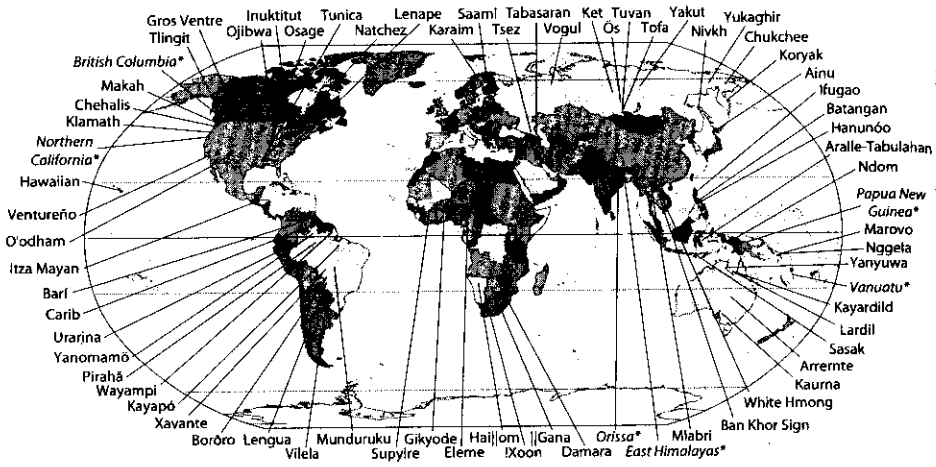
Endangered and extinct tongues mentioned in this book



*Hotspots of language diversity

Northern California: Pomo, Yuki, Yurok, Wiyot

British Columbia: Bella Coola, Carrier, Halkomelem, Squamish

East Himalayas: Bantawa, Lepcha, Sherpa, Thulung, Yakkha

Orissa: Ho, Sora, Parengi, Remo

Papua New Guinea: Aiome, Yagwoia, Baruga, Bukiyip, Huli Kalam, Kaluli, Kewa, Kobon, Loboda, Ndom Rotokas, Vanimo, Wampar, Yupno

Vanuatu: Araki, Aneityum, Lolovoli, Sie

The 101 languages mapped here comprise less than 1.5% of the total languages in the world. Locations are approximate.

1 A World of Many (Fewer) Voices

You've come too late to learn our language, you should have come earlier. Nowadays we are a numbered people.
—Marta Kongarayeva (born 1930), Tofa speaker

The last speakers of probably half of the world's languages are alive today.[1] As they grow old and die, their voices will fall silent. Their children and grandchildren—by overwhelming majority—will either choose not to learn or will be deprived of the opportunity to learn the ancestral language. Most of the world's languages have never been written down anywhere or scientifically described. We do not even know what exactly we stand to lose—for science, for humanity, for posterity—when languages die. An immense edifice of human knowledge, painstakingly assembled over millennia by countless minds, is eroding, vanishing into oblivion.

In the year 2001, as the second millennium came to a close, at least 6,912 distinct human languages were spoken worldwide.[2] Many linguists now predict that by the end of our current twenty-first century—the year 2101—only about half of these languages may still be spoken. How do we know this? It follows from unrelenting demographic facts and the passage of time. The problem also has a very human face, and in this book we will take a closer look at the lives, experiences, and opinions of last speakers.

In 2005, fully 204 languages had speaker communities numbering fewer than 10 people, a dire scenario. An additional 344 languages had between 10 and 99 speakers. As their speakers grow old and die, these languages too will descend into the fewer-than-10-speakers demographic. The 548 languages with fewer than 99 speakers make up nearly one-tenth of the world's languages, and all are faced with almost certain disappearance. Only in the unlikeliest of scenarios can we expect any of these languages to be transmitted to younger generation speakers or to gain new speakers. Even larger languages, such as Navajo with nearly 150,000 speakers, may find themselves in jeopardy, suggesting that population size alone is no guarantee of security.[3]

What does it feel like to speak a language with 10 or fewer speakers? For people like Vasya Gabov of Siberia, who at age 54 is the youngest fluent speaker of his native Ös language, it means to feel isolated and to rarely have an opportunity to speak one's native tongue. It means to be nearly invisible, surrounded by speakers of another, dominant language who do

Figure 1.1
Yuri and Anna Baydashev and I in Central Siberia in 2003. The Baydashevs are the last known household where a married couple speaks to each other in Ös, a language with less than 30 speakers remaining. By 2005, Yuri had suffered a significant hearing loss, limiting his ability to communicate. Photograph by Gregory Anderson, July 2003

not even acknowledge yours. Speakers in this situation tend to forget words, idioms, and grammatical rules due to lack of practice. When asked to speak, for example, by visiting linguists hoping to document the language, they struggle to find words. Ös is now spoken by fewer than 30 individuals, and it is the daily, household language of just a single family. All other speakers reside in households where Russian serves as the medium of most conversations. In this situation, one shared by speakers of thousands of small languages worldwide, it becomes hard to be heard, hard not to forget, hard not to become invisible.

