

# Writing After the Gaze:

## The Rupture of the Historical

Edited by  
Anna Chilewska  
&  
Sheena Wilson

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M.V. Dimic Research Institute  
University of Alberta  
2-28 Tory Building, Edmonton, Alberta, Canada T6G 4H4  
Ph: (780) 492-6424; Fax: (780) 492-8190  
E-mail: [earle.vaugh@ualberta.ca](mailto:earle.vaugh@ualberta.ca)

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## The state of the art: writing, technology and the world's languages

*Lenore A. Grenoble*

### Introduction

The majority of the world's languages are unwritten or preliterate, and literacy—defined as both reading and writing skills—is often cited as an important tool in language maintenance and revitalization. Yet at the same time there is a fair amount of controversy surrounding questions of how literacy should or could be implemented for indigenous languages, or what the impact of literacy will be on these languages and culture. In addition to playing a role in language revitalization and preservation, writing and literacy are vehicles for introducing another more dominant language and culture; it has been argued that literacy facilitates language shift. A closely related issue is the use of computers and the Internet. They are seen as offering new opportunities for indigenous languages. New technologies make it possible to produce written materials cheaply and quickly, to facilitate documentation, and—specifically—have the potential to create new domains for language usage. Every language revitalization program focuses on the need to create domains where the language is used; one of the biggest challenges is creating domains where the written form of the language must be used, in order for local language literacy to succeed. So the potential benefits of information technology (IT) would seem to be enormous. And yet again, the contradiction here is that IT is also directly linked to the globalization of a handful of languages at the expense of many others and plays a critical role in the spread of the world's majority languages. Thus for social and political advancement in the global world, IT has arguably made it necessary to know at least one global language (e.g. English) and eliminated, or at least reduced, the need to know other languages.

### Language Endangerment

While there is some question as to exactly how many languages will be lost over the course of this century—ranging from a

low of 25% to a high of 90%—there is widespread agreement that language loss is occurring at an unprecedented rate. (Crystal 2000, chapter 1, provides an overview discussion.) In response to concerns about language loss, UNESCO established an Ad Hoc Group of Experts to analyze the situation; this group reached the conclusion that at least 50% of the world's languages are losing speakers and that by the end of this century, a full 90% of the world's languages will disappear, replaced by more widely used (national and/or global) languages (UNESCO 2003). This conclusion stems from several considerations. First of all, approximately 6800 languages are spoken in the world today (Grimes 2000). There is a very uneven distribution between languages and speakers, with just a handful of languages are spoken by a very large percentage of the global population. This is indicated in Tables 1 and 2. Table 1 summarizes information on the distribution of first and second language speakers for the top ten languages. As indicated here, a very large majority of the world's population speaks just a very few languages:

**Table 1. The World's Largest Languages (from Grimes 2000)**

Language	Number of Speakers	
	1st-language	1st and 2nd-language
Mandarin	874,000,000	1,052,000,000
Hindi	366,000,000	487,000,000
Spanish	358,000,000	417,000,000
English	341,000,000	508,000,000
Arabic	215,402,900	—
Bengali	207,000,000	211,000,000
Portuguese	176,000,000	191,000,000
Russian	167,000,000	277,000,000
Japanese	125,000,000	126,000,000
German	100,000,000	128,000,000

The figure for Arabic was calculated by adding all varieties of Arabic listed in the *Ethnologue*, which is not strictly accurate,

as not all varieties are mutually intelligible and the differences between some varieties are more language-like than dialect-like. (For this same reason no second language speakers are listed for Arabic.) This calculation does, however, provide a benchmark estimation of the number of Arabic speakers world-wide. It is also worth noting that although English ranks fourth in terms of first-language speakers, it is second in terms of second-language speakers and there are predictions that second-language speakers will soon outnumber first-language speakers (Crystal 1997). It is also worth noting that the sum total of all varieties of Chinese accounts for about one sixth of the world's entire population.

It is also informative to look at the distribution of numbers of speakers with numbers of languages, as in Table 2:

**Table 2. Language/population distribution (adapted from Crystal 2000)**

number of speakers	number of languages	percent of	
		all languages	cumulative downwards %
<100 million	8	0.13	
10-99.9 million	72	1.2	1.3
1-9.9 million	239	3.9	5.2
100,000-999,999	795	13.1	18.3
10,000-99,999	1605	26.5	44.8
1000-9999	1782	29.4	74.2
100-999	1075	17.7	91.9
10-99	302	5.0	96.9
1-9	181	3.0	99.9

As seen in Table 2, only eight languages, or 0.1% of all languages, have more than 100 million speakers and over half of all languages have less than 10,000 speakers.<sup>1</sup> Perhaps even more striking is the relatively small number of all languages (5.2%) with over one million speakers. Although the total number of speakers is not the sole indicator of language vitality, it is certainly an important factor.

