Voices, languages and scripts around the world

DROP A WORD in the ocean of meaning and concentric ripples form. To define a single word means to try to catch those ripples. No one’s hands are fast enough. Now drop two or three words in at once. Interference patterns form, reinforcing one another here and canceling each other there. To catch the meaning of the words is not to catch the ripples that they cause; it is to catch their interaction. This is what it means to listen; this is what it means to read. It is incredibly complex, yet humans do it every day, and very often laugh and weep at the same time. Writing, by comparison, seems altogether simple, at least until you try.

Writing is the solid form of language, the precipitate. Speech comes out of our mouths, our hands, our eyes in something like a liquid form and then evaporates at once. It appears to me that this is part of a natural cycle: one of the ways the weather forms on the ocean of meaning. What else are the words we drop like pebbles in that ocean if not condensing droplets of evaporated speech, recycled bits of the ocean of meaning itself? Yet language can also solidify — into iridescent, sharp, symmetrical crystals, or into structures more like hailstones or shale beds or mud. In solid as in liquid form, the intersecting meanings may reinforce each other or rub each other out.

To bring the metaphor ashore, writing is language displaced from the mode of immediate gesture or speech to the mode of the memento — something like the seashells and the driftwood and the footprints on the beach. Writing is leftovers — but of a kind some people prize as highly as they do the original meal or parent organism itself.

And what is language? Language is what speaks us as well as what we speak. Through our neurons, genes and gestures, shared assumptions and personal quirks, we are spoken by and speak many languages each day, interacting with ourselves, with one another, other species, and the objects — both natural and man-made — that populate our world. Even in silence, there is no complete escape from the world of symbols, grammars and signs.
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Like other creatures, humans are heavily self-absorbed. We frequently pretend (or self-righteously insist) that language belongs to humans alone. And many of us claim that the only kind of human language, or the only kind that matters, is the kind that is born in the mouth. The languages of music and mathematics, the gestural languages of the deaf, the calls of leopard frogs and whales, the rituals of mating sandhill cranes, and the chemical messages coming and going day and night within the brain itself are a few of the many reminders that language is actually part of the fibre of which life itself is spun. We are able to think about language at all only because a license to do so is chemically written into our genes.

In the next few pages, nevertheless, I will use the words language and writing most of the time in rather selfishly human terms.

II

Linguists distinguish with some care (though never with perfect consistency or success) between languages and dialects. Languages are analogous to species. They may have borrowed much from one another or have sprung from the same root, but time has redesigned them. Speakers of one must temporarily regress and learn a whole new set of skills before they understand the speakers of another. Mentally and socially, to learn another language, you must pass again through childhood. Dialects, however, are the subspecies of language. A fluent speaker of a language can move to another dialect without much loss of cultural seniority.

Dialects almost always have regional roots, but dialects, like languages, can cut their local ties and become the mobile hallmark of certain ethnic groups or social classes. If they retain some isolation, they are likely, over time, to grow into different languages. If not, educational campaigns or population shifts may flatten them instead.

A script in itself is not a language; it is a system of representation, sufficient to catch some (but never all) of a language in its net. Human language, for its own sake, has no need of being written so long as it is spoken. Languages can and do attain at least as much sophistication, and as great a pitch of eloquence, in oral cultures as in cultures rich in printed books. And for 95% of their time on earth, members of the species Homo sapiens evidently felt no need for the managerial control over language that a writing system permits. Still, language can and does adapt to writing, just as plants and animals adapt to farming and ranching. Standing row on row, like corn and squash or squawking chickens, in memos, periodicals and books, there are varieties of language that would never exist or survive without the protection afforded by writing.

Languages divide and subdivide, forming families and branches, like the phylogenetic trees of animals and plants. Scripts do the same – but

scripts are quintessentially invented, and languages are quintessentially not. The world of manuscript and print requires artificial sustenance – organized training of the young: in other words, a school – while spoken languages sustain themselves and flourish wherever humans live. These are some of the reasons why the phylogenetic trees of the world’s scripts and the world’s languages don’t match.

Languages and scripts, like plant and animal species, are also subject to change. Their territories grow and shrink and subdivide and fuse, but there are none that are not mortal, none that will not someday be extinct.

Reading comes first. The reading of tracks and weather signs is a fundamental mammalian occupation, practised before primates started walking on their hind legs, much less writing. And writing, in a sense, is always on the verge of being born. All of us who speak by means of gesture, or who gesture as we talk, are gesturing toward writing. But it is a rare event for instincts such as these to crystallize into a system that can capture and preserve the subtleties of speech in graphic form. Such a system can only mature within a culture prepared to sustain it. Starting from scratch, with no imported models, people have made the shift from oral to literate culture at least three times but perhaps not many more than that. In Mesopotamia about 5,000 years ago, in northern China about 4,500 years ago, and in Guatemala and southern Mexico about 2,000 years ago, humans created a script and a scribal culture, apparently without imported models of any kind.

In each case, the writing began with pictures – which as they came to stand for words and then for syllables, grew increasingly abstract. In each case, the originating society was already highly organized, with a heavy investment in agriculture, architecture, social institutions and political centralization. And in each case, so far as we can tell, writing was first used in the work of political, economic or religious administration. Its use for literary purposes came later.

Writing in the literary sense is one of the world’s most solitary crafts, but it is only pursued on the margins of highly organized and centralised societies.