At the current pace, we stand to lose a language about every 10 days for the foreseeable future. Ös will surely be among them. Given life expectancy figures in Russia, we could predict Ös to be gone by the year 2015. All across the world, the loss is accelerating. You do not need to go to Amazonia or Siberia to observe language death; it is going on all around us. As I write this book, I am sitting in my office on the campus of Swarthmore College, near Philadelphia, just 500 yards from the banks of the Crum Creek. 'The Crum' as locals call it, was once home to the Okehocking Lenape Indian tribe. Their language, Lenape, was once spoken by dozens of tribes or bands inhabiting the Delaware valley, New Jersey, and Pennsylvania. The tribe was later forcibly relocated to Oklahoma, where Lenape reportedly still had 5 speakers left in 1996. At that time, the question *"ktalënixsi hàch?"*—"Do you speak Lenape?" was one that might still be asked and answered "*e-e*"—"Yes."[4] But by 2004 not a single speaker remained among the tribe's 10,500 registered members.[5] Languages in our own backyard and in remote corners of the globe vanish apace.

Crowded Out

Languages do not literally 'die' or go 'extinct', since they are not living organisms. Rather, they are crowded out by bigger languages. Small tongues get abandoned by their speakers, who stop using them in favor of a more dominant, more prestigious, or more widely known tongue. We lack an appropriate technical term to describe people abandoning complex systems of knowledge like languages. So we rely on metaphors, calling it 'language death', 'language shift', 'threatened languages', 'extinction', 'last words', or 'vanishing voices'.[6] Some prefer to say that languages like Tunica, once spoken by native Americans in Alabama, or Wampanoag,

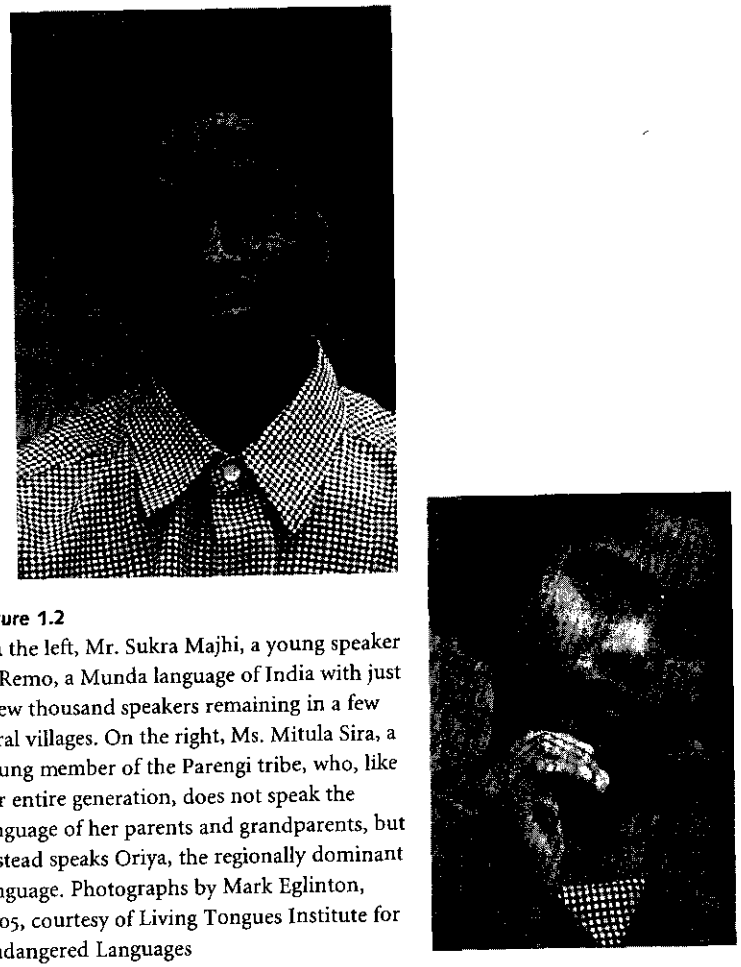


Figure 1.2
On the left, Mr. Sukra Majhi, a young speaker of Remo, a Munda language of India with just a few thousand speakers remaining in a few rural villages. On the right, Ms. Mitula Sira, a young member of the Parengi tribe, who, like her entire generation, does not speak the language of her parents and grandparents, but instead speaks Oriya, the regionally dominant language. Photographs by Mark Eglinton, 2005, courtesy of Living Tongues Institute for Endangered Languages

once spoken by the Mashpee Wampanoag people of Cape Cod, are merely 'sleeping' or 'dormant' and may be 'awakened', 'retrieved', or 'revived' in some hoped-for future.[7]