Finally, it is important to note that geographic distribution of languages is also very uneven, with the largest percentages of languages spoken in Asia and Africa, and a very small percentage (3%) in Europe:

**Table 3. Geographic distribution of languages (from Grimes 2000)**

	Total languages	living	Percentage
The Americas	1013		15%
Africa	2058		30%
Europe	230		3%
Asia	2197		32%
The Pacific	1311		19%
Total	6809		

[http://www.ethnologue.com/ethno\\_docs/distribution.asp](http://www.ethnologue.com/ethno_docs/distribution.asp)

The factors involved in assessing language endangerment or vitality are complex and have been discussed at length elsewhere (e.g. Crystal 2000; Fishman 1991, 2001; Grenoble and Whaley 1998; Nettle and Romaine; Robins and Uhlenbeck 1991). In an effort to bring together various viewpoints, UNESCO's Ad Hoc Expert Group on Endangered Languages established a list of nine factors determining language endangerment; this was ratified in 2003. The complete inventory of nine criteria determining the degree of language endangerment is as follows:

- (1) intergenerational transmission;
- (2) absolute number of speakers;
- (3) proportion of speakers within the total population;
- (4) trends in existing language domains;
- (5) response to new media;
- (6) materials for language education and literacy;
- (7) governmental and institutional attitudes and policies, including official status and use;
- (8) community members' attitudes toward their own language; and
- (9) amount and quality of documentation.

The UNESCO group did not rank these hierarchically although almost all linguists would agree that intergenerational transmission is the single most critical factor in determining language vitality versus endangerment. When children cease to learn the language, it is in danger. Factors 4-5 all have to do with the domains in which a language is used; domains are essential for language vitality. In essence, in order for a language to be healthy, it needs to be used, and the more domains in which it is used, the more vital it is. Points 5-7 involve some form of writing. Following the conclusions of the UNESCO ad hoc group, the more a language is spoken *and* written, and the more it enjoys the status of official use in government and education (both of which presuppose writing), the less likely it is to be threatened.

### The Impact of Globalization on Local Languages

Language endangerment involves the spread of some languages at the expense of others. Globalization is a factor in language endangerment as it puts great pressure on local languages. For many, globalization is equated with a homogenization of culture, or in particular a US-Americanization or spread of US culture. Linguists speak of globalization with reference to the world-wide use of one or more languages for global communication; English clearly tops the list. But social and political analysts, and economists, focus on globalization as an economic phenomenon whereby even the manufacturing of relatively simple goods takes place in multiple countries. For example, the documentary film *A Coat of Many Countries* (Freed 1999) documents the manufacturing of a man's suit coat across several continents. The wool comes from Australia, and is shipped to India where it is spun, died, and woven into cloth. The coat lining is made in South Korea, the buttons in Canada, and the shoulder pads in China. All these pieces are shipped to Russia—via Hamburg—for assembly. The suits are then sold in the US and Canada. Low transportation costs and rapid communication have made this possible. Of course, language is involved too: the language for negotiating all these transactions is English. In order to be part of the managerial staff to make this suit, one needs to speak English.

So the labor force is divided not only by levels of education but also by language knowledge.

One of the results of globalization is a division of the world into a core and a periphery, a conceptualization borrowed from political economists. In order to have access to the core, and perhaps more ideally to be a part of it—and thereby be a full participant and receive whatever its benefits are construed to be—one must have a command of the global language. A global language is thus an *international access language*. Critically, globalization does not provide a framework in which all countries, and all people, benefit equally, but rather increases the gap between the core and the periphery wider than ever. Under globalization, minority indigenous languages find themselves in part of tiered language structure, where the tiers represent spheres of influence and use. The local language or languages is at the lowest tier, with the national language(s) above. The domains of usage of national and local languages vary in individual situations. The national language is most often used in education, government and administration, and is the language of the law. In contrast, use of the local language is limited, both regionally and functionally. In some cases, it may be used only in the home. In others, it is additionally used at the level of village communication; and in others yet, for communication with different villages, and so on. The distribution of domains is one of the signs of language vitality; endangered languages are used in restricted or limited domains.

