "literate West" and the tribal rest of the world, the prospect of a shared alphabetic script would bring unprecedented conflict instead of harmony. Alphabetism folds into literary governance on a global scale, reaching beyond the letter in advancing a universal language for both literature and literacy. A translation of the ideograph into the alphabet, in other words, far from stages a bloodless technological event. The alphabetic medium dictates the space in which all languages, oral or written, pictographic or nonalphabetic, have to register in order to be "literate," legible, and intelligible. World literacy becomes the exclusive capacity of alphabetism. It fully anticipates and subordinates whatever hybridity it hosts to the prospect of one universal, alphabet-governed language. Between the "literate West" and tribalism, phonetic script is, in short, the gold standard of global literacy.

Why was the scenario of a civilizational strife of such great interest to McLuhan's theory of media? His attempt to transcend the dichotomy between orality and literacy with reference to a network of different medial technology did not necessarily require an exaggerated ethnic tribalization to make the point. Yet, from his contemporary angle, an expansion of conflict in the postwar order loomed on the horizon of intellectual theorization. His engagement with language wars as part of the geographical enlargement and other ramifications of the Cold War provides a clear clue. At the end of the section on "The Written Word" in *Understanding Media: The Extensions of Man,* published in 1964, McLuhan makes a revealing reference to contemporary developments in China:

> Today, the effort of the Chinese to use our phonetic letters to translate their language has run into special problems in the wide tonal variations and meanings of similar sounds. This has led to the practice of fragmenting Chinese monosyllables into polysyllables in order to eliminate tonal ambiguity. The Western phonetic alphabet is now at work transforming the central auditory features of the Chinese language and culture in order that China can also develop the lineal and visual patterns that give central unity and aggregate power to Western work and organization. . . .[25]

At the time of McLuhan's writing, the People's Republic of China had already begun implementing a series of language standardizations, including the adoption of the current-day international standard Romanization system,

pinyin, in 1958. Pinyin, however, occupied a relatively small focus in Chinese-language reform in the 1950s and 1960s. Alphabetic Romanization was certainly not designed with the goal of replacing the existing Chinese writing system. It received many fewer resources for its development than did the primary project of standardizing putonghua, or common language, as well as the proposals for simplified written characters from 1955 to 1964.

Nonetheless, McLuhan saw a greater change afoot. That the Western phonetic alphabet prompted the Chinese ideograph to develop the same lineal and visual patterns through Romanization indicated a civilizational intervention propelling the ideograph into an entirely different network of signification. McLuhan took his cue from the political geography of the Cold War, in which a preoccupation with espionage and decodification was radicalized in the infiltration of writing itself. Communist China loomed as a subsidiary but real threat, and the future of its language was as much a question of literacy as it was an extension of its sphere of influence. Thus, the fate of alphabetic writing in China weighed on his mind. In a personal letter dated July 12, 1968, McLuhan continued to speculate on the question: "Is it your impression that Red China expects to attain the effects of Western literacy by the universalizing of Chinese literacy in their educational program? Naturally, the iconic and tactile quality of the Chinese character keeps the Chinese entirely unacquainted with visual and continuous or connected space."[26] One detects an ambivalent tone in McLuhan's concern as to whether China should have access to the benefits of Western literacy. More revealing was the background of the person from whom he sought advice. The letter was addressed to his former professor at Cambridge University, I. A. Richards, the cofounder of Basic English.

McLuhan's concern with the medium of China's literacy merges with the premise of the global mission of English. The question of alphabetizing Chinese was whether to use not just any alphabetic language but the English language, in particular, as the model. McLuhan could have just as well been speaking of turning Chinese into an English dialect, as his perception of the Chinese language's impoverishment in the realm of visual space assumes a deficiency in logic rather than a difference in culture. The connection he makes between technological war and language war draws questions of literacy, education, and global English into a new antagonism. Lin's propagation of the Chinese language, discussed later in this chapter, makes a similar claim on globality. That McLuhan has often been dismissed for his

outlandish remarks on the Chinese language is perhaps less interesting than how he was not alone in investing in a pending civilizational showdown between global languages. Before returning to examine the Chinese typewriter in this context of escalation, one needs to understand Lin's role in Richards' failed Basic English project in China.[27]

Basic (British American Scientific International Commercial) English was one of the earlier global English movements of the twentieth century. Together with C. K. Ogden, Richards promoted a new international auxiliary language intended to facilitate the ease of learning English for non-English speakers. Its founders claimed an advantage over artificial universal languages, as Basic English was a subset of a natural language that did not require additional diacritical marks or a confusing number of rules. Praised by Arthur Mayhew, a mastermind behind the British colonial education administration, as "English without tears," Basic purported to shorten schoolchildren's misery as well as that of the nonnative colonials. It was intended as a practical alternative to literary or Standard English for purposes of communication, commerce, and governance. It was also proposed as "an adequate channel through which the world's great literature—the Bible, Homer, Plato, Mencius, Shakespeare, or Tolstoy—could be presented to all peoples whether they had a literature of their own or not."[28]

Despite the initial optimism that Basic English may be used for literature, the selection of the Basic vocabulary ended up having to disqualify words with chiefly metaphorical value and technical abstruseness. The plan was to have simple words that can be combined in different ways to express more complicated ideas. While an educated vocabulary for the average Englishman was ten thousand words at this time, only one thousand were used 90 percent of the time. Envisioned as a universally accessible language, Basic dispensed with phonetic ambiguities and kept to a core vocabulary of 850 words. Ogden boasted of the fact that all of the 850 words can be written on "about three-quarters of the space on the back of an ordinary sheet of business notepaper."[29] Basic vocabulary can also include supplementary vocabulary lists, customized for local needs in places like India.[30]