Extending the biological metaphor, language disappearance only superficially resembles species extinction. Animal species are complex, have evolved over long periods of time, possess unique traits, and have adapted to a specific ecological niche. An extinct dodo bird can be stuffed by taxidermists and displayed in a museum after all its kind are dead and gone. But a stuffed dodo is no substitute for a thriving dodo population. Languages, too, have adapted over time to serve the needs of a particular population in their environment. They have been shaped by people to serve as repositories for cultural knowledge, efficiently packaged and readily transmittable across generations. Like dodo birds in museums, languages may be preserved in dictionaries and books after they are no longer spoken. But a grammar book or dictionary is but a dim reflection of the richness of a spoken tongue in its native social setting.

The accelerating extinction of languages on a global scale has no precedent in human history. And while it is not exactly equivalent to biological extinction of endangered species, it is happening much faster, making species extinction rates look trivial by comparison. Scientists' best estimates show that since the year 1600 the planet lost a full 484 animal species, while 654 plant species were recorded as having gone extinct.[8] Of course, these are underestimates. But even so, they make up less than 7 percent of the total number of identified plant and animal species. Compared to this, the estimated 40 percent of languages that are endangered is a staggering figure. Languages are far more threatened than birds (11% threatened, endangered, or extinct), mammals (18%), fish (5%), or plants (8%).[9]

Language disappearance is an erosion or extinction of ideas, of ways of knowing, and ways of talking about the world and human experience. Linguist Ken Hale, who worked on many endangered languages up until his death in 2001, told a reporter: "When you lose a language, you lose a culture, intellectual wealth, a work of art. It's like dropping a bomb on a museum, the Louvre." Even Hale's metaphor does not go far enough. We simply do not know what we stand to lose with the loss of a single language. This book attempts to answer the question "When a language dies, what is lost?"

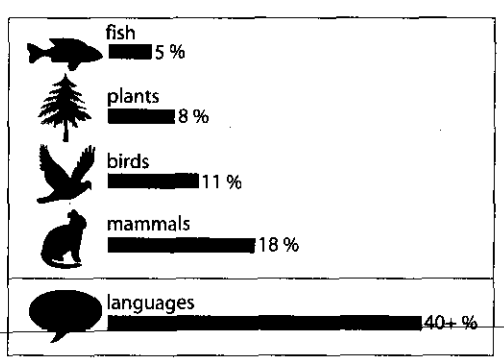


Figure 1.3
Known levels of endangerment in animal and plant groups, and for comparison in human languages (based on data in Sutherland 2003).

Why Speak Tofa?

But first let us ask "How are languages lost?" Looking around the globe, we see populations of people shifting *en masse* from speaking the language of their parents to speaking something else. As people exchange an ancestral tongue for the dominant language of their countries, they become culturally assimilated, linguistically homogenized. There are several recognized stages to the process.

Language death typically begins with political or social discrimination against a language or its speakers. This may take the form of official state policies to suppress speech, or it may be benign neglect. Constantine Mukhaev, one of the last speakers of the Tofa language of Siberia, recalls being punished for speaking his native tongue instead of Russian in school. "When I was a child they sent us to the village school. Lessons were in Russian only, and I couldn't understand anything. The teacher . . . used to beat me when I couldn't answer in Russian. In the mornings, he would test his stick to see if it was supple enough to hit us with."[10]

Faced with such pressures, young speakers like Constantine may abandon their ancestral language. When they grow up, they may fail (or refuse) to transmit it to their children. Many factors can interrupt successful language transmission, but it is rarely the result of free will. The decision tends to be made by the very youngest speakers, 6- and 7-year-olds, under duress or social pressure, and these children then influence the speech behavior of adults in the community.[11] These youngest speakers—acting as tiny social barometers—are acutely sensitive to the disfavored status of their elders' language and may choose to speak the more dominant tongue. Once this happens, the decision tends to be irreversible. A language no longer being learned by children as their native tongue is known as 'moribund'. Its days are numbered, as speakers grow elderly and die and no new speakers appear to take their places.

Once a language is moribund, it continues to decline as its use becomes more restricted. It may be spoken only in the home, or only among elders, or at ceremonial events. As they fall silent, elderly speakers become invisible, lacking any linguistic difference that would set them apart from the people surrounding them. At the same time, they begin to forget.