Mapping this onto particular communities, in many cases the global language and the national language coincide, and so the number of tiers here is two: the local language and the national/global language. This holds for Northern Native American languages where the national language—English—is clearly a global language. Yet in many parts of the world, where the national language has not reached the status of an international access language, the number of tiers is greater, ranging from three (local, national, global) to many more. The latter is seen in parts of Siberia, where local languages are divided into “majority” indigenous languages with some official status (such as Yakut or Buriat) and “minority” indigenous languages (such as Evenki or Chukchi). At

the same time there are regions with multiple national languages. In some areas in Sakha, for example, Evenki is used at the level of the village; Yakut at the Republic level; Russian at the national level and for States of the former Soviet Union; English at the global. To be able to function proficiently at each and every of these levels, a speaker needs to know four languages. Alternatively, in countries such as Canada, a speaker of a local language needs to know more than one national language. Examples are provided by any of the First Nations languages: a speaker of Mohawk or Cree, for example, needs to know French and English; this need for bilingualism at a national level is particularly true for those living in Québécois.

The nature of multilingualism in indigenous (or local communities) has been shaped by the dynamics of the multi-tiered use of language outlined here. High levels of multilingualism in local languages have not been unusual in certain parts of the world. Africa provides a prime example in large part because the Indo-European colonizing languages, although often the official or national languages of African countries, do not play a “pervasive” role in the day-to-day communications of local people, as use of the official languages is quite limited outside of the government (Dimmendaal 1998, 71). The result is that there are more domains open to local languages, and by the same token, the use of local languages is more central in everyday life, so that stable multilingualism is the norm. Outside of Africa, the importance of a national language generally results in a dominance of that language, in terms of access to education, higher paying jobs, and overall socio-economic advancement. National languages tend to take on the role of language of wider communication, which in turn diminishes the need to know a second or third language. Multilingualism is replaced by a need for more advanced knowledge of the national language.

The village of Gapun in Papua New Guinea provides another example (Nettle and Romaine 2000, 85–7). Historically, most community members were multilingual, and multilingualism was highly valued; it was a source of great pride and prestige. There was some demographic variation: in particular men are reported to have spoken several different local languages. In small communities, virtually everyone was multilingual, while in large communities; those

living in border regions (where language contact was predictably highest) were more likely to be multilingual than those with less contact. (This kind of variation was typical of highland communities.) Prior to European contact, multilingualism was routine; there was no social hierarchy of languages; all were equally valued. More recently, language shift is occurring away from the local language in Gapun (Taiap) to Tok Pisin, an English-based Creole. Tok Pisin is viewed by many local people as providing access to economic advancement and opportunities, and so Tok Pisin is spreading at the expense of local languages. This represents a marked shift away from multilingualism and from a non-hierarchical view of languages. Tok Pisin is seen as superior because knowledge of it may bring certain advantages.

These issues are related to writing and literacy in two critical ways. First, the domain of usage for a language is connected to questions of writing. For example, in order for a language to be a language of education *in the Western sense*, it needs to be written. Clearly, here I mean that specifically the language of instruction needs to be written. Even in Western-style schools, we can learn languages orally, but there is a fundamental difference between studying a language as a special subject and receiving one's education in that language. In Africa and Papua New Guinea multilinguals are not multiliterate—literacy exists only in the language of wider communication. This accounts for the spread of Swahili or Tok Pisin, for example. Second, there is a sense among many local peoples that writing *validates* a language and that languages, which are not written, are not “real” or “legitimate” languages.

### The Role of Literacy

The relationship between literacy (which includes both reading and writing skills) and language vitality is complicated in a global world. Literacy does not necessarily provide access to the core, but a lack of literacy can block access. Literacy in the global language is a necessary prerequisite to access because of the very nature of global communication (e.g. electronic mail and faxes, in addition to telephones). This is not a critical issue for the world's “major” languages, which are taught with literacy as a central