Literature – meaning storytelling and poetry – involves the use of language more for purposes of discovery than for purposes of control. It is a part of language itself: present, like language, in every human community. There are no natural languages without stories, just as there are none without sentences. Yet literature is not the cause of writing. Literature in the written sense represents the triumph of language over writing: the subversion of writing for purposes that have little or nothing to do with social and economic control.
Writing, as Leonard Bloomfield wisely observed, is 'an outgrowth of
drawing.' But in growing out of drawing it turns into something else.
There are intermediary stages between the two, but when writing has ful-
dy distinguished itself from drawing, it has the following characteristics:
1. Writing is abstract. Pictures can be made by playing games with
writing, but in writing itself no significant pictorial content remains. In
Eric Gill's famous phrase, 'letters are things, not pictures of things.' Some
very eminent non-readers of Chinese have thought otherwise,
but this is true for Chinese characters as well as Latin script. Non-read-
ers seek out every wisp of pictorial residue in the characters because
looking at the pictures is much easier than learning to read in Chinese.
For those who read and write with ease, these associations vanish. Fluent
readers of Chinese do not in fact see pictures of horses and mountains
in their texts any more than fluent readers of English see pictures of I-
beams, D-rings, T-squares, vees of greeve or S-shaped links of chain. Such
child's play intrudes upon the reverie of reading.
2. A writing system is codified. It consists of a repeating set of symbols
sufficient to the language that it serves. Twelve Latin letters are enough
to write Hawaiian. To write a lengthy Chinese text, thousands of glyphs
may be required. But whatever system is used, writers can write what
has never been written before without inventing further symbols. New
symbols can of course be borrowed or created but very rarely have to be.
3. These symbols are defined in terms of something else. The something
else is usually speech but needn't be speech. What it has to be is language.
4. The system is stylistically as well as symbolically self-contained. As
a calligraphic tradition develops, the symbols start to talk to one another,
nourished by the-dialogues of writers with their tools. The line of the
scribe, like the stroke of the painter, the gesture of the dancer or the
touch of the musician, then becomes in itself another means of speaking.
Latin script did not begin with the system of stems and branches, ascen-
ders and descendants, bows and counters now familiar to lettering artists
and typographers; Arabic script did not begin with its now canonical
initial, medial, terminal and independent forms; and Chinese script did
not begin with the seven basic strokes now taught to apprentice calligraphers
nor the set of basic glyphs (the 214 radicals) which has, since the
Ming Dynasty, formed the cornerstone of Chinese lexicography. Scripts
acquire internal grammars of this kind as they mature, by being written.
Shān Qiān, a Táng Dynasty calligrapher, put it this way: dāo zhī zé
chuān zhā, dān zhī zé shān tāk: 'Where the brush leads, springs flow;
where it halts, the mountains stand.'
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the world, and specimens of Egyptian and Mayan hieroglyphs and of Mesopotamian cuneiform have found their way to libraries, schoolrooms, museums and souvenir shops thousands of kilometers from home.

The Latin, Greek, and Cyrillic alphabets are the three most prominent members of what we might call the Eurasian family of scripts. Like the Latin, Greek and Russian languages, they spring from a common root. But one of these alphabets has been tied for 3,000 years to a single language. The other two have been systematically spread, both voluntarily and by force. The Spanish, Portuguese, Dutch and British empires, and of course the Christian church, have left hundreds of Latin-based texts in their wake. The Soviet Union left behind it dozens of scripts based on Cyrillic. In the same way, the spread of Islam has provoked dozens of scripts that are based on Arabic.

Cyrillic is in consequence now used for six of the surviving Slavic languages and for many Central Asian and Siberian tongues whose palette of sounds is fundamentally different. Arabic script, though Semitic in origin, is widely used for non-Semitic languages, including Persian, Urdu, Kashmiri, Kurdish, Malay, and African languages such as Tamazight. Latin script is used not only for Romance languages such as Portuguese and French but for all the Germanic and Scandinavian languages, for all the Slavic languages not written in Cyrillic, and for many more outside the Indo-European family: Finnish, Estonian, Turkish, Hungarian, Bosque, Vietnamese, and more than a thousand African, Polynesian and Native American languages. Metical systems have also been devised for the romanization and Cyrillicization (transposition into Latin and Cyrillic) of Chinese, Hebrew, Greek, Korean, Sanskrit, and many other languages equipped with scripts of their own.

Where scripts are perceived not as tools for the free use of individuals but as vectors of religious or political authority, shifts in power are sometimes quickly mirrored by shifts in script. Turkish was written in Arabic script from the 12th or 13th century until 1928, when a government decree forced a shift to the Latin alphabet. Tajik was first written in Arabic, then for a time in Latin letters, but in the Soviet era, these scripts were replaced by Cyrillic. In 1991, when Tajikistan declared its independence, efforts were underway to return to Arabic script. Continuing shifts in the balance of power are still having an effect on how (and where and whether) Tajik children learn to write.

Even systems of romanization are sometimes perceived as politically charged. Despite its many practical advantages and nearly worldwide acceptance, there are governments, institutions and individuals who will not use the pinyin system for romanizing Mandarin Chinese, on the grounds that the system’s initial sponsors were Marxist.

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A writing system consists of a set of symbols, a set of definitions for the symbols (that is, a graphic lexicon), and rules for their use (a graphic syntax). The symbols, most of the time, are realized as glyphs, which are visible, repeatable marks and shapes, constrained by the propensities and limits of the human hand and eye. Except by association, there are no Marxist (or Christian or Muslim or Jewish) scripts, any more than there is a Marxist or Christian arithmetic, or in music, a communist C-sharp.

Cultural factors, including religion and politics, do indeed affect how writing looks, but their effects are often remarkably independent of the script that is in use. Industrial civilization, for example, during the early and mid 20th century, gave us typefaces such as Helvetica and Akzidenz Grotesk, with their tiny aperture, absence of serifs, blunt terminals, bold and invariant stroke, short extenders, large x-height, and slightly squashed counters set on a rigidly vertical axis. The same industrial civilization gave us Greek, Cyrillic, Hebrew, Devanagari, Japanese and Chinese types with similar characteristics: a global epidemic of Helveticacs. No one can determine, by examining these fonts, the religious or political opinions of their designers or manufacturers. What one can determine is that all of them embody an aesthetic reminiscent of the forklift and the freight car: heavy industry and centralized production. All are aesthetically linked, in other words, to a world in which Marxist thought could flourish.

An equally global post-industrial aesthetic, later in that century, gave us, for each of these scripts, types that are lighter in weight though very similar in form. (Latin versions can be found in the font catalog under several names, including Helvetica Light.) Here again, it is impossible to tell, by looking at the type, the religious or political ideas of its designers, but all these fonts are aesthetically linked to a world of greater automation and lighter, faster transport: one where factories are airier, work more often sedentary, shift times often shorter, and where references to Marx, whether in or out of fashion, rarely inspire insurrectional zeal.

Stylistic changes of that kind - dark to light or squarish to roundish, short-lined to long-lined, serif to sans, and so on — are part of the life history of almost every script, and over time the changes can be numerous and great. Chinese, Indic, Arabic, Hebrew, Greek, Cyrillic and Egyptian scripts have histories as intricate and various as Latin script — enough to guarantee no end of pleasant tasks for the art historian of letters.