Science and Sentiment

Scientists try to avoid being sentimental about what they study. But in working with speakers of disappearing languages, it is hard not to take seriously their own feelings of sadness, regret, even anger at the fate of their language. Svetlana D., one of the last speakers of Tofa, told me in 2001: "The other day my daughter asked me, 'Mom, why didn't you teach us Tofa?' . . . I don't know why. Such a beautiful, difficult language! Now it is all forgotten."

Not all last speakers show such emotions: some are resigned to fate; others think of language shift as progress and do not want their children to speak an obscure and politically inferior tongue.[12] A younger member of the Tofa community told me: "It's useless to try to understand what the old people are saying." Due to attitudes both inside and outside the community, last speakers often share a sense of isolation and invisibility. Language ceases to be language when it is not used for human conversation.

Language loss is an issue that affected communities feel deeply about. Having completed ten years of fieldwork among endangered language communities, I write with a sense of deep empathy for the plight of last speakers and their soon to be lost knowledge. However, the disappearance of languages is both a social and a scientific reality.

On the social front, many individuals and communities have mounted energetic efforts to preserve, transmit, reclaim, revive, and revitalize languages, knowing that languages only thrive in communities of speakers. Much has been written about these efforts, for example in a book entitled *How to Keep Your Language Alive* by Leanne Hinton and in *The Green Book of Language Revitalization in Practice*.[13] Such projects must be supported and expanded.

The goal of this book is to pursue hard scientific questions, while keeping the human factor in view. On the scientific front, our knowledge is still quite imperfect as to how and why language death occurs, or how individual decisions made by children ripple through societies to create a tidal wave of change. We also lack a clear understanding of what exactly is being lost—is it unique, irreplaceable knowledge, or merely common sense knowledge uniquely packaged? Could such knowledge ever be adequately captured in books and video recordings in the absence of any speakers? Once vanished, can such knowledge be re-created, will it re-emerge spontaneously after a

while, or is it forever unrecoverable? This book is an attempt to shed light on these complex questions from a scientific perspective. Linguists and anthropologists have set out to see what science may learn from these knowledge systems while they are still functioning and available for study. Scientists seek to document human knowledge in order to gain a better understanding of our place in the universe. The fact that bodies of knowledge are rapidly passing into forgetfulness makes that task urgent, but it is really no different than other scientific pursuits, for example, the rush to document animal species before they pass into extinction.[14]

While science may also serve the needs of the speech community, this is not scientists' primary goal. Despite the best of intentions, outsiders cannot 'save' or 'rescue' languages or reverse the trend. No one but speakers themselves can preserve languages, since there is no such thing as a living human language without speakers (this includes sign languages, as discussed in chapter 7). Often even speakers' best efforts cannot bring a language back from the brink. What scientists can do is to capture an accurate record in the form of recordings and analyses. These may prove useful to future scientists, future societies, children of heritage-language speakers, and, perhaps even new generations of speakers.

Dire predictions call for a reduction of the world's languages by half in the twenty-first century. Others are more optimistic, citing the resilience of some small languages and modest achievements in revitalizing others. No matter what, several thousand languages may already be at a point where no efforts can arrest the downward trend. If that is the case, then in the interest of science and humanity we must document what we can while we still can.

Hotspots of Language Diversity

The natural state of human beings—harking back to our hunter-gatherer past—was to live in small bands. This is an ideal situation for language diversity because as each group goes off on its own its speech is free to change rapidly within the group. If one group splits into two, the pace of language change is rapid enough that within just eight or ten generations they may have difficulty communicating. Within two to three centuries, mutual comprehensibility can be lost—where one language was, now there are two.

We often find the greatest diversity in parts of the globe where populations are small and sparsely distributed. For example, the 65 inhabited islands of Vanuatu (together about the size of the state of Connecticut) support 109 distinct tongues in a population of just 205,000 people. That is one entire language for every 1,880 speakers.