component; literacy in these languages is presupposed. It is, however, a significant issue for minority and endangered languages. If global access is deemed the goal, the question of which language one needs to know for access to the global community may be more pressing for some minority groups, specifically for those groups whose national language is not seen as having global importance. This decision is directly related to decisions about orthographies. Even among the top five languages (Table 1), there are several different writing systems: in addition to the Roman alphabet, the Arabic and Devānāgri alphabets, as well as Chinese characters. The writing system of the global (or national) language could potentially have an impact on the development of writing systems for endangered languages. Approximately 50% of the world's languages do not have any written form. Although it is difficult to calculate how many groups are in the process of developing (or are planning to develop) a writing system, some certainly are. Others are debating the advisability of investing the time and effort needed to create a written form of a language, teach it, and create domains for its usage when speakers feel a more pressing need to read and write in some language of wider communication. Some of the groups, which are developing written forms, have chosen, for efficiency and learnability, to use the writing system of the global or other majority language. Alternatively, others might choose a different system, so as to distance themselves from a given group. Clearly, native-tongue literacy is not a requirement for national-language education, or for global access. And some, such as Mühlhäusler (1996, 219) argue that vernacular literacy is, more often than not, a transitional literacy which expedites acquisition of the more established national languages and so not only hastens, but actually facilitates, language shift. This is not the predominant position, however, and many minority groups feel the need for establishing written forms and using them as important elements in their language revitalization or maintenance programs. Given that attitude, certain factors need to be considered if one wishes either to distance or to align oneself with the global community.

Writing is an act of identity. Orthographic systems are symbolic at multiple level and different orthographies can be chosen

deliberately to distinguish a group from others or, alternatively, to associate with others. The use of Arabic script, for example, creates a sense of pan-Islamic identity which goes beyond language. The modern use of Cyrillic for Serbian and the Latin alphabet for Croatian is not just the result of history, but also a modern statement of religion and ethnicity. Attitudes toward colonizing languages are especially important, and any efforts to develop an orthography must take into account people's desire to align themselves with or distance themselves from previous colonial powers. The influence and prestige of Spanish in Latin America has meant that Spanish orthographic conventions also have a high prestige simply because the act of writing is associated with Spanish. As a result, Spanish spelling can get in the way of more linguistic-based systems for many indigenous languages. In Zapotec, for example, the phonemic inventory is considerably greater than in Spanish, which would suggest the need for a greater number of letters or symbols to write Zapotec (Munro and Lopez 2003). When written in accordance with Spanish orthographic conventions, a range of phonemic contrasts in Zapotec is not distinguished. Yet many Zapotec prefer to do just that, under the influence of the prestige of written Spanish. It is a good lesson for linguists who like orthographies to be phonetically designed, on the basic principle that each individual phone should be represented by a single grapheme, the one sound = one symbol principle. As the Zapotec case suggests, local considerations can and sometimes should override this principle; there have been failed attempts at developing writing systems (e.g. Coreguiae; Gralow 1981) precisely because the linguists designing them have ignored such concerns. This is not to suggest that the influence of the colonizing language will always work in this way: some Mayan groups have deliberately distinguished their orthography from Spanish by including in it selected ancient Mayan glyphs in order to build a sense of pride and unity behind their alphabet. They have also wanted to change their alphabet to be distinctive in order to isolate themselves from the Western religious, intellectual, and economic influences which permeated their literature published in a Spanish-based orthography.<sup>2</sup> Further evidence that orthographic systems in particular, and writing in general, are markers of identity comes from

the very fact that so many different groups have worked to develop their own alphabets, syllabaries, and other graphemic systems.

Many discussions of literacy and writing focus on the ways that speakers written texts *encode* meaning yet issues of how speakers decode such meaning are equally important, and fundamental differences occur at varying proficiency. Beginning readers read primarily by decoding sounds while more advanced readers recognize larger units of meaning such as the word or phrase (Dawson 1989; Gordon 1986; Rogers 1995). This has obvious implications for native-tongue literacy and for developing writing systems for fluent speakers of a language. Advanced reading skills may favor certain systems which encode meaning at the lexical level, and so override the domination of the one sound = one symbol principle. The importance for developing writing systems for endangered languages has been less studied, and less attention has been paid to the pedagogical issues of designing writing systems for "speakers" who do not have full fluency in the local language or who are second-language learners. In particular it is important to consider questions of potential interference of the orthographic conventions of the well-established (or more dominant) language upon the reading and writing skills in the local language. In order to better understand the relationship between local and global languages, literacy and language vitality, we can consider two concrete examples, Māori and Evenki,<sup>3</sup> in some detail.