The subtler changes often look to me more interesting and meaningful than catastrophic shifts. People very rarely choose what species of script they are going to write. A system of writing is thrust upon most by local tradition, and on some by a dictator’s whim, a colonial invasion, or a missionary’s passion. How individuals and their societies use the system they are given is what tells us who they are. Out of the endless
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search for perfect form have come the inscriptions caps of Trajan’s column, humanist romans and italics; the naskhi, thuluth and ray’a forms of Arabic; the script of Qumran and the Tuscan rabbinical hand; the kūshāi or ‘model script’ of Wei and Jin Dynasty China, the Wild Grass or Crazv Grass tradition known as nüshù in China and as kyūso in Japan; the Ume and Uchen scripts of Tibet; and many more.

Scripts consisting of spare, unscripted Euclidean figures—lines, angles, dots, circles, arcs, squares, and so on—have sprung up many times. The early scripts of Italy, Spain and Greece are examples. So are the Massilian (Berber) scripts of North Africa, dating back perhaps to the 5th century BCE, and so are the Brahmi script, created in northern India, perhaps at the behest of the Buddhist emperor Asoka in the 3rd century BCE, the Scandinavian futhark (runic script), which probably dates from the first century CE, the original Hangul script introduced in Korea in 1446, the Algonquian syllabic script created in central Canada around 1840 by James Evans, and Brahmi’s modern descendant, the Miao script created in Indo-China in the early 1900s by James Pollard. Their early forms have much in common, but each has its own history.

The early European scripts grew by slow degrees into all the different forms of Greek and Latin script: rustics, uncial, square capitals, the Carolingian minuscule, the humanist hands of 15th-century Italy, and the enormous take-out menu of modern digital type that now resides on most computers. Brahmi developed into Devanagari, Bengali, Malayalam, Telugu, Thai, Tibetan, and all the other forms of Indic writing. The Massilian scripts have never had much use apart from brief inscriptions, letters, labels and ornamentation, yet the system has survived, almost unchanged, in the Tifinagh script, still used for the same purposes, chiefly by the Tuareg. The futhark was widely used in northern Europe without much formal change—but like Massilian, it was evidently never used for texts of any length. It survives, like Tifinagh, not as a medium of literature nor even administration, but as a playing form and a form of symbolic ornament. Those who might have written in runes now write in Latin script instead, and those who might have written in Massilian now either dwell in one of the world’s few surviving oral cultures or do their more serious writing in Arabic script. In short, runic and Massilian scripts have remained in the realm of handicraft or folk art, while the scripts of southern Europe (like those of China, Japan and the Muslim world) have been for many centuries the object of professional attention.

The most striking contrast, however, is between the fate of Hangul and Algonquian syllabics. When Hangul was introduced, Koreans had no writing system of their own. Those who were literate had learned to read and write Chinese instead—and then adapted Chinese glyphs in some degree to write Korean. The Hangul script was designed and tested in private, then presented fully formed, backed by the authority of the king. Four centuries later, another such system was presented, fully formed, to the Cree and Ojibwa of Ontario and Manitoba, backed by the authority of the resident Methodist missionary. Phonologically, Hangul is more sophisticated than any Algonquian syllabics, but both systems were tailored to the languages involved and easy for native speakers to learn. What both these systems lacked was a scriptorial tradition and a sense of graphic poise. Both were introduced in a form resembling first-graders’ stick-and-balls.

Within a single generation, Hangul was transformed by its own users. The script’s essential geometric plan and rational basis were maintained, but it was written with a Chinese brush. Principles of movement and fluidity, balance and asymmetry were borrowed from Chinese calligraphic tradition, which many Koreans already understood.

In the Algonquian world, however, no other form of writing was in use when Evans introduced his system. Cree hunters familiar with any form of calligraphy were few and far between. As an agent of social change, the Algonquian script has been a success. It is still preferred by many Cree and Ojibwa despite the inroads later made by Latin script. and in the 1860s, Evans’s missionary colleagues adopted it into Inuktitut (the language of the Inuit or Eskimo). In the Eastern Canadian Arctic, it is now the major script for much administrative work and is used for literature as well. Yet Algonquian and Inuktitut syllabics still have not developed a fluent cursive form nor a calligraphic tradition. As missionary scripts, they were initially intended more for reading hymns and gospels than for writing indigenous texts, and they were cut and cast in type with missionary zeal before their users could impart a human touch. Most people writing Inuktitut now use a keyboard and computer in preference to a pencil or pen, further insulating the script from the humanizing force of writing patiently and lovingly by hand. It remains to be seen how the script may now develop through the medium of digital design.

IV

When exported from one language to another, a writing system almost always undergoes some change. The basic Latin alphabet, for instance, is only 20 letters: ABCDEFGHIJKLMNOPQRSTUVWXYZ. (Latin scholars often count three more: Etruscan K, which was used at first and then rejected, and Greek Υ and Ζ, which were borrowed by bilingual Roman writers when required.) On its way to modern English, this efficient, simple system acquired a lower case, a set of Arabic (in reality, Indian) numerals, and a dozen or so marks of punctuation. It also added several letters: J K
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vwxyz. To accommodate French, it has added ã ã ç é è ê ë ī ĵ j ĵ o û ū û v y z. In adapting to Norwegian, it has dropped c q x and added ñ ø v y z. For Tahitian, it has dropped b c d g l s z x and added only ñ. It is the mark of a modern and cosmopolitan language to make some room for foreign words, and the mark of a modern and cosmopolitan script to make some room for foreign letters. The fact remains that b c d f l and s are foreign letters in Tahitian, and k and w foreign letters in French, just as ñ l and ñ are foreign letters in English.

In adapting to modern Russian, the old Cyrillic alphabet has dropped more than a dozen older letters and added ñ ñ [short ñ, ñ, ñ]. For Macedonian, it has added f j j ñ ñ ñ ñ [gj, je, je, nje, nje, der, der, grave e, grave ñ] and retained the old Cyrillic s [stc], which is no longer used in Russian. To suit the needs of Persian, the Arabic script adds ñ ñ ñ ñ [peh, cheh, zheh, gaf]. It adds the same letters for Kurdish (though the preferred Kurdish form of cheh is ñ) and another four as well: ñ ñ ñ [retroflex s, veh, velar l, ñ]. In Kurdish, however, the script is differently used. All vowels, both long and short, are written in Kurdish—not as diacritics but as full-size, baseline characters. Only long vowels are written on the baseline in Arabic and Persian. What this means is that Arabic script has become alphabetic in Kurdish though it is not alphabetic in Arabic, Urdu or Persian.