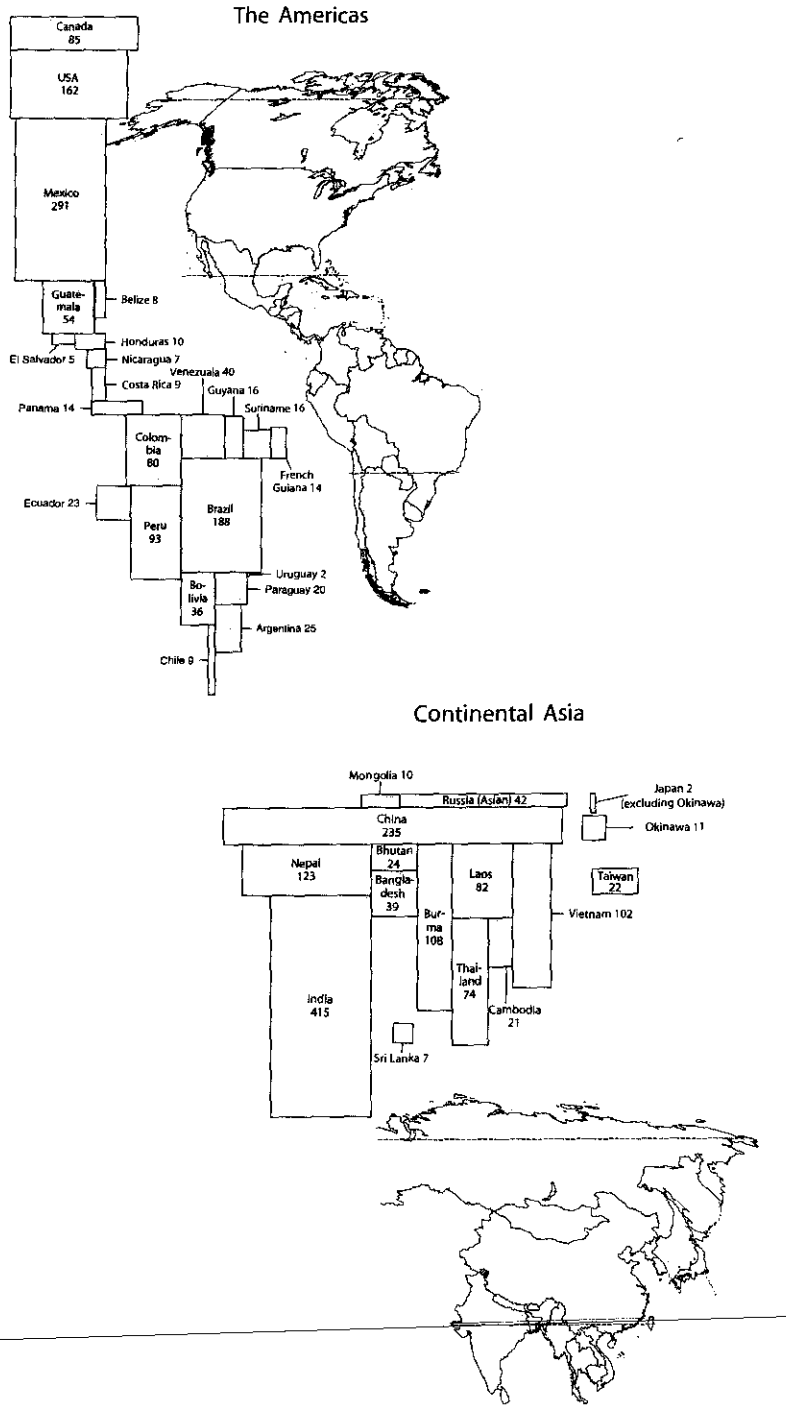
The vast deserts of Chad, inhabited by many nomadic groups, support 132 tongues in a population of 9.8 million. These languages enjoy much larger speaker bases, an average of 74,000 each. Like islands, this enormous and sparsely populated desert land, with just over 12 persons per square mile, appears also to encourage linguistic diversity.[15]

Even in America, we see great diversity in Alaska, immense and sparsely populated, with just 1 person per average square mile. Alaska's native population of 86,000 commands 21 languages—most spoken nowhere else on earth.[16] Alaska now has a majority English-speaking population of 640,000 people. Small islands of languages are being submerged in a rising sea of English.

Unlike Alaska, Chad, and Vanuatu, the countries of Western Europe have very little linguistic diversity. They are home to a single large family of related tongues, all belonging to the Indo-European family that stretches from Ireland across Eurasia to India. The sole exception in Western Europe is Basque, spoken in Spain and France, which is an 'isolate' language having no known relatives. Tiny Vanuatu has more languages, with comparable diversity, than all of Western Europe.

The map in figure 1.4 depicts countries of Asia, Oceania, and the Americas sized according to their numbers of indigenous languages. Although it is hard to define exactly what the term 'indigenous' means, people who have inhabited a particular land since before recorded history and have a strong ecological engagement with that land may be considered indigenous. There is clearly a link between language diversity and the presence of indigenous people.