Contrary to what H. G. Wells foretold in his 1933 novel *The Shape of Things to Come,* as the future world lingua franca enforced with an authoritarian hand, Basic was said to have met its demise in China.[31] When Richards returned from his first visit to Beijing in 1931, Ogden had just worked

out the schematics of Basic English. The two colleagues had explored the idea through a prior joint publication, *The Meaning of Meaning,* which was an early foray into the problem of signs in an attempt to extract real definitions from symbolic metaphorical language.[32] Richards had a new revelation after visiting China, partly spurred by the negative reception of his translation of Mencius:[33] "I felt that I had realized too deeply ever to forget what extreme dangers lay for the future of mankind in the miscomprehensions that were active between the Western world, our tradition, and the Chinese tradition, miscomprehensions of such depth and scale between China and the West."[34]

He took on the project of propagating the learning of Basic in China and continued to refine his methods from the 1930s until his last lecture tour there in 1979, shortly before his death. During that time, he founded the Orthological Institute in Beijing and taught English literature at Tsinghua University. His direct involvement with spreading Basic English in China began when he persuaded David H. Stevens, then director of the Rockefeller Center's Humanities Program, to allot additional funds for teaching projects under the London-based Orthological Institute in Asia. He returned to China in 1933 to oversee the institute's branch in Beijing and published *A First Book of English for Chinese Learners* in 1938.[35] It is commonly held that the outbreak of the Sino-Japanese War prematurely ended the Basic English movement.[36] Other factors, however, played an important role. Apart from competing with other artificial languages in Europe at the time, Basic English found itself amid a competitive and diverse linguistic landscape in China. In the 1930s, other Romanization schemes and artificial language such as Esperanto, Gwoyeu Romatzyh, and the International Phonetic Alphabet were proposed or already legislated.

The force of opposition, moreover, did not come only from the competing language schemes. On Richards's first arrival in Beijing with his wife Dorothea Pilley Richards in 1929, an American colleague greeted them. Raymond Duloy Jameson had been teaching English literature in the Western Languages Department at Tsinghua University. Jameson forged a close friendship with Richards, learning from and subsequently teaching Richards' linguistic and pedagogic views. When Richards returned in 1936 to oversee the Orthological Institute, Jameson had been busy paving the way, initiating a program on teaching Basic English at various schools and universities. The support for Basic English, however, was not uniform. In a letter to Richards in November 1933, Jameson reported on the state of Basic English teaching in

China. Though he assured Richards that the threat was not too serious, the person he identified as the leader of the "Anti-BASIC movement" in the press was none other than Lin Yutang.[37]

Lin was indeed making trouble for Richards's project. However, his criticism, though emphatic, did not entirely dismiss the idea of a universal language. While Richards sought to carry out a civilizing and utilitarian mission through Basic English, Lin had another candidate in mind. In his customary tongue-in-cheek fashion, Lin credited Basic English with the stubborn monolingualism of the English, who, "by their insolence in refusing to speak any other tongue, have made [English] into the inevitable international language of today."[38] It was evident to him that Basic, despite its professed humanitarian goal of aiding literacy, was an extended arm of British colonialism intended to keep influence over its dwindling empire. Under the cover of "World Auxiliary Language," Basic English was a form of linguistic imperialism. At the same time, however, Lin saw in it a new opportunity.

Colonial pretensions notwithstanding, Lin first notes Basic's degradation of the English language itself. Its 850-word core vocabulary (plus another 150 technical and scientific vocabulary) gives preference to learning a semantically unambiguous lexicon over idiomatic usage. The literary merit of the Basic Word List, as a result, is rather limited. In Ogden's sample Basic text, in a translated excerpt from Leonhard Frank's novel, *Karl und Anna,* a man's "beard" becomes "growth of hair on the face," while the eroticism of a woman's "breast" is significantly diminished in the functional "milk vessel."[39] Rather than "he dies," "death comes to a man." And since one will look in vain to find words like *can* and *know,* one has to respond, with a courtroom formality, "I have no knowledge" instead of "I don't know." Basic vocabulary is particularly pinched when it comes to describing the affairs of the heart:

> Slowly he went to her, feeling her attraction. There was something troubled about her parted lips; at the same time they said "yes." He put his arm slowly around her. They were together in one another's arms, not moving. And when, lifting his eyes, he saw her lips open, waiting for him and *took them again and again,* no word was said. [emphasis in original][40]

Lin imagines an analogously impoverished situation if one were to eat from a Basic menu:

> The man with Basic English could have his "meals," but there will be no "dinner" or "supper." He will look in vain in the Basic menu for steak,

> cutlet, chop, chicken, or veal. He will order "fowl" and take his chances whether duck, chicken or game is served, and he will order "fish" and be contented to have salmon or trout as the waiter thinks fit to serve them. If he wants onion, it is suggested that he can ask for "white root that makes eyes full of water." As the word "scramble" is not basic, the nearest expression I can think of for "scrambled egg" is "egg in bad shape," "troubled egg" or "twisted egg" ("disturbed egg" is not Basic). Also for a "poached egg," I can hazard the expression "egg boiled without hard cover in boiling water." And I shall get it.[41]

Instead of this truncated form of English, Lin argued for the better prospect of pidgin English, which Ogden had dismissed as being below the threshold of minimal linguistic proficiency.[42] Pidgin English, Lin notes, was a perfectly good universal language, as it had already proved its popularity by having been adapted by many speakers around the world. In a subsequent essay, "In Defense of Pidgin English," Lin even calls it "a glorious language."[43] Just as Lin's flippant treatment of Basic English was a thinly veiled objection to the altruistic pretensions of English-language dominance, his promotion of pidgin English was the vehicle for an equally ambitious counterproposal:[44]

> Advocates of English as an auxiliary international language have often advanced as an argument in its favour the fact that the language is now spoken by over five hundred million people. By this numerical standard, Chinese ought to stand a close second as an international language, since it is spoken by four hundred fifty million, or every fourth human being on earth. The Chinese language has also been considered by philologists like Otto Jespersen and Gabelentz as the simplest, most advanced and most logical language. In fact, the whole trend of the development of the English language teaches us that it has been steadily advancing toward the Chinese type. . . . It has practically abolished gender, and it has very nearly abolished case. It has now reached a stage where Chinese was perhaps ten thousand years ago.[45]