Arabic script, unlike Latin and Cyrillic, very rarely loses any letters in adapting to new languages. The reason is that it arrives as the script of the Koran, which faithful Muslims are expected to read or recite in the original, not in translation. Any language that accepts Arabic script is likely to be spoken in a culture that accepts Islam. Any culture that accepts Islam inherits a sacred text written in Arabic and therefore needs all the Arabic letters, including ñ [daj], which represents a voiced, pharyngealized dental stop (epenthetic d). Arabic is the only language in the world in which this phoneme plays a role, but its symbol now appears in the standard character sets of several dozen languages.

The scripts of English, French, Macedonian, Persian and Kurdish are, in essence, 'graphic dialects' of Latin or some other parent script. Most scripts are of this kind — mere variants of other scripts — and are none the worse for that. Writing systems are rarely created from scratch where an existing script can comfortably be borrowed or adapted. In order to be written, every language needs a set of characters sufficient to bridge the gap between one speaker and another, but there is no linguistic reason why it needs a script exclusively its own.

To millions of people nevertheless, script is a badge. Hebrew script, to many, is a badge of Jewishness, Arabic script a badge of the Islamic faith, Devanagari script a badge of Hindu pride, Cyrillic script a badge of Slavic solidarity or Soviet nostalgia, and Sinhalese and Tamil scripts the sym-

Figure 2. The basic Arabic character set (far left) is a syllabary now consisting of 28 consonants and eleven (largely optional) diacritics, three of which are the basic signs for vowels. The derivative of this script used for Kurdish (near left) is an alphabet. In Kurdish script, there are six additional consonants, and four of the borrowed Arabic signs are redefined as vowels. Two additional Kurdish vowels are written as digraphs: long ñ as double ññ, long l as double jll. The five graphemes in the Kurdish list are used only for writing Arabic words. Velar l (here transcribed as ñ) occurs in both Arabic and Kurdish, but only in Kurdish does it have a graphic symbol of its own (Jl!). In Arabic, this phoneme occurs in only one word, Allah. In Kurdish it is more extensively used.
bols of two Sri Lankan factions now bitterly opposed. But badges are removable. Where associations such as these are fervently pursued, a script occasionally proves to be more like a brand, or indeed like a prison tattoo, re-engraved on the brain with every letter written and every letter read.

The number of languages actively written in two scripts is not, at present, very large, but the tension that exists where several of these languages are spoken is enough to give one pause. Serbo-Croatian, for example, is commonly written in Latin script by Croats, in Cyrillic script by Serbs. Tajik is now written in both Arabic and Cyrillic, Malay in both Arabic and Latin - the choice again depending mostly on political or religious affiliation. Kashmiri and Sindhi are generally written by Hindus in Devanagari and by Muslims in Arabic script. Hindi and Urdu - the one a major language of India, written in Devanagari, the other a major language of Pakistan, normally written in Arabic script - might more accurately be described as one language or as three. Literary Urdu and literary Hindi are specialized forms, largely distinct from one another and from Hindi/Urdu in its normal spoken form. Before the partition of Pakistan and India, this colloquial language - which is spoken by 300 million people or more - was known as Hindustani. Religious and political division have left it no accepted name of its own. It is referred to in Pakistan as Urdu and in India as Hindi, and is written in two scripts, yet underneath these names and scripts, no language barrier really exists. It is often said that the purpose of script is to extend and enhance communication, but scripts are sometimes used instead to establish or enforce a demarcation.

Phonetic scripts such as the IPA (International Phonetic Alphabet) are not tied to any particular language - and unlike any 'natural' script, they are really designed for use by linguistic outsiders. Native speakers do not need the finicky instructions about tongue position and voicing that phonetic scripts provide. The IPA, one might suppose, is a perfectly neutral and objective way of writing. Yet even this script, designed to scientifically record what strangers say, is sometimes used as a tribal badge, to segregate the academic linguist from the rest of mankind.

Humanist traditions around the world tend to rely on a different assumption: that all members of a group should speak or write with a single voice, but that a single individual can speak and write with many different voices. Different ways of writing serve then as the emblems of different ways of speaking, and different ways of speaking help to classify and order information, not to classify or stereotype the speaker.

One of the great books of the Renaissance is Leonhard Fuchs's botanical work De Historia stirpium, published by the Basle printer Michael Laengrin in 1542. Four scripts are used throughout the text. Two of the four are bicameral (that is, they include an upper and lower case); the other two are tricameral (upper case, lower case and small caps). So there are ten sets of characters in constant use. The main text is in Latin, set in a serifed roman, upper & lower case. Some information, especially plant names, is also given in German and Greek, with the German words in ūclic fraktur, the Greek in ūclic cursive Greek. The sidenotes — in Latin again — are ūclic italic. Main heads are set in roman capitals (from the same font as the text). Run-in heads and running heads are set in spaced small caps, Latin or Greek, as the language demands. Four other fonts appear on a regular basis. Subheads are in small caps larger than those in the running heads. Another fraktur, also larger and of more elaborate cut, is used for German captions to the illustrations, side by side with Latin captions in text-size roman caps. A four-line ornamental initial marks the start of every chapter — and this again is sometimes Latin, sometimes Greek.

Polyphonic music was in vogue all over Europe in Fuchs's time, and there is something polyphonic in the typography of his book. Many voices speak from the page at once. Each speaks a separate part, but they are graphically in tune. The effect is vigorous and harmonious, not chaotic.

Even in Germany, the mixing of roman and blackletter types is now rarer than it was. But in most of the places where Latin script is used, it is standard practice to mix roman with italic and small caps (and/or bold and bold italic). Each is given a separate job to do. This is a legacy from printers such as Isengrin, who pioneered the route. Great resources and intense work are required to do all this with handcut metal type. Mixing scripts and sizes in the digital world is easy — but doing it as well as a 16th-century master printer is something else again.

In Chinese, Arabic, Hebrew, Armenian and Devanagari, true italic type does not exist, and different calligraphic styles are rarely mixed as closely as roman and italic are in Latin script. Bold type is sometimes used for emphasis, however, and good Chinese and Japanese typographers will sometimes build a very subtle pattern of mixed sizes on one page.