#### Case Study #1: Māori (Austronesian, New Zealand)

The first is the Māori language of New Zealand. Use of Māori was established in New Zealand in approximately 1000AD through migrations when the Maori people arrived on what had been an uninhabited island, thereby establishing it as the only indigenous language of New Zealand. Contact with Europeans did not occur until 1642, with heavier contact beginning in the late 1700s. Until more recent immigrations which have established Samoan as the largest non-European ethnic group in New Zealand, Māori were in contact (and in conflict) with white English-speaking settlers. From the standpoint of language loss and revitalization, it is the opposition

between English and Māori which is critical, and in particular the fact that there were the only two competing languages.

An orthography for Māori was established in 1818 by missionaries to New Zealand who took an active role in the development of Māori literacy. Their active involvement has led to two very different conclusions from the modern standpoint. First, the development of literacy education was highly successful and it has, in fact, been argued that by 1830 literacy rates were proportionally higher for the Māori segment of the population than those of the English-speaking population (Biggs 1968, 73). One result is that Māori people have a wide range of written materials of a variety of types and in this respect can be seen as having established a literary history.<sup>4</sup> It has even been claimed to be the largest body of writing from an indigenous group from within one century of European contact (Orbell 1995). In consequence the Māori have access to the kinds of language materials which simply do not exist for many other local languages. Another is that the notion of literacy is by no means new or foreign to Māori speakers, and that the introduction of a vigorous language revitalization program did not entail a major cultural shift with regard to literacy. At the same time, a second major impact of the early literacy movement led by missionaries to New Zealand was that the high literacy rates arguably facilitated the shift to English (Mühlhäusler 1990, 1996). During the first few decades of contact, Māori was decidedly at an advantage. The early mission schools conducted all education in Māori, and all correspondence between the English-speaking officials and the Māori people was in Māori. The situation changed very quickly. The 1867 Native Schools Act made English the sole language of instruction in the schools. Thus within less than fifty years of active Māori literacy, it was banned from use in the schools. English replaced Māori in government and official spheres as well, and Māori use went into decline.

Ultimately by the 1970's the state of Māori was serious.<sup>5</sup> Although there were still a relatively large number of speakers (some 70,000), they accounted for only 20% of the population or less, and almost all were over the age of 50 (Benton 1981,15). One of the primary problems for vitality of the language was that its use was

essentially limited to two domains: the *marae* (the traditional Māori tribal meeting place) and the church. Recognizing the necessity of intergenerational transmission, language nests, Te Kōhanga Reo, were created in the 1980s to transmit language from the older generation to the youngest generations of children. The Kōhanga Reo language nests began by bringing fluent elders to the preschools, to work with the young children and teach them to speak and live Māori. The schools can technically accept children anywhere from birth to age 6, although many leave at age 5 to attend regular schools. Their success created a need for alternate systems for primary and secondary schools. In 1985 the first Kura Kaupapa Māori, a total-immersion program, was established. Students in Kura Kaupapa Māori receive all instruction in Māori, and a principle underlying the schools is the commitment to teaching within a Māori philosophical framework, to "affirm Māori culture."

The orthography established in the nineteenth century is still in use for Māori today. One of the few controversies is the way to signal vocalic length orthographically. The alphabet is largely phonetic and uses only 15 symbols, including 2 digraphs: {consonants: h, k, m, n, p, r, t, v, wh, ng; vowels: a, e, o, i, u}. Vowels are phonemically long or short; long vowels are written in one of three possible ways. The most widely accepted format now is the use of the macron (1a), but some tribes (*iwi*) prefer to double the letters, or what is commonly called "double vowels" (1b):

(1a)	<i>the marae:</i>	keke	cake	runa	ribbonwood
		keke,	runa		
		kekē	creak	rūna	earthquake
		kekee,	ruuna		
		kēkē	armpit	rūnā	pull together
		keeke,	ruunaa		

(1b) *doubling:*

Alternatively some advocate not marking vocalic length at all. A quick look at several different introductory Māori textbooks shows all three methods in use: Ryan (1979) uses the macron; Biggs (1998) uses double letters; Harawira (1997) does not mark vocalic length. The point here is that how an individual chooses to signal or not signal



vocalic length is an act of identity and alignment with certain groups within the Māori community.