Lin speaks unequivocally about the superiority of the Chinese language as a global medium. It is interesting that he signals the same terms that McLuhan will later reinforce. The interest in an auxiliary international language hints at a greater struggle to come over global language dominance. Be it Ogden's Basic English or Lin's pidgin English, the conflict over a new world language is motivated by the primacy of the national idiom. Hence, in Lin's usage, pidgin English is neither creole nor patois. He means a very specific kind

of pidgin as retranslation, created through a secondary export from Chinese back into English. In stark contrast to McLuhan, translation for Lin is a distinct, and even proud, process of retribalization toward anti-institutional language use. He makes this clear in the examples, many of which were terms translated into Chinese from the Japanese and European languages around the turn of the twentieth century. "Gramophone," for instance, otherwise "a polished black disc with a picture of a dog in front of a horn" in Basic, would be "talking box" *(hua xia zi).* "Telescope" and "microscope," which had not yet been sorted out in the Basic lexicon, would be "look-far-glass" *(wan yuan jing)* and "show-small-glass" *(xian wei jing).* "Telegraph" and "telephone," respectively, would be rendered as "electric report" *(dian bao)* and "electric talk" *(dian hua),* restored to their first perceived novelty in association with electricity in late-nineteenth-century China.

By defining translation as pidgin, Lin thereby underscores the force of nativist transformation whenever English is absorbed in a foreign tongue.[46] In the same way that Ah Fong's "waiterminit" could just as well be someone else's "wai-t-a-meenyoo-t," pidgin could already claim a world community of speakers. That no correct pronunciation sets the bar only widens its membership. Thus, included in Lin's notion of pidgin English are also transliterations that might not carry any semantic meaning but that serve the sole purpose of resetting the sound of an utterance, as in "the already popular *tu-se* ('toast') in modern Chinese usage."[47] Translation, in this sense, is more than the transference or struggle over units of meaning. It makes way for a visceral reaction to an unfamiliar sound, a phonic rendering that does not observe the same rules of reception as a physically written form. "*Tu-se*" is a neologistic transliteration that rephoneticizes English without attempting to render its semantic meaning, which might end up something like "an obtuse official." By making special allowance for transliteration, Lin is, in essence, reexporting English as Chinese patois. McLuhan might have decided on the alphabet as the medium of future struggles for global power, and Richards may have set his sights on Basic English as the common linguistic instrument for that struggle. Lin, by the same token, insists on the Chinese language as the medium of choice. The contention over the ideograph and alphabet, Chinese character and Basic English, in other words, is no longer restricted to the visible exercise of imperial or national power. The rivalry now pivots on naming the very linguistic condition by which one can participate in globality at all.

From the typewriter to Basic English, it seems, then, that we have come full circle in a story about the alphabet and modern China. This account has, in the process, unraveled an alternative narrative, leaving a theory of the technology of Western alphabet writing vulnerable to a rivaling historicization of the modern writing of the sinoscript. Not only are the two kinds of writing—and the worldviews they accompany—perceived differently, but they also confront each other in the most uncomfortable way. At stake is not the entrance of one writing into the civilizational jurisdiction of the other, but rather the infiltration and occupation of alphabetism by the logic of the sinograph without obvious subversion. The perceived differences between the ideograph and the alphabet do not lead to wars because of a lack of a universal language. Rather, claims of universality now serve as the new idiom for an expanded scope of competition. The hope that a technology of writing might transcend the social conflicts among nations and their languages by embodying a principle of linguistic utilitarianism tempts us to ignore the complicit forms of how cultural wars are being waged.

In the same way, while the charge of Western ethnocentrism is a favored explanation for the exoticization and inferiorization of the ideograph, it does not take us very far in understanding the larger context of competing global languages. The amount of attention directed at exposing the biases toward Chinese writing diverts one's attention from how the alphabet was intercepted by the ideographic logic in a similar way. This suggestion, I emphasize, is not reducible to pointing the accusatory finger the other way by calling ideographic writing equally ethnocentric. I suggest that ethnocentrism functions here as only a narrow exercise within the larger arena of literary governance, where the mutual antagonism between essentialist and antiessentialist positions create, rather than stem, new global flows of national-language politics. By giving thought to this possibility, I further suggest, one can embark on a larger analysis of literary globalization. The mutual assimilation between global languages constitutes one of the hidden dimensions of literary governance, couched in terms of opposing empires while putting into play a sophisticated game of cultural hospitality and linguistic accommodation.

It is in this spirit of dominance through diplomacy that Lin proposes the Chinese language as the de facto world language. Further, in designing a special system of classification for the ideograph, later used for his typewriter, he ends up redefining alphabetism according to a different, ideographic logic. The juxtaposition between the alphabetic and nonalphabetic writing becomes that of the ideographic vs. nonideographic writing. In shifting the frame of mediality from one host inscription to the other, one thus sees more clearly how the binary differences between the two types of writing serve a more subtle process of accommodation. Each language tries to play host to the other in an escalation of universal access. In the way that the Chinese ideogram was recreated in Western discourse as an ideal and primitive alterity, the alphabet was reabsorbed into Chinese as an invisible component of the ideograph.