Only a few writing systems - Latin, Greek, Cyrillic, Armenian - have developed bicameral form, but every script that is heavily used develops multiple styles, including some that are more formal, interrupted and precise, and some that are more cursive. Using one script for heads, another for text is common enough. But mixing two such scripts like this, in the midst of a single-language sentence, was a late development even in Latin script. It began in 16th-century mathematical texts, to mark symbolic phrases (as in: draw a line from a to b). The use of italic to isolate phrases, such as the titles of books, began with the practice of changing type to mark a change in language. A Latin title cited in French text or vice versa was cause for a shift between roman and italic. In time, the
change of font was taken to mark a logical shift instead of a linguistic one. In 1559, at Lyon, Jean de Tournes printed a revered French text (Jean Froissart’s *Chroniques*), annotated as though it were a Greek or Latin classic. Like the text, the scholarly sidenotes are in French, but they switch back and forth between roman and italic to distinguish editorial *enlacements* from editorial *remarks*. In 1559, this was a revolutionary step. Mixing roman and italic on one line in one language did not become a widespread practice for another hundred years. (Most German printers avoided it long after that.)

Greek type has existed in both cursive and upright forms since roughly 1475, but using these together in a *single line of type* was rare indeed until the late 20th century. The typographic habits of Greek, Cyrillic and Latin script have been converging slowly for two centuries, and are now converging rapidly, under the spell of English, French and German models. Similar experiments are occurring in other scripts as well. In Korean, for instance, oblique Hangul type is occasionally used in imitation of Latin italic.

Japanese, however, has a tradition of mixing scripts and types that is at least as highly developed as the Latin system and fundamentally different. Japanese has been written in Chinese characters since the third or fourth century CE. Around the tenth century, Japanese syllabic script came into use, and this now has two forms. Chinese characters (called in Chinese 漢字, in Japanese, *kanji*) remain the foundation of Japanese writing. Cursive syllabic script, called *hiragana*, is used for writing syntactical particles and all the grammatical inflections that Chinese does not have but Japanese can’t do without. More angular *katakana*, are used for words and names borrowed from other languages, for irony and emphasis (much like italics) and for any Japanese word the writer does not wish to (or know how to) write in *kanji*. In addition, modern Japanese makes frequent use of roman characters, *romaji*. These are employed for European names, citations and addresses, for many abbreviations, and increasingly for slogans and quotations. To this set of four basic scripts, others may be added. Greek and Cyrillic scripts, for instance, are found in scientific work. Devanagari and Tibetan are much used in Buddhist studies.

No one appears to have made a careful count of writing systems known throughout the world. Ignoring for the moment all the systems invented for private use by individuals (of which there may be thousands), the tactile scripts for the blind, and all the cryptographic and stenographic systems (a thousand at least), there appear to be only about a hundred species-level systems (such as Chinese, Latin, Cyrillic, Bengali and Arabic) that are now in current public use. At least a hundred more—maybe closer to a thousand more—are dormant, undeciphered or lost and forgotten. But the number of distinct subsystems (on the level of Spanish and French, Ukrainian and Russian, Persian and Kurdish, Greek and Inuktitut) is growing year by year and is potentially much larger than the number of human languages to be written. Humans speak about 6,000 languages at present. A century ago, most of these had never been written. Now, nearly all of them have—though only a few hundred possess a self-sustaining scriptorial tradition.

The number of languages spoken by humans is, however, dropping at a very rapid rate, and the number of people devoted to reading the languages of the past is not apparently increasing. Uses could be found for 10,000 scripts. But if, in the near future, humans will speak only a few hundred or few dozen privileged languages—and if only a few scholars, who cannot really speak them, will read what is written in all the rest—then a few scripts are all we need. Languages that have no native speakers, and no more than a few eccentric readers, might just as well, alas, be written in phonetics.

In 1996, two linguists, Peter Daniels and William Bright, published an analytical catalog of *The World’s Writing Systems*, claimed by its publisher to cover ‘all scripts officially used throughout the world—as well as their historical antecedents’. Officially, here, is a wishful but meaningless word. In truth, though it exceeds 900 pages, the catalog omits thousands of writing systems, including some (Zuni and Navajo, for instance) that are the vehicles of ‘unofficial’ major world literatures. The best that can be said is that Daniels & Bright is much the most impressive effort yet toward a monumental, uncompleted task.

A number of scholars (including Daniels and his teacher IJ. Gelb) have been concerned with the systematic classification of writing systems. The taxonomy I will outline here draws heavily on the work of Gelb and Daniels but is in some respects at variance with both. I have found it workable and useful, but there is no guarantee that this or any other taxonomy is effectively complete—for new scripts can always be created, and a number of undeciphered (hence unclassified) scripts survive from the distant past.

Writing systems can be characterized as *semographic, syllabic, alphabetic or prosodic*. These four terms or * hues of meaning* form a simple taxonomic wheel. Finer distinctions are certainly possible, and in some instances useful. *Syllabic* can be subdivided, for instance, into *logosyllabic* and *alphasyllabic*. *Prosodic* can be divided into *semprosodic* and *alphaprosodic*. But no such term, no matter how ponderous, is in itself
Language Culture Type

a satisfactory classification. The reason is that writing systems are like lichens: they are compound entities. Every developed system belongs to more than one of the four primary categories.

Coarser distinctions are possible too. Beneath this four-part taxonomy, a two-part taxonomy is lurking. In essence, when writing a spoken language, one can focus on meanings or on sounds. Sounds can be written as clumps (the sonorous units called syllables) or parsed, at least roughly, into phonemes and written as consonants and vowels. If the writing of meanings ran on a parallel track, then meanings could also be written as clumps (the conceptual units called words) or parsed into morphemes and written as lexical roots, affixes and inflections. The morphemes of ‘meaning’, for instance, are mean + -ing, and the morphemes of ‘meanings’ are mean + -ing + -s. Each of these could have its symbol. But no known writing system works in quite that way.

When people approach the task of writing by trying to represent what they mean, not what they say, they produce an alternative to speech and not a record of it. Very often, they start with pictures — conceptual triggers that point or allude to things or ideas. Later on, as the need to write sounds becomes more pressing, these images may be used to represent the sound of the word that names the meaning — but then they are no longer symbols of meaning but symbols of sound. After writing with sounds is established, people sometimes look for ways to make the meaning clearer. Often they do so by giving the writing a pattern or shape — not pictorial shape, but a pattern or shape found in the act of thinking itself, or in the sounds by which that thinking is expressed. These shapes and patterns are prosodic. They are written not with pictures but, as a rule, with punctuation. This may be a little clearer if we go around the taxonomic wheel by spoke.

In semographic systems, separate symbols represent units of meaning, which sometimes include entire phrases or polysyllabic words. Mathematical writing systems are routinely semographic. The systems now in common use for arithmetic, algebra and the calculus are almost purely so. No literary script is entirely semographic, but Egyptian, Mayan and Chinese writing is semographic in part. Numerals, currency signs, and the per cent sign are semographic glyphs routinely used in many scripts that are otherwise syllabary or alphabetic.