The programs seem to have achieved positive results. According to a 1995 study, 60% of Māori adults spoke some Māori, but 83% had low fluency or did not speak it. English was the main language of 80% of Māori homes. (These figures are based on a sample survey of 2441 Māori adults about Māori language proficiency, acquisition, use, and attitudes, conducted by Te Puni Kokiri (The Ministry of Māori Development), Te Taura Whiri I Te Reo Māori (Māori Language Commission), and Statistics New Zealand; see Spolsky 2003, fn 30). Subsequently a survey conducted as part of the 1996 New Zealand census showed that of a total of 523,371 Māori (or 15% of total New Zealand population), 25% of total number of Māori said they could converse in Māori. These respondents were over 55 or under 15. This figure of fluency was based on what was called an unaided self-rating assessment and includes proxy ratings for those under 15 (Spolsky 2003, fn 31). The structure of the school programs would account for the age gap in speakers.

The Māori program has served as more than a model: it has been an inspiration to a number of different groups. Despite its successes, it still seems to have failed to create sufficient domains for language use. The primary domain for written Māori is the school. Newspapers are not published in Māori, although a news page is printed in some rural areas. Māori literature is not published, although some traditional texts and saying are available. Māori is now one of two official languages in New Zealand, and occurs on written signs along with English. This has tremendous symbolic value, but does not guarantee that anyone reads the Māori. In terms of spoken domains, again the school is the primary place to speak and hear Māori. It is spoken in some homes in rural areas, but my general sense is that that is very limited. Radio broadcasts are at best limited and there is currently no television programming. That said, there are major attempts underway to create new domains for spoken Māori and to revitalize more traditional ones, such as the *marae*.

### Case Study #2: Evenki (Tungus, Siberia)

Tungus languages are characterized by complex dialect variation, as the people are traditionally nomadic, have heavy contact with speakers of other languages and, in the Soviet period, were settled into relatively small and isolated villages. For this reason, their stories provide interesting illustrations of the difficulties in creating a single, codified norm which cuts across regional variation.

Evenki is the most populous of the Siberian Tungus groups. The ethnic population is estimated at some 30,000, with Evenki living throughout much of Siberia. The largest portion—approximately 42.5% of the total Evenki population—lives in the Republic of Sakha. Another 12% in the Evenki Autonomous District, 13% in the Khabarovsk Territory, and the remaining 33% is scattered in the Regions of Amur, Chitin, Irkutsk, Sakhalin, and Tomsk (Bulatova et al. 1997, 15). Language vitality and interest in language revitalization varies from region to region. In general, at a local level it is used only in those villages where Evenki live in relatively dense groups *and* have maintained a traditional lifestyle. At a regional level, Evenki in Sakha have shown a strong tendency to shift to either Yakut, the regional language, or Russian, the national language. A 1992 survey showed that only 16% of Evenki living in Sakha (about 600 people) still used Evenki. Of those aged 30-50 in the Aldan region, for example, some 50% claimed not to know Evenki at all; 30% claimed knowledge of individual words; and only 20% claimed passive comprehension (Myreeva 1993, 72-3, cited in Vakhtin 2001, 180-1).

The history of Evenki provides insight into the overall decline of local languages throughout Siberia. The 1926 Soviet census shows a population of 37,545, with just under 64% claiming fluency in Evenki (or Tungus) at this time.<sup>6</sup> When the Soviet government came into power, illiteracy rates in Siberia were high and a number of languages indigenous to the region were targeted for “development.” Teams of linguists were sent, primarily from Leningrad, to undertake this work. Soviet language policy makers set as one of their goals the creation a single “Northern” alphabet for all languages of the North. The resulting Roman-based Unified Northern Alphabet (*edini severni alfavit*), officially adopted in November 1929, was further accepted and ratified in 1931. The idea behind the single alphabet was that it

would simplify the literacy process and unite the speakers of Siberian languages, with one another and with their counterparts living abroad (e.g. Saami in Finland and elsewhere, and the Aleuts in the United States).

One of the languages targeted for development was Evenki, a Tungus language spoken over much of central and eastern Siberia. In 1931 written language was established for Evenki using the Roman-based orthography, on the basis of the Nepa dialect spoken in the Irkutsk region. In the years 1936-37, the alphabet was changed to Cyrillic, with minor modifications of Russian Cyrillic. In 1952, the dialect basis of the standardized language was shifted to a slightly different variant, the Poligus dialect. The dialects chosen were selected by virtue of being spoken in a geographically central area and for relative mutual intelligibility. There is no published explanation of the shift from the Nepa dialect to the Poligus dialect. It is difficult to determine the full impact of this shift at this point in time, but it seems to have been negligible as the two dialects were very similar phonetically and lexically. More important than minor changes in the standard language, however, was the fact that it had failed to become established as a norm which cut across dialects.