The Alphabetism of the Ideograph

Twenty-three years before he filed the application at the U.S. Patent Office in New York, Lin was developing important views on the history of the Chinese language. After studying for a year at Harvard with Irving Babbitt and Bliss Perry, and then earning a Ph.D. in historical phonology from the University of Leipzig, he returned to Beijing in 1923 at the behest of Hu Shi, who offered him a professorship in linguistics and literature in the English Department at Beijing University. Hu Shi had been teaching at the premiere institution since 1917, just shortly before he made the formal proclamation to promote the vernacular in the then still early beginnings of modern Chinese literature.[48] Hu's commitment to excavating the history of the vernacular was far-reaching and shared by other leading intellectuals.[49]

Lin's credentials in historical philology, the subject of his doctoral studies in Germany, served Hu's purpose well. In 1924, the National Learning department of the Beijing University Research Institute appointed Lin chairman of the Committee on the Investigation of Dialects. Lin was conducting research on southern topolects. Their complexity reflected centuries of migration and interculturation between the Han and other ethnic communities and had eluded the analysis of the best Western missionaries and Sinologists. Lin embarked on a period of extensive research into the history of the Chinese language, its relation to demographic and migratory changes, classical methods of literary phonology, and dialectology. In the following year, he began contributing to the journals *Verbal Threads* (*Yusi)* and *Modern Criticism* (*Xiandai pinglun),* soon establishing a reputation for his lucid and lively prose. By the time he returned to the United States in August 1936, he was widely known for his humor and wit, setting an uncharacteristic tone during a time of revolution, class struggle, and political turmoil. He was sometimes

harshly criticized for his seemingly apolitical and bourgeois style, and this led to famous battles of the pen in the journals that he founded, *Analects* (*Lunyu*) and *Cosmic Wind* (*Yuzhou feng*).

During the same period, however, Lin never stopped pursuing the linguistics project with which he began. He published both an English-language reader and several articles on dialectology and phonological distribution, some of which were republished as a collection of essays on linguistics in 1936.[50] Five years before Richards published *A First Book of English for Chinese Learners,* Lin was developing his own English-language primer, *The Kaiming English Grammar.*[51] Lin was not merely interested in the origin of the Min and Yue dialects or the lost vowel in ancient Chinese. Unlike most of the late Qing script reformers, he was never a proponent of the radical reinvention of writing that would exclude the ideograph from the future of literacy. His ideas leaned toward pragmatic language use, reflecting the mood of language reforms in the 1920s and 1930s, and increasingly turned toward the problem of national literacy as it related to the masses.

In this way, he also served in an official capacity. Lin was a core member of the Committee for Research on the Romanized Spelling of the National Language that was appointed by the Ministry of Education in 1925. His key involvement in the campaign for Gwoyeu Romatzyh led him to repugn alternative script forms. The expected course of a unified national language, modeled on the Beijing dialect, was by then quite evident. Most intellectuals agreed that Romanization was not a viable alternative to the national standardization of the Chinese script and writing system. Romanizing Chinese with the Latin alphabet was feasible only as an auxiliary aid. Lin, who worked closely with Zhao Yuanren on developing Gwoyeu Romatzyh, shared this conviction.

The proposal was implemented on the strength of its prominent supporters. It was the first and only spelling system that displayed the tonal differences of Mandarin in its physical presentation. Zhao wished to integrate tones into the "physiognomy of words" so that tone marks were not separately noted.[52] This unique feature entailed complicated rules of tonal spelling and syllabic structures that also made it difficult to use. Despite its intellectual ingenuity from a linguist's perspective, Gwoyeu Romatzyh did not enter into wide circulation. It was later replaced by Latinxua Sin Wenz, originally developed by Soviet and Chinese linguists for teaching literacy to the Chinese migrant workers in Vladivostok and Khabarovsk, who were nearly 100 percent illiterate.[53] Latinxua was most famously propagated by the leftist writer Qu Qiubai and in the communist-occupied areas.

For Lin, simplifying character strokes and developing a Romanization system for the Chinese language were not mutually exclusive projects. He wholeheartedly supported using the alphabet in Gwoyeu Romatzyh.[54] It was necessary to pursue a parallel course. Lin thought that devising a wholly new system of acoustic symbols was redundant, as the phonetic alphabet had already proved its usefulness in the different Indo-European national languages. He reviewed other possibilities that loomed in the discussions among European linguists and philologists on the correspondence between alphabetic notations and their symbolized sounds in the science of phonetics. He subsequently rejected all but one.

Otto Jespersen's Analphabetic System (later renamed "antalphabetic") was one such "ultra-alphabetic" system under consideration. It uses "half-mathematical" formulae to symbolize not sounds but elements of sounds and the positions of the various articulatory components of the speaking organ.[55] Lin thought the system, though devised with the precision of scientific transcription, bore no intuitive relation to everyday use. Alexander Melville Bell's Visible Speech, a second alternative, similarly was too intellectually detailed for the average language user. Bell wished to devise a system that would include all language sounds, from foreign to dialectal, as well as inarticulate sounds like sneezing and yawning, all by using iconic symbols whose shape would indicate how sounds are formed. Its classification of consonants and vowels was arbitrary and often disputed, undercutting its efficacy as a universal alphabet. Neither did Lin find a simple shorthand system based on speed and accuracy—like Pitman's or Boyd's—entirely desirable. A common script, for Lin, needed to be not only clear and easy to use, but also aesthetically pleasing. Only one scheme was agreeable to him. Henry Sweet's "organic alphabet" (derived from Bell's Visible Speech but replacing Bell's iconic symbols with Roman letter-based notations) agrees with his idea of a practical approach using the existing alphabetic system.

After careful study, Lin came up with his own solution in 1924. The breakthrough later became the cornerstone of the indexical system for his typewriter. About fifty "look-up" schemes *(jianzi fa)* were proposed by various people in the 1920s alone. Lin, however, wanted to design a system that any user could "pick up without learning" *(bu xue er neng).*[56] He proposed locating any given character in a dictionary first by the "top stroke" *(shoubi)* in its

radical or root component.[57] The top stroke is further divided into an order of five stroke movements: straight across, straight down, down to the side, point, and hook. With the second stroke, the same order is repeated, thus narrowing the range of possible characters. The idea was to classify the character according to its most identifiable component, and then to index the character in a new order of progression. A complimentary method is developed with reference to the "final stroke" *(mobi)*. The exit stroke is generally the longest in shape and thus most easily made out at the bottom portion of the character. The combined method, Lin boasts, also proves greatly superior to those that have come before, which depended on rhyme and vowels. For example, "reverse-cut" *(fanqie)*, a method used in classical phonology since the late second century, indicates the pronunciation of one character by combining the opening consonant and closing vowel of two other characters. The cumbersome method, however, cannot account for changes that took place in oral speech over the centuries. Even if one cuts correctly, the result may be far removed from its original pronunciation. As a lexicographical tool, the reverse-cut method ensures little inherent logic and continuity. In contrast, a system based on obvious top and bottom strokes, Lin notes, is "entirely based on shape, and does not at all borrow from analytical methods which are in any case not the strong suit of the Chinese."[58]