Indigenous cultures and languages are among the most threatened globally. The distribution of linguistic diversity is related to the distribution of indigenous peoples across the globe. Both distributions are highly skewed. As figure 1.4 shows, Papua New Guinea and Indonesia's Irian Jaya loom immensely large as the home to the greatest numbers of indigenous peoples and languages. Nepal, Vanuatu, and Australia, with relatively small populations, also look large on this map because they are so linguistically diverse. The main islands of Japan, with more than a



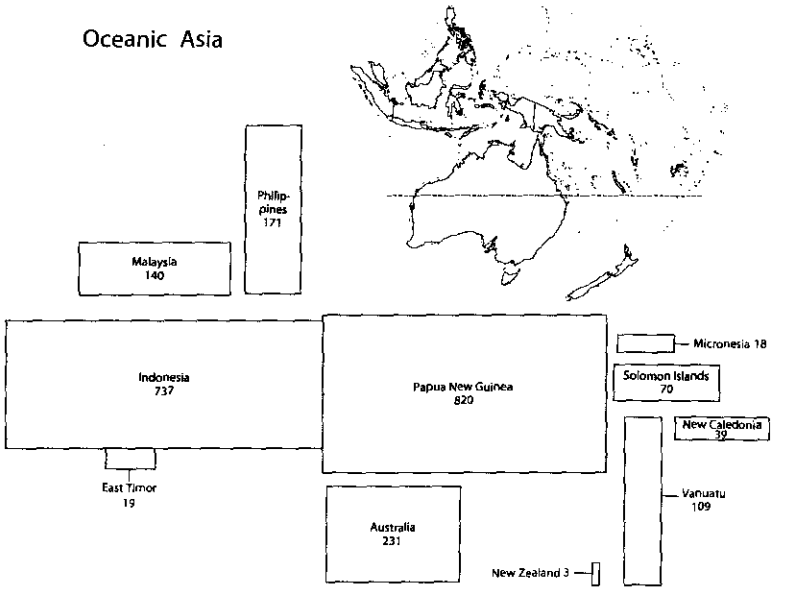


Figure 1.4 ***(facing and above)***
Selected countries of Asia and the Americas sized by number of indigenous languages. Data from Gordon 2005.

hundred million speakers, appear minuscule because they have almost no diversity with only two thriving indigenous languages—Japanese and Japanese Sign Language—and nearly extinct Ainu.

Unequal Speaker Bases

The world's 6.34 billion people speak, at latest count, 6,912 languages.[17] If speakers were divided evenly among languages, each tongue would have 917,000 speakers. But languages are surprisingly unequal in their demographic distribution. The top 10 biggest languages have hundreds of millions of speakers each, accounting for just over 50 percent of humans. If we expand this set to include the top 83 languages, we have covered nearly 80 percent of the world's population.

The smallest half of the world's languages—consisting of more than 3,500 languages—are spoken by a mere 0.2 percent of the global popula-

tion. These include very small languages like Tofa (30 speakers in Siberia), Vilela (2 speakers in Argentina), and Makah (extinct in Washington State as of 2002, but there are some speakers with partial knowledge of it and some people are now learning it as a second language). The median number of speakers for a human language is only about 5,000 people. Half the world's languages have fewer than 5,000 speakers, placing them in a potentially precarious situation.

As people in minority communities seek to advance in their societies, they often feel they must do so by assimilating, giving up ancestral languages and having their children speak only the national tongues. As unequal as the current distribution looks, these pyramids will look even more imbalanced by the year 2020.

Human population is predicted to level off in this century, likely averting a global overpopulation crisis. This is attributed to the fact that as people become more urbanized, no matter what their economic well-being, they tend to have fewer children.[18] But ongoing global migration to urban centers spells more trouble for small languages. In crowded urban spaces, small languages usually lose the conditions they need for survival. There are cases where a small language can co-exist in a stable balance with big one over a long period of time, but these are rare.[19] Urbanization is growing worldwide, and it will be the death of language diversity.

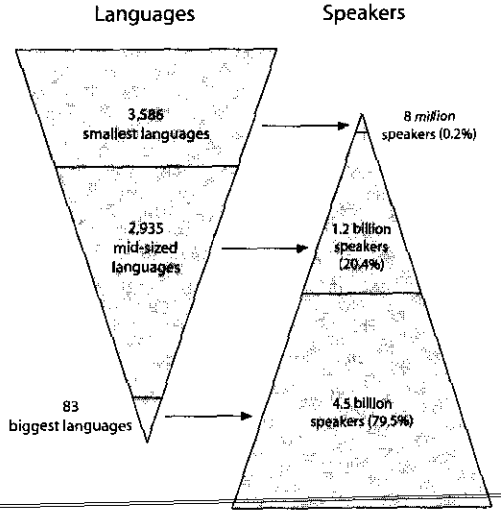


Figure 1.5
The unequal proportion between the number of languages and how many speakers those languages have.