In a sense, of course, a semographic script is supralinguistic. It makes no difference (for some purposes) whether the symbol 2 is pronounced as two, do, deux, zwei, ni, dòo or דַּעְו. Yet many kinds of statements can be written in semographic scripts with great precision, and all such statements can have equally precise realizations in spoken language. (The statement 1 + 1 = 2, for example, will be differently pronounced in

Robert Bringhurst • Voices, languages and scripts

English, Greek and Hebrew, but it possesses in each case a quite specific and precise linguistic formulation.)

In syllabic systems, each sign represents a syllable, which is usually treated as an unanalyzable whole. In logographic systems, there may be many signs for a given syllable, each with a different meaning. Egyptian and Mayan hieroglyphs are logographic in part. Chinese script is primarily logographic for Mandarin Chinese, but the same script is largely semographic when used for Japanese. (The reason is that, when reading Japanese, the phonetic components of the Chinese glyphs, the kanji, are frequently ignored, and the non-syllabic Chinese glyphs often read as Japanese polysyllables.)

In other syllabic scripts there is one symbol per syllable, but the symbols are not based on any system that acknowledges the underlying presence of consonants and vowels. Katakana, hiragana and Cherokee are scripts that are syllabic in this rather purist sense.

In alphasyllabic systems, syllables are recognized as units but are represented by symbols that acknowledge an awareness of underlying consonants and vowels. This can be done in a number of ways. In Devanagari, Tibetan, Malayalam, Burmese and other Indic scripts, the basic symbol represents a consonant and implies by default a simple vowel. Diacritics are added to represent a change in that associated vowel. In Ethiopic, the basic symbol represents a consonant, and the associated vowel is shown by systematic distortion (e.g., by shortening the left or right side of the base character). In Canadian syllabics (Cree, Chipewyan, Dialect and Inuit writing), the basic symbol represents a consonant, and its orientation (Facing up, down, left or right) reveals the vowel. In Korean Hangul script, consonants and vowels are fully analyzed and each has its own graphic, but these component symbols are recombined in compound glyphs or clusters that each portray a syllable.

Consonantal scripts such as Arabic and Hebrew are often assigned to a separate category. I believe that it makes better sense to regard them as a special case of alphasyllabic writing. In these scripts, just as in Devanagari, the basic symbol represents a consonant. The companion vowel (or its absence) can be represented by a diacritic, just as in Devanagari, though in practice, with consonantal scripts, these diacritics are usually left off. Some such systems — the Massilans scripts of North Africa, for instance — have no vowel signs at all. Others (e.g., liturgical Hebrew and modern Aramaic) have been effectively transformed, through consistent use of vowel signs, into full-fledged alphasyllabaries.

In alphabetic systems, the syllable is invisible; nothing is represented except the separate consonants and vowels. Latin, Greek and Cyrillic are alphabetic systems — but in their normal working form, with numerals,
punctuation and other unalphanumeric symbols, they are far from being purely alphabetic. (Both Korean Hangul and liturgical Hebrew have been called alphabetic, because they do, each in their own way, systematically indicate both consonants and vowels. I call them alphasyllabic instead, because, like Devanagari, they are essentially syllabic in organization.)

The Latin, Greek and Cyrillic scripts are almost universally called alphabets. It is useful, though, to remember that what makes any set of glyphs an alphabet is not the glyphs themselves but how they’re used. Latin script is used syllabically, not alphabetically, in acronyms such as RAF and FBI. It is used semantically, not alphabetically, in numerals such as XIV and MMIII. On the other hand, in some early Egyptian inscriptions there are instances of genuinely alphabetic writing using hieroglyphs. (Most hieroglyphic texts are partly semagrammic, partly syllabic.) Arabic script is used alphabetically for Kurdish and Kashmiri, and some writers use it alphabetically for Pashto. Hebrew script has been used alphabetically, especially for writing Yiddish and Spanish. If the syllable clusters of Korean Hangul are dismantled and the components arranged in a line (as has sometimes been proposed), the result is alphabetic Korean. Yet all these scripts—Arabic, Hebrew, Korean—are normally syllabic.

Prosodic writing systems focus not on words, syllables or phonemes but on what linguists like to call ‘suprasegmentals’. These are intonational features such as pitch, duration, emphasis and pause. Musical notation is fundamentally prosodic, though not always purely so. Literary writing systems are never purely prosodic, just as they are never purely
semographic, but a strong prosodic component has developed in many writing systems which began with no prosodic symbols at all. The lin- eation of Greek and Latin verse, the single and double bars of Sanskrit verse, the tonic accents added to Greek texts by Alexandrian scribes, the Masoretic accents and Tiberian cantillation marks applied to the Hebrew of the Torah during medieval times, and the tonemarks created in 13th-century Indochina for Sukhothai (the parent script of Thai and Lao) are all prosodic symbols of importance to the history of script. Comma, colon, semicolon, long dash, full stop, parentheses, square brackets, question, exclamation and quotation marks are the survivors from a larger flock of symbols used as prosodic markers by many generations of European scribes. They are now routine components of every European script and of many Native American, Asian and African writing systems too. In bicameral scripts, the systematic use of capitals is yet another established form of prosodic marking — and so is italicization.

Semographic and prosodic are not so much opposite ends of a spectrum as adjacent points on a circle — but between these two adjacent points, the circle may be either broken or whole. How a statement is inflected can contrast or coincide with what it otherwise might mean. Besides that, meaning has its prosody — conceptual, not audible — which the prosody of speech appears at times to know but little of. If we look more closely at prosodic scripts (or the prosodic components of scripts), a division appears. There are signs that represent the prosody of speech, and signs that represent the prosody of meaning. We can call them alphanumerous and semenprosodic signs. The distinction exists in the writing of music and mathematics just as it does in the writing of speech — but in mathematical notation, semenprosodic comes first; the reverse is the case in musical notation. In early manuscripts of European music, all signs are alphanumerous. In a modern European musical score, the notes and rests and ties portray the prosody of sound, but the bar lines and beams (e.g., the heavy horizontal connecting groups of eight notes) are semenprosodic signs. They tell us how the music is thought, not how it sounds.