Not just user friendly, Lin's method contains a brilliant mechanism that assimilates an alphabetic logic. The process of elimination by repetition of the five stroke types has, in fact, an augmenting effect. Lin likens it to the classifying order of "aa," "ab," "ac," "ad," and so on. Prominent educator Cai Yuanpei applauds the ingenuity when he notes that Lin uses "the example of the alphabet and applies it to the strokes of the Chinese script," thereby producing a veritable alphabetism of "aba, abb, abc, etc."[59] The praise "created a nation-wide interest" in Lin's system.[60] Taking on the alphabetic property of linear extension, the new method of assembling Chinese characters treats stroke order like the serial arrangement of the alphabet. Instead of a cluster of simple graphemic units, the ideograph can also inhabit linearity. In short, Lin made it possible to "spell out" the Chinese character. More effective than equating an alphabetic word with an ideographic character, he found a way to "translate" the alphabetic medium as an ideographic one. Under this new configuration, the kind of cultural and philosophical difference that McLuhan and others saw in the body of the ideograph would no longer be indicative of the real stakes. Lin's index system demonstrates a new transferability between the ideograph and the alphabet.

This transposition incorporates the sequential ordering—rather than the plain physical form—of the phonetic alphabet into the mechanization of the Chinese written language.

What had long distinguished the phonetic alphabet from the ideograph—combined syllabary, phonetic divisions, linearity—thus dissolves within a double frame of stroke and alphabetic index.[61] Lin's method shifts the frame of reference such that alphabetism can no longer pose as the ideograph's lack. The idea that the ideograph is not phonetic or linear, or the alphabetic pictorial and sensorial, was never a tenable or philologically sound position. Yet Lin takes the exposure of the alphabetic myth a step further by reabsorbing that difference into a new classification system of the ideograph. The rivalry between national writings moves beyond the stage of obvious clashes or one's subordinating occupation of the other. By figuring out a new mode of accommodation and assimilating alphabetic languages, Lin combined what he thought were the best features of both languages. He therefore had little incentive to accept what Basic English had to offer. In the escalation of propagating respective national script cultures, a different kind of mutual governance came into play. Lin's pragmatic support of using the alphabet for Romanization, on the one hand, and innovative appropriation of its distinctive features to re-index the Chinese character, on the other, nullified the opposition with strategic accommodation. In this way, in the modern project of linguistic universalization, a new form of territorialization unfolds in the name of global language.

With this in mind, one can better appreciate the purpose behind the design of Lin's typewriter. (See Figure 10.) The keyboard to Lin's typewriter displays not alphabetic letters but Chinese character radicals, separated and ordered in precisely the way he had outlined. It has seventy-two keys, thirty-six of which represent the different top (upper left-hand) components, while the remaining twenty-eight represent the bottom (lower right-hand) part of the characters. When a top key and bottom key are pressed simultaneously, the type roller matches them to eight possible combinations (see Figure 11). An equally novel device is the display of these eight qualifying characters.[62] A "magic eye," or projected window, above the keyboard allows the typist to see the eight characters displayed in a row.[63] The typist then presses a key from another group of eight keys that are numbered from one through eight and located where the space bar would be in current keyboards. Each number corresponds to one character in the viewer, and the final selection is then

Oct. 14, 1952 L. YUTANG 2,613,795

CHINESE TYPEWRITER

Filed April 17, 1946 17 Sheets-Sheet 2

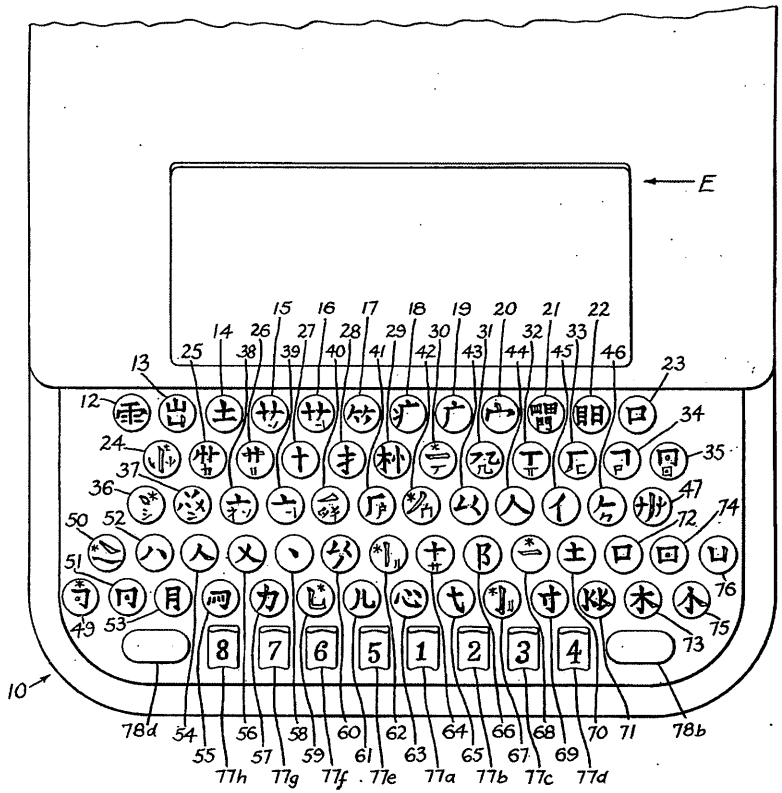

Fig. 2.