The change from a Roman-based orthographic system to Cyrillic would certainly have had a major impact when it occurred. Clearly, use of Cyrillic would facilitate acquisition of Russian literacy. Whether that is the primary cause is less clear, but Evenki today are considerably more literate in Russian than in Evenki. Other orthographic issues might include some inconsistencies in the Cyrillic used for Evenki sounds not found in Russian, in particular the velar nasal and what is described as a pharyngeal. Vocalic length, phonemic in Evenki, is generally not marked. As in Māori, the published pedagogical materials are inconsistent.<sup>7</sup> The other major orthographic differences include use of the Cyrillic *β* for the bilabial fricative in Evenki, and a variety of symbols for the velar nasal. The preface to Keptuke (1991) speaks directly to both these points, with an explanation that the letter *β* is used rather than the usual Cyrillic *x* for the pharyngeal, to bring the orthography more in line with actual pronunciation. (Keptuke actually adds an additional letter for the voiced velar fricative, which does not have its own orthographic

symbol in standard written Evenki.) She also notes the issue of marking vocalic length, with the comment that notation for length makes the text harder to read. Instead, she argues that native speakers should be able to recognize words in their context. In this her thinking may be influenced by Russian printing conventions, which do not mark stress, despite the fact that it is phonemic in Russian (and is noted in standard Russian dictionaries). These inconsistencies are relatively minor and can be readily tolerated by fluent speakers. For second-language learners, in particular the omission of vocalic length in all of these publications is problematic, since it is not found in Russian and can be difficult to hear. Yet given the overall levels of Evenki attrition, it is unreasonable to assume that children (or other readers, for that matter) will recognize vocalic length. Rather, current levels of language knowledge suggest that it needs to be memorized by language learners.

Despite these difficulties, orthography is not really the central cause of the lack of Evenki literacy. It is, rather, symptomatic of the failure of Evenki literacy to be established as a viable, living literacy. One problem is the failure to create a standard variety that is intelligible and acceptable to the speakers who might use it. Even more critical in this case is the failure to create a context for the use of written Evenki. Instead, it has remained an artificial construct, taught in the schools to a limited degree. The language of writing is Russian. Those communities which have higher retention rates of Evenki still maintain a traditional lifestyle, and continue to hunt and herd reindeer. People in these groups frequently comment on the need to know if Evenki if one is to tend the herds: Evenki is the language for herding. Similarly, in communities with a practicing shaman, there are stronger ties to the culture and language than elsewhere. Evenki is simply not viewed by its speakers as a language for writing.

### The Internet, Technology and Writing Local Languages

The internet and IT represent the most dramatic change to writing in decades. The speed at which written messages can be transmitted and delivered, the possibilities of creating different fonts for different orthographic systems, and the promise of relatively

inexpensive publication and dissemination make IT especially attractive for endangered languages. In North America in particular, IT is seen as having the potential to create new domains for language use. The view is that the internet and IT offer new possibilities for solving the very problems (such as limited domains and lack of resources to create written materials) which fuel language endangerment.

To date, however, much of this promise has yet to be realized. In large part this failure stems from an overall lack of resources and lack of access to the internet and IT. Access to personal computers is relatively limited world-wide; and despite the rapid spread of direct internet connections in private homes in Northern America and parts of Europe, the majority of the world still relies on phone lines for access to the internet. Recent studies show that a full 65% of the world's 950 million households do not have a telephone. There is a very uneven distribution of phone lines, with more than 90% of the households in wealthy countries have one, and many have more than one line.<sup>8</sup> Within the US, internet access is uneven, with a dichotomy dependent upon annual income and rural versus urban living: a high-income household in an urban area more than 20 times likely to have internet access. Indigenous groups are particularly underrepresented in terms of telephone access in the US. Only 82.8% of Native Americans (including Alaskans) living in rural areas have telephone lines; of that same group living at low income levels, only 64.3% have a telephone. Thus that group which we might suspect to be holding onto its language most tenaciously in the US (i.e. rural Native Americans) probably does not have Internet access. This means that the Internet cannot serve them as a resource for creating language programs or for creating a cyber language community. And at the same time, they do not have access as to the Internet as a link to global information and the global economy (see also Grenoble 2003). Moreover, even where there is access to the Internet, proficiency at using its resources varies from community to community (Hargattai 2002); simply having access to the Internet does not imply that it can be used to its full potential.