The Eroding Human Knowledge Base

What exactly do we stand to lose when languages vanish? It has become a cliché to talk about a cure for cancer that may be found in the Amazon rainforest, perhaps from a medicinal plant known only to local shamans.[20] But pharmaceutical companies have spared no efforts to get at this knowledge, and in many cases have exploited it to develop useful drugs. An estimated $85 billion in profits per year is made by pharmaceutical companies on medicines derived from plants first known to indigenous peoples for their healing properties.[21]

By credible estimates, an astonishing 87 percent of the world's living plant and animal species have not yet been identified, named, described, or classified by modern science.[22] This number excludes tiny microbes, leaving only organisms large enough to have been observed by the naked eye. It behooves us to look to indigenous cultures to fill in our vast knowledge gap about the natural world. But can they retain their knowledge in the face of global linguistic homogenization?

The human knowledge base extends far beyond uses for medicinal plants. Knowledge systems we explore in this book include fish, reindeer, moon phases, wind patterns, and rice plants. Societies that rely on nature for survival have developed technologies to cultivate, domesticate, and exploit such resources. The fact that we now have modern farming, laboratories, calendars, and libraries does not render traditional knowledge obsolete. If anything, our need for traditional knowledge becomes ever more acute as we strain the planet's carrying capacity.

Much—if not most—of what humankind knows about the natural world lies completely outside of science textbooks, libraries, and databases, existing only in unwritten languages in people's memories. It is only one generation away from extinction and always in jeopardy of not being passed on. This immense knowledge base remains largely unexplored and uncatalogued. We can only hope to access it if the people who possess and nurture it can be encouraged to continue to do so.

If people feel their knowledge is worth keeping, they will do so. If they are told, or come to believe, that it is useless in the modern world, they may well abandon it. Traditional knowledge is not always easily transferred from small, endangered languages to large global ones. How can that be true if any idea is expressible in any language? Couldn't Solomon islanders talk about fish schooling behavior in English just as easily as in Marovo?[23] Do

Figure 1.6
An elder of the Ifugao people of the Philippines observes the rice harvest with her son (August 2001). Traditional rice knowledge and cultivation techniques are under threat as new technologies encroach. Photograph by K. David Harrison

the native Seri people of Mexico really need any tongue other than Spanish to describe sea-turtle hibernation and mating cycles?[24] I argue that when small communities abandon their languages and switch to English or Spanish, there is also massive disruption of the transfer of traditional knowledge across generations. This arises in part from the way knowledge is packaged in a particular language.

Consider Western !Xoon, a small language of Namibia (the exclamation mark is a click sound). In !Xoon, clouds are called 'rain houses'.[25] By learning the word for cloud, a !Xoon-speaking child automatically gets (for free) the extra information that clouds contain and are the source of rain. An English child, learning the word 'cloud', or a French child learning '*nuage*' gets no information about rain and has to learn on her own, by observation or by instruction, that rain comes from clouds.

We can find examples like these from more complex systems, like the reindeer classification of native Siberians discussed in the next chapter. I will argue that the disappearance of languages will cause a massive erosion of the human knowledge base precisely because systems like reindeer classification will vanish. When it does, so will important, long-cultivated knowledge that has guided human–environment interaction for millennia. We stand to lose the accumulated wisdom and observations of generations of people about the natural world, plants, animals, weather, soil, and so on. The loss will be incalculable, the knowledge mostly unrecoverable.

Cultural Heritage

Another answer to "What is lost?" is our human cultural heritage. Where would we be without the traditional wisdom found in oral history, poetry, epic tales, creation stories, jokes, riddles, wise sayings, and lullabies? These genres—the product of human ingenuity, wordplay, and creativity—may be found in all languages. But as I show in chapter 5, the vast majority of human languages have never been written down. Their verbal arts thus exist only in memory and are especially vulnerable to forgetting as languages go extinct.

There is nothing so sacred in a culture that it cannot be forgotten. The Tofa people of Siberia no longer remember the creation myth they once believed. The tale involved a duck and went something like this:

In the very beginning there were no people, there was nothing at all.
There was only the first duck, she was flying along.
Having settled down for the night, the duck laid an egg.
Then, her egg broke.
The liquid of her egg poured out and formed a lake.
And the egg shell became earth.
And that is how the earth was created.

Tofa has only about 30 elderly speakers, and their creation myth is already lost to memory. In three field expeditions among the Tofa and dozens of interviews with elderly last speakers, I was unable to find a single one who could recite the duck creation story. A few acknowledged that there had been such a story, but none could recount it to their grandchildren.