INVENTOR.
LIN YUTANG
BY
Campbell, Brumbaugh & Free
his ATTORNEYS

FIGURE 10. Lin Yutang's Keyboard with thirty-six "top" and twenty-eight "bottom" keys.

printed on the paper (see Figure 12).[64] With "reference to the shape or design of the strokes making up the character at the top and the bottom of the character," the machine can also be adjusted to transcribe other languages: "*the same structure,* but with modified key symbols and type arrangements, may be used to print other languages which are based upon the English alphabet and still other languages in which alphabets are not used" (my emphasis).[65] Lin can truly be said to have developed an unprecedented Chinese writing machine that established a new logical parsing system of the ideograph, enabling its further commutability with other languages. This adds a different dimension to the idea of translation, which normally is limited to finding an equivalent term in another language. The intertwinement of ideographic writing and scripts, in this case, redefines the medium of language such that

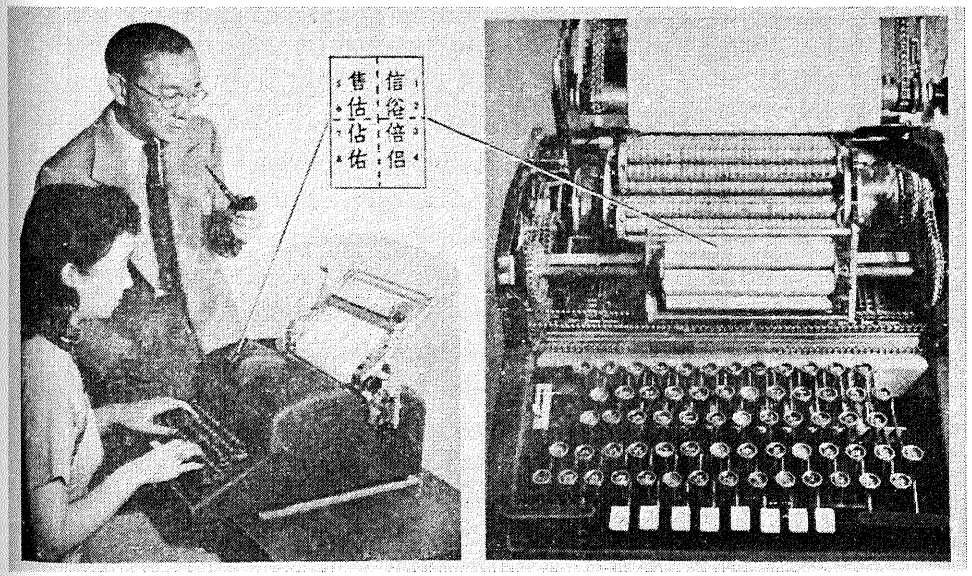

FIGURE 11. Lin Yutang's typewriter, as featured in the December 1947 issue of *Popular Mechanics*. Under Lin Yutang's personal supervision, his daughter Lin Taiyi demonstrates how to operate the revolutionary keyboard. The "Mingkwai" ("clear and quick") typewriter is capable of typing in Chinese, Japanese, and Russian. It can operate at fifty words per minute and is shown here (right) with the top cover removed. The visual indicator, or "magic eye," protrudes from the top of the machine and presents five to eight qualifying characters for final selection. Photograph from "Chinese Typewriter Can Print 90,000 Characters," *Popular Mechanics* (December 1947), 143.

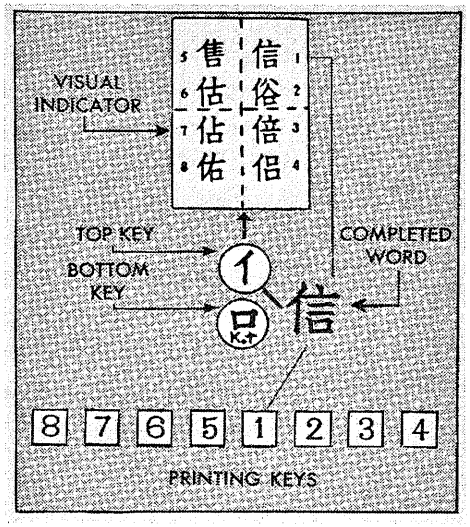

FIGURE 12. Schematic of how the three-step process works: top key, bottom key, and printing key produce eight qualifying characters for the final selection of the desired written character. Photograph from "Chinese Typewriter Can Print 90,000 Characters," *Popular Mechanics* (December 1947), 143.

their involvement is more symbiotic than dominating, entailing more cooptation than open war.

The convergence between mechanization and translation marked a new era for the ideograph. On May 18, 1948, Mergenthaler Linotype Company signed a contract to test Lin's prototype for two years in order to evaluate its feasibility for mass distribution. In September 1951, Lin officially sold Mergenthaler the copyright for $25,000. The overhead cost, however, in manufacturing each typewriter and its customized parts turned out to be too high (about $1,000 each). At this point, the United States Air Force (USAF) embarked on a research project on automatic translation, later known as machine translation. Its researchers recruited Lin's typewriter keyboard as a method of furthering the cause of global languages.

Universal Languages and Machine Translation

How Lin's typewriter came to be involved in American military research reconnects the modern history of Chinese writing to the postwar context in

which McLuhan was writing. From the moment Ah Fong fixed the English-language typewriter, linguistic and cultural differences between China and the West were about to be narrated through the machine. The mechanization of the ideograph intercepted the race for developing new forms of information technology and greatly contributed to the process. This involved a cast of characters and a sequence of events that Lin could have neither anticipated nor imagined.