As usual in the world of writing systems, the difference is not in the signs themselves; it is in how the signs are used. That ubiquitous yet invisible symbol known nowadays as the hard return is often an alphanumerous symbol in verse but semenprosodic in grocery lists, computer scripts and literary prose. Square brackets and parentheses are usually semenprosodic in literary texts, just as in musical notation. But the most important semenprosodic symbol in general use is the word-space. It is needless in Chinese, where nearly every syllable — and therefore every symbol — is a word, but essential in mathematics. Many scripts have done without it, but those that have absorbed it have all kept it. It is crucial to silent reading (which is, in essence, semenprosodic reading). For that reason, it is crucial to reading speed.

In a normal string of English text, alphabetic symbols will outnumber semenprosodic and prosodic symbols roughly five to one (and 75% or 80% of the non-alphabetic signs will be the spaces between words). Yet on a normal QWERTY keyboard, there more semenprosodic and prosodic signs than alphabetic letters.

Writing, in short, is many things, used in many different ways by different people. In itself, it is both less and more than language. More because it can develop into rich and varied forms of graphic art. Less because, much as we love it, it is not an inescapable part of the human experience or the perennial human condition. If language is lost, humanity is lost; if writing is lost, certain kinds of civilization and society are lost, but many other kinds remain. Humans lived on the earth successfully — and so far as we know, quite happily — for a hundred thousand years without the benefit of writing. They have never lived, nor ever yet been happy, so far as we know, in the absence of language.

Recommendations for further reading
LANGUAGE CULTURE TYPE

International type design in the age of Unicode

LANGUAGE CULTURE TYPE is a wide-angle snapshot of global typeface development at the start of the 21st century. It is a landmark publication in the long history of type and printing. No other book has taken such a consciously global approach to the way written communication is reproduced around the world.

The publication of this book sprang from the first type-design competition sponsored by the Association Typographique Internationale (ATypI), which was judged by a multilingual jury of typographic experts in December 2001 in Moscow. The competition, entitled bukva:raz! (Russian for ‘letter:one!’), was intended to promote cultural pluralism, interaction, and diversity in typographic communications. It was a special contribution of ATypI to the United Nations Year of Dialogue among Civilizations (2001).

The heart of Language Culture Type is the winners of bukva:raz!, along with information about each typeface, its language, and its designer. Complementing the typeface showings is a series of essays giving context and perspective on the interplay of types and languages in the world today, and delving into the specific problems and solutions of developing typefaces for the many linguistic cultures of our world. Robert Bringhurst, in his lead-off essay, presents a new classification system for the world’s different kinds of writing—a ‘taxonomy’ of written language—while John Hudson tells us where we stand in the technical challenge of communicating across cultures through digital type. Other essays look at type design for Arabic, Hebrew, Greek, Cyrillic, Japanese, and the languages of Africa, as well as the Latin alphabet.
bukvarei
Type design competition of the
Association Typographique Internationale
bukvarei, an International competition of type
design, was organised by the Association Typogra-
physique Internationale (ATypI). It is the first event
of this kind since the founding of ATypI in 1927. The
competition was officially announced at the general
meeting of ATypI in Leipzig, on 24 September 2000.
bukvarei was a special contribution of ATypI to
the United Nations Year of Dialogue among Civiliza-
tions (2001). Bukvarei was aimed at promoting
cultural pluralism and encouraging diversity,
interaction, and co-operation in typographic com-
munications. 251 designers from thirty countries,
of various ethnic, linguistic, and cultural back-
grounds, contributed to the contest.
Over six hundred entries competed in five catego-
ries: text designs, display designs, text/display
type systems, type superfamilies, SH fonts. Four-
teen languages/territory systems were represented
by the entries to bukvarei: Arabic, Aramaic,
Armenian, Canadian Aboriginal syllabics, Cyrillic;
Czecho-Slovak, Georgian, Greek, Hebrew, Interna-
tional Phonetic Alphabet, Japanese, Latin, Ogham,
Xinjiang Uygure, Dai (New Tai Li).
The competition was arranged on behalf of ATypI
by the Type Fiegner Association, a professional
society based in Moscow, which unites the best type-
design professionals of Russia. The name of the com-
petition — bukvarei — translates as 'letter-number',
deduced to the Russian for 'letter' (as 'lettriforme')
and not for 'one' (as in 'two thousand one').
The judging of bukvarei took place in Moscow, Rus-
sia, on 1 and 2 December 2000. The jury of bukvarei
included renowned experts in international type
design and typography: Matthis Carter, Yuri Sen-
chuk, Akira Kobayashi, Lyubov' Krutitskaya, Barry
Lavaldie, Ilona Rasa, and Wimkie Saffon. The
jury was chaired by Maxim Zhilov.
One hundred entries selected by the jury to receive
Certificates of Design Excellence were shown at
the annual conference of ATypI in Rome in September
2001, and at the exhibition in Moscow, Saint Peters-
JOHN D. BERRY is an editor/typographer who works both sides of the design/content divide. He is the former editor and publisher of U&lc ("Upper and lower case") and of U&lc Online. He has a deep and eclectic background in both writing/editing and typography; he made a career for more than twenty years in Seattle as an editor and book designer, before moving to New York in early 1998 to take over U&lc. He writes and consults extensively on typography, and he has won numerous awards for his book designs. He is on the board of directors of the Association Typographique Internationale (ATypI) and of the Type Directors Club in New York; he is the US country delegate to ATypI. He lives in San Francisco with the writer Eileen Gunn.
Language Culture Type

INTERNATIONAL TYPE DESIGN
IN THE AGE OF UNICODE

Edited by John D. Berry

WITH A SPECIAL SECTION
SHOWING THE WINNERS IN BUKVA:RAZ!,
THE TYPE DESIGN COMPETITION
OF THE ASSOCIATION TYPOGRAPHIQUE
INTERNATIONALE

ATypI • Graphis
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Foreword

This book is a major project of the Association Typographique Internationale and is part of ATypI’s continuing outreach program. It is a monument to contemporary typographic creativity throughout the world. In these pages you will find examples of the best work that has taken place in typeface design over the five-year period 1996–2001. More than one hundred examples of typefaces, featuring fourteen different alphabets and writing systems, are displayed.

Since 1957, ATypI has been a forum and a catalyst to promote excellence in typography, type design, type technology, and education. More recently the work of ATypI has focused on its international conferences. These take place annually, each in a different city, thus far either in Europe or in the Americas. Each conference has been an evolving combination of discussion groups, forums, lectures, and exhibitions.

The main purpose of ATypI conferences has been to provide an environment where practitioners of the lettering arts can come together to share views and concerns and to find ways of promoting excellence in typographic communications. This has been accomplished effectively, but over time there has been considerable technological and market change, which has modified the demand for typefaces, the nature of typefaces that will be commercially successful, and the role of the people who design them and sell them.