The long-term impact of the Internet and global communications is difficult to assess. Relative isolation actually

fosters language maintenance and vitality; at present Internet access is more likely to provide an entryway for a global language than it is for a local language. A very high percentage of Internet content is in English: a study published in 1999 reported that 90% of all Internet content was in English. This has changed just over the last few years, dropping to 68% in 2004, but English still dominates:

**Table 4. Web Content by Language (Global Reach, 14 January 2004)**

<i>Web content, by language</i>	
English	68.4%
Japanese	5.9%
German	5.8%
Chinese	3.9%
French	3.0%
Spanish	2.4%
Russian	1.9%
Italian	1.6%
Portuguese	1.4%
Korean	1.3%
Other	4.6%

Beyond the dominance of English on the internet, it is striking that ten languages account for 95.6% of all internet content, a fact which is all the more remarkable in that there is not an exact match between internet content and the top ten languages in terms of speakers (in descending order: Mandarin, Hindi, Spanish, English, Arabic, Bengali, Portuguese, Russian, Japanese, and German; see Table 1). Spanish, for example, accounts for approximately 358,000,000 speakers, but represents only 2.4% of Internet content; Hindi, the second largest language in terms of speakers, is presumably included in the "other" category for Internet content.

#### **Conclusion: Writing, Literacy and Language**

In conclusion, it is often argued that the potential hazards of globalization for local communities are outweighed by its potential

economic benefits and that the rapid development and spread of IT, which it upon it depends, offer exciting new possibilities for language communities. In particular, IT is seen as making possible critical written materials for the development of the endangered local language. These include reading materials, dictionaries, textbooks, and descriptive, all of which can be published and disseminated quickly and inexpensively in electronic format. It also can make accessible previously published materials and archives, as in the case of the Māori newspaper database, *Niupapa Maori*. Moreover, the Internet is argued to offer the potential for a cyber speech community, which will strengthen the now greatly diminished traditional speech communities. Such possibilities do exist with IT, but given that these resources are usually not available to minority indigenous communities, it has yet to fulfill its promise for them.

Most groups wishing to maintain or to revitalize their language will ultimately conclude that literacy in that language is necessary to thrive in the modern world. This is a decision supported by the UNESCO ad hoc group of experts, and literacy is at the core of many current revitalization programs. Yet the act of creating a written form does not in and of itself guarantee vitality, as seen in the two case studies presented here, Evenki and Māori. Literacy has benefited Māori in creating greater documentation and in creating a tradition of reading and writing that could be renewed when language revitalization began. I do not see that literacy has benefited Evenki, except indirectly, since in the process of creating a written language, linguists were required to document and study the language.

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### Endnotes

- <sup>1</sup> The discrepancies between Tables 1 and 2 have in part to do with the calculation of Arabic.
- <sup>2</sup> Further examples are provided by Bird (2000) and Hornberger (1995).
- <sup>3</sup> These case studies are further developed in Grenoble and Whaley, forthcoming.
- <sup>4</sup> Such resources include the impressive electronic database of Maori newspapers, *Niuepa Maori*, which is bad on 34 separate periodicals dated 1842 to 1933. 55 percent of the collection (some 17,000 pages of printed matter) is written solely in Maori, while another 43 percent is bilingual. Only 2 percent of the collection is in English. The database is available from LEARN <http://www2.auckland.ac.nz/lbr>
- <sup>5</sup> For a more comprehensive account of the history of the progressive attrition of Māori and the circumstances which contributed to it, see Jeannette King (2001).
- <sup>6</sup> These figures are somewhat unreliable, as there were a number of classification problems with the census. For example, Negidal were grouped together with Evenki, and Manegirs were treated separately, so these figures should be taken as a ballpark estimate.
- <sup>7</sup> Often such decisions were based on the availability (or lack) of certain characters at the press. The more widespread use of computers and camera-ready copy may alleviate this problem, or it may lead to an even greater proliferation of fonts. The current general trend toward Unicode for all fonts, including the freely downloadable SIL fonts ([www.sil.org](http://www.sil.org)) is an important step toward alleviating this situation.
- <sup>8</sup> Burn and Loch (2001) predicted that by 2000, more than half of US households would have two phone lines, a prediction I have been unable to verify but is potentially accurate.