Research on mechanical translation began in 1947 with the idea of using computers to translate natural languages. It became part of the cybernetics and information-theory movement in the 1940s, following the works of mathematicians Hans Reichenbach, Claude Shannon, Norbert Wiener, and others who were involved in cryptography during World War II. The false analogy between machine translation and cryptography, however, was quickly realized once research got under way.[66] The priority was the translation of technical and scientific language rather than of literary language, though the latter, possessing greater semantic ambiguities, was left out largely because of the difficulty in managing the former. Machine translation was a precursor of current-day computational linguistics and artificial intelligence, at the time drawing interest from a diverse group of pioneers consisting of linguists, engineers, physicists, mathematicians, and philosophers.

Natural languages, however, came with certain difficulties. Each speaker, depending on nativity, may speak with a different preferred syntax and vocabulary. Language itself, moreover, possesses countless idiomatic phrases that cannot be easily parsed by a machine, which must be given a discrete unit of meaning in order to convert one language into another. Here one might see the traditional problem of translation, which requires the possibility of discrete semantic units before it can be mapped to an equivalent. How to match an ideograph to an alphabetic word, however, entailed no small amount of difficulty. It was unclear how to segment semantic units equally in every language so that the machine could convert the given linguistic unit. Furthermore, because many words in a given lexicon had more than one meaning and one context for that meaning, a large portion of machine translation research was dedicated to resolving syntactical and semantic ambiguities.

The project had its counterpart in Soviet science, which began to invest heavily in cybernetics in the late 1940s. As part of the Cold War, mechanical translation extended perceived antagonisms into a race for informational advantage. As expected, early research focused on Russian and English as the

key languages. The Chinese language arrived as an intermediary that facilitated the broadening applications of automatic translation. It posed a particular challenge, as the machine would require a description, in code, of every character in a given sentence.[67] Though the difficulty in reducing the complexity of semantics and syntax in natural languages drove funds and researchers to other branches of linguistics study, the USAF continued the project at least into the late 1970s.[68] After multiple inquiries, the USAF concluded that they needed to use Lin's indexical keyboard as the prototype for its research on the Chinese language and gave it to the International Business Machines Corporation (IBM) for further development.

Beginning in 1960, the IBM Research Center pursued the study, sponsoring projects conducted at various American universities. In the summer of 1963, IBM unveiled the "Sinowriter," which was jointly developed with the Mergenthaler Linotype Company. Gilbert W. King, the director of research at the center, led the project. Referencing a concurrent project on Russian-English machine translation that was headed by Austrian Sinologist Erwin Reifler at the University of Washington in Seattle, King and his collaborator introduced the Sinowriter keyboard in a 1963 issue of *Scientific American*.[69]

King and his team developed a device for photographic storage and optical information retrieval that would greatly improve the then existing memory capacity for the number of characters. The challenge was to devise a scheme to index characters and locate them with ease. The one thing they lacked was "a keyboard that could be learned fairly quickly by people who are not necessarily able to read Chinese."[70] Lin's "geometric-recognition scheme" provided the missing piece.[71] The operator of the machine needs only to make out the upper and lower portions of a character before pressing two corresponding keys. Thus building on Lin's specific character index and display system, King's contribution, as he explained in his patent application in 1965, was to encode the Chinese input as punched holes on a Flexowriter tape, a conversion into binary codes that facilitated a faster storage and retrieval process.[72]

Lin's upper and lower components, with the pressing of corresponding keys, can compose up to ninety thousand characters in theory. King's optical retrieval system, with the help of punched tape, can call up and display the qualifying characters in "less than 100 milliseconds."[73] Therefore, "the operator actuates a key having the desired upper segment configuration to thereby insert a binary X address code into an X address register and then actuates a key having the desired lower segment character configuration to thereby insert a binary Y address code into a Y address code register. These thereafter control the character plate having both the selected upper and lower character segments to be positioned within the retrieval area, which in turn enables the qualifying characters to be optically projected at a viewing area."[74] In effect, King explains, "the two keys activate a mechanism that projects onto a screen the whole family of characters sharing these particular configurations. The family may contain only one member or as many as sixteen. Each member of the family is numbered from one to sixteen, and the operator can easily identify the one that matches the desired character in the Chinese text."[75] This further paves the way for Chinese-language machine translation, as the characters now "may be easily and quickly converted to a system for encoding and printing complex characters in a second language."[76]

Interestingly, in borrowing from Lin's reclassification system, which was a departure from the traditional lexicographical arrangements of the order and grouping of Chinese characters, King uses a metaphor of kinship. Lin, however, never used kinship to describe the final display of characters that, in his words, have no relation other than "the same top and bottom configurations."[77] His original contribution lies precisely in breaking up the traditional inventory of Chinese characters and relocating them according to a new distribution. The new system differed, according to Lin himself, from all existing methods, including Wang Yunwu's "four-corner" *(sijiao haoma)* index system. Unaware of this highly nuanced logic behind the different methods of reclassification, King sees the characters as affiliated members of the same family, bound by a morphemic kinship that resists the intervention of machine translation. One of King's chief complaints is the frustrating difficulty in matching discrete units of input—holes on a punched tape that correspond to "words"—to "a stream of characters without spacing."[78]

In 1962, King took a position at Itek Corporation, an important manufacturer of reconnaissance technology and a U.S. defense contractor during the Cold War, and undertook further research both there and at IBM. In 1964, Itek came out with the Modified Sinowriter, also known as Chicoder (or Chinese Encoder). According to its public release statement in November 1966, it is capable of encoding 10,500 characters.[79] The method can be used on anything that requires machine processing of large numbers of Chinese characters.[80]

The impact of Lin's typewriter on the era of machine translation gives an unexpected twist to the original intent of machine translation. A historic

memorandum by mathematician Warren Weaver on July 15, 1949 is credited with first launching machine translation as a scientific enterprise. Weaver, who was the director of the Natural Sciences Division of the Rockefeller Foundation and widely influential among major policy makers in U.S. government agencies, was convinced that the success of cryptography used during World War II had much more to say about the "frequencies of letters, letter combinations, intervals between letters and letter combinations, letter patterns, etc. *which are to some significant degree independent of the language used*" (original emphasis).[81] His collaboration with Claude Shannon in pioneering the first introduction to information theory further convinced him to attempt a universal code for translating languages into one another. He would not have attempted such broad parameters, however, if it were not for the input of Sinologist Erwin Reifler, who was among the two hundred colleagues to whom Weaver sent the original memorandum.