ATypI members have become increasingly aware that the value of ATypI’s contribution and effectiveness can and must be enhanced by projecting its activities beyond the comparatively ephemeral nature of the conference environment. Other initiatives have been developed that have the quality of building blocks, thereby providing a more permanent structure to encourage growth and innovation within the Association. Among these building blocks has been ATypI’s publications program. There have been newsletters, journals, and books, but none on the scale of this project.

The idea for Language Culture Type started to develop in 1999. There were several strands that led us to our conclusion.
Language Culture Type

We wanted to find a way to promote cultural pluralism, encourage diversity, and provide a co-operative environment for the development of truly international typographic communications.

We were aware that the United Nations was planning 2001 as the Year of Dialogue among Civilizations, an important initiative that fit well with our own aspirations.

The idea of a well planned and internationally organized open competition, with enough winners to provide an outsider with a good sense of the trends in international typeface design, started to take shape.

It seemed an obvious choice to reach out beyond the conference, to make the competition happen, and to publish a book that would act as a comprehensive vehicle to show what we had found, and to explain its importance to a wider audience.

The result is this publication – but as with all the best projects, the story does not end here. This book represents not so much an end as a new beginning. Our survey of international type design over the last five years is reported in this book in such a way that we hope that it will have lasting relevance and continue to be a useful reference tool for many years to come. As a first attempt this is something of an experiment, but it is our intention to repeat this initiative in another five years. It will be interesting to compare developments over that time; not just in design trends, but also exploring the effect of cultural and political shifts.

Mark Batty
President, ATypI

Preface

Written communication around the world is accomplished almost entirely with type – not just in the traditional form of typography in books, magazines, and printed ephemera (advertisements, flyers, posters, tickets, labels, and so on) but on television and movie screens, in many kinds of public signage and wayfinding, and in all the myriad ways in which we now use digital fonts. The number of people who design type is small – a few hundred, perhaps – but the number who use it has become vast. Type matters.

Despite the dominance of English in the world today, and especially its preponderance on the Internet, only a portion of that global communication is done in English, or even in the Latin alphabet. The distribution of languages around the world is uneven, and any attempt to map them must of necessity lie, through oversimplification. People speak more than one language, whether well or badly; people move around, and learn or forget; people play with their language, making jargon and inventing new terms; people hear new words on television or radio, or in the local marketplace, and adapt them to their own use. Almost all the languages in the world today can be written, even those that were once purely oral; and once a language is written, there develops a constant back and forth between its written forms and its spoken forms, each influencing the other. In order to communicate in our many tongues, we need type.

The number of writing systems in the world is large, although a few have become especially widespread: the Latin alphabet, the Cyrillic, the Arabic; the Chinese ideographic system; Japanese syllabic writing; Devanagari and its relatives in India. Some scripts, such as the Hebrew and Greek alphabets, have a high profile even though the number of people speaking their languages is relatively small. Other writing systems are used by multitudes, but are not widely known outside their native areas.

All of these writing systems started out as handwriting, but today they are all reproduced – and widely read – as type. Now that we can send digital text to each other, we find ourselves up against a technological problem: how to make sure that the text we send can be read correctly when it is printed on paper, or when it appears on someone else’s
computer screen. Anyone who has tried to use accented characters in an
e-mail message knows how uncertain this can be.

The year 2001 was declared, by the United Nations, the "Year of
Dialogue among Civilizations." The events of 2001 made it clear just
how important that dialogue can be, and how much we suffer if it's re-
glected or misunderstood. As part of this Year of Dialogue, the Associa-
tion Typographique Internationale (ATypI) sponsored an international
competition for the best type designs of the previous five years — in all
alphabets and writing systems, used in any language, from anywhere in
the world. The competition was organized in New York and Moscow, an
office was set up in Moscow, and the whole project was given the some-
what playful name bukva:raz! ("letter:one!* in Russian). The judging was
done in December 2001 by an international jury of distinguished typog-
raphers and type designers, who chose the 100 best type designs out
of those submitted. The winning designs are shown in this book, along
with information on the typefaces and their designers. To put them in
context and provide some depth of information about a few of the dif-
ferent scripts shown here, we asked type experts from around the world
to write essays on several different writing systems and the problems of
designing type for them.

The voices heard in these essays are diverse and individual. This is
not a definitive "official" overview. In the spirit of the book's ecumenical
nature, we have made no attempt to homogenize them into a single style,
and we have followed the authors' preferences in using either American
or British spelling conventions. (For clarity, though, we have adopted
a consistent style of punctuation.) Although considerable thought has
been given over the years to coming up with agreed-upon definitions for
typographic terms like 'character', 'glyph', 'letter', and so on, we have left
it up to each writer to decide how to use them. The purpose of this loose-
ness is not to create cacophony, but to allow each voice to be heard in its
own cadences and accents.

The proportion of Latin and non-Latin typefaces among the bukva:
raz! winners is not a reflection of the distribution of scripts or typefaces
in the world. It is simply a reflection of the typefaces that were entered —
and, among those, of which ones the jury chose. Not surprisingly, in an
information world currently dominated by Western European languages,
there were more Latin typefaces than any other kind. But such things are
fluid; in another year, the mix might change. Language Culture Type is a
benchmark of where we stand today in both the craft and the technology
of making typefaces for use in global communication.

John D. Berry
Contributors

MIHAI BKKSTENK first fell in love with design attending night classes at Moscow Printing Institute in Russia. At the age of seventeen he moved to the United States with his family. While studying illustration at Rhode Island School of Design, he apprenticed with David R. Godine, Publisher, and there became infatuated with a well-made book and its typography. Upon graduating, he joined the design department of Alfred A. Knopf, Publisher. He recently returned to New York from a sabbatical he took to study the Talmud in Jerusalem, and presently designs books for Abbeville Press Publishers.

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JOHN HUDDSON designs type and is co-founder, with Ken Ross Mills, of Timo Typeworks, an independent digital font company specializing in text faces for multilingual and scholarly typography. Timo’s clients include Microsoft, Linotype Library, and Apple Computers. He has received awards in Cyrillic type design, and for his outstanding contribution to the development of Cyrillic typography and international typographic communication. He writes and lectures on type technology and font software, and as co-chair of the A TYPE Technology Committee he organizes the annual ATypI Font Technology Forum. Most recently, he has designed new Cyrillic, Greek and Hebrew typefaces, and helped redesign an Arabic newspaper face.

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