Reifler noted the presence of certain shared etymological similarities between English and Chinese. The example Weaver cites is Reifler's explanation of the characters *she*, which means "to shoot" and *xie*, "to thank, to resign." As the bent body is implied in both characters through the shared components of *shen* and *cun,* Reifler concludes that they resonate with the two semantic meanings of the English word "bow," which means "shooting an arrow" as well as "bowing out" or "dismissing oneself." With a similar contrivance, Reifler argues that the character for pupil, *tong,* which is made up of the characters for "eye" and "child," also has both the meanings of "student" and "eye" in English.[82]

Reifler was stretching the parallel a bit. Undoubtedly, he was eager to collaborate with Weaver in this new area of interest. Nonetheless, the occurrence of these shared patterns, along with another demonstration in alphabetized Turkish, led Weaver to propose the possibility of word-for-word translation, believing that statistical and probability analyses would eliminate the structural ambiguities. In a letter to Norbert Wiener on March 4, 1947 about treating translation as a form of cryptography, Weaver inserts Chinese into the equation: "It is very tempting to say that a book written in Chinese is simply a book written in English which was coded into the 'Chinese code.' "[83] This repeats the idea of English as the transcode, a global linguistic medium that can decipher Russian as easily as it does Chinese or any other language. Weaver further proposes no other than Basic English as a blueprint for restricting the use of input language to achieve semantic clarity. The plan was presented to both I. A. Richards and Wiener, but they rebuffed

the idea.[84] Wiener doubted whether the "word" is a sufficiently universal and convertible unit for the mutual translation among all languages. In his response to Weaver's letter, he wrote, "I frankly am afraid the boundaries of words in different languages are too vague and the emotional and international connotations are too extensive to make any quasi mechanical translation scheme very hopeful."[85] Weaver did not give up, however. Basic English still held for him the possibility of an example of interlingua.[86]

Ironically, what helped fulfill Weaver's vision was not the decipherment of Chinese-coded English or Basic English but Lin's alphabetically coded Chinese. The involvement of the Chinese ideograph in Machine translation was an unprecedented intervention into the traditional territorialization of writing systems. The mutual penetration of the ideograph and the alphabet ushered in a new era of medial transfer that allows one to think past the historical conceptual biases that has long insisted on their separation.[87] While the concern of machine translation was to eliminate the possible distortions caused by multiple approximate and overlapping semantic meanings between languages, it also created a different translation, in which language itself was submitted to another level of permeability. Lin's indexical system, against Wiener's prediction of Chinese serving as another code for English, relativized the basic assumption of the alphabetic "word" as the irreducible unit in translation by offering a logic of the alphabetic ideograph. The ideograph's infiltration of the alphabetic medium gives a very different interpretation to Weaver's striking anti-Babel metaphor:

> Think, by analogy, of individuals living in a series of tall closed towers, all erected over a common foundation. When they try to communicate with one another, they shout back and forth, each from his own closed tower. It is difficult to make the sound penetrate even the nearest towers, and communication proceeds very poorly indeed. But, when an individual goes down his tower, he finds himself in a great open basement, common to all the towers. Here he establishes easy and useful communication with the persons who have also descended from their towers.
>
> Thus it may be true that the way to translate from Chinese to Arabic, or from Russian to Portuguese, is not to attempt the direct route, shouting from tower to tower. Perhaps the way is to descend, from each language, down to the common base of human communication—the real but as yet undiscovered universal language—and then re-emerge by whatever particular route is convenient.[88]

Weaver assumed that, once he found a way to open the towers, the problem of communicability would be solved. Yet the possibility of communicating in a universal language, once up for grabs, instead opened up a new space in which to rival for global linguistic dominance. What Weaver had imagined to be the answer in the world of machine translation was in fact an unrealizable ideal in the world of living languages. Just as McLuhan's ideogram and Richards and Ogden's Basic English were conceived against the backdrop of unbridgeable cultural differences, so too was machine translation set in the postwar world of secret competition and clandestine strife. Neither Richards nor Weaver would have acknowledged that the interests they served were in fact one-sided. Richards promoted Basic English as a "common-sense instrument with which to work for a common-world education." Weaver aimed to remedy the fact that "a multiplicity of languages impedes cultural interchange between the peoples of the earth, and is a serious deterrent to international understanding."[89] Lin, similarly, was recoding the use of the Chinese language for the practical purpose of facilitating internationalization. Here is where universal interests collide, each harboring its own agenda to set the standard.

The still often-propagated misconception of a fundamental difference between ideographic and alphabetic writing—and even the critique of this misconception—diverts the focus from the material history of the national language. Amid the attempts to elevate writing as a separate theory of technological automation or object of philosophical inquiry, national language remains a jealously guarded prerogative in a postnational climate. The long-enshrined antithesis between English and Chinese, nonphonetic and phonetic writings, in this way continues to encourage critics to gravitate toward the drama of opposition, even though such an analysis is incomplete without an account of their coterminous governance.

Lin's typewriter demonstrates how the technologization of writing advanced the aims of a national language into an international arena. For the first time, his writing machine offered a way to cross the barrier between native and nonnative Chinese speakers and users. It highlights how literary governance can operate as an adaptive matrix of letters and scripts. While the technological conditions seem favorable for radicalizing the notion of linguistic nativity, however, other dynamics continue to divide native from foreign speakers, and national writers from their world audiences. Analogous to the new commutability between scripts, Chinese-language writers face a new

kind of linguistic mobility. Next to Chinese, the English language is the largest medium for world Sinophone writing. At the cross-currents of global languages, writers bear their own medium of choice. How translating oneself for a world audience creates new relations of duplicity to linguistic and national allegiance is the subject of the next chapter.