We may be indifferent to the passing of the Tofa duck story, but all mythical traditions are attempts to make sense of the universe. Each one provides a small piece to the puzzle of how humans understand life, the

Figure 1.7
Constantine Mukhaev (born 1948), with his mother Anna Mukhaeva (born 1916), are among the last 30 speakers of Tofa. Here, Constantine tells a traditional Tofa fable about a lost bird. Photographs by K. David Harrison, June 2001

universe, and the sacred. Without the Tofa creation duck, we are surely missing a piece of that puzzle.[26]

Human Cognition

Languages reveal the limits and possibilities of human cognition—how the mind works. A third answer to the question "What is lost?" has to do with our scientific understanding of the human mind. Every normal human being is capable of language, yet everybody speaks differently and has different things to say. Underneath this Babel lie deep similarities in the way human brains process speech and information. A primary goal of linguistics, as a scientific field, is to uncover universal properties of all human languages. When we discover them, linguists believe, we have learned something about the building blocks and very architecture of human thought.

But to advance their science, linguists need data that can only come from speakers of languages. If linguists had only major world languages

to study, say Japanese, Hindi, and Spanish, we would be severely handicapped in understanding human cognition. Linguists sorely need the oddest, quirkiest, and most unusual languages and words to test our theoretical models. Many times linguists' assumptions have been challenged (if not flatly contradicted) by the discovery of odd structures in languages not previously documented.

Urarina, a language spoken by fewer than 3,000 people in the Amazon jungle of Peru, has unusual word order. An Urarina sentence containing three elements in the following order:

Kinkajou's bag + steal + spider monkey

is understood to mean "The spider monkey steals the kinkajou's bag." Urarina places the direct object first, the verb second, and the subject last.[27] Other word order patterns are much more common. English uses subject-verb-object (S-V-O), but this is not the only possibility. Turkish and German put the verb last, using subject-object-verb (S-O-V) order. Welsh is V-S-O, putting verb first, subject second and object last (read + I + book = "I read the book").

But the Urarina O-V-S word order is vanishingly rare among the world's languages. Were it not for Urarina and a few other Amazonian languages, scientists might not even suspect it were possible. They would be free to hypothesize—falsely—that O-V-S word order was cognitively impossible, that the human brain could not process it. Small languages hold in store many more surprises for science, some of which are discussed in chapter 7. Each new grammar pattern we find sheds light on how the human brain creates language. The loss of even one language may forever close the door to a full understanding of human cognitive capacity.

Our Greatest Conservation Challenge

We have seen at least three compelling reasons to safeguard and document vanishing languages. First is the fact that our human knowledge base is rapidly eroding. Most of what humans have learned over the millennia about how to thrive on this planet is encapsulated in threatened languages. If we let them slip away, we may compromise our very ability to survive as our ballooning human population strains earth's ecosystems. A second reason is our rich patrimony of human cultural heritage, including myth

and belief systems, wisdom, poetry, songs, and epic tales. Allowing our own history to be erased, we condemn ourselves to a cultural amnesia that may undermine our sense of purpose and our ability to live in peace with diverse peoples. A third reason is the great puzzle of human cognition, and our ability to understand how the mind organizes and processes information. Much of the human mind is still a black box. We cannot discern its inner workings—and we can often only know its thoughts by what comes out of it in the form of speech. Obscure languages hold at least some of the keys to unlocking the mind. For all these reasons, and with the possibility of dire consequences for failure, documenting endangered languages while they may still be heard, and revitalizing tongues that still may be viable, must be viewed as the greatest conservation challenge of our generation.

Speaking for Themselves

Science is about trying to understand humankind and our place in the universe. Since language is unique to humans, linguistic science attempts to understand our uniquely human capacity. In analyzing cognitive systems, it is easy to become very abstract, technical, and detached. But the real story of endangered languages revolves around speakers, and what they have to say for themselves. We should take care, in the course of a scientific discussion of language extinction, not to lose sight of real people, their experiences, attitudes, and opinions.

To highlight native perspectives on language extinction, I will present throughout this book the views of speakers of endangered languages with whom I have worked. In six short case studies, we will meet the nomadic Monchak people of Mongolia and the Tofa, reindeer herders of south Siberia. Later we encounter the Ös, fishermen of central Siberia, then the Ifugao, rice cultivators of the Philippines, the Karaim, a minority Turkic people of Lithuania, and finally the Munda tribal people of Northeast India. This is not a balanced selection, but it represents communities and individuals with whom I have worked closely. Each person has a story to tell, in a tongue understood by fewer and fewer people each passing year.

One such individual, Mr. Vasya Gabov, whose story is told in chapter 5, told me how he had been made to feel ashamed as a child in the first grade for being native, different, and for speaking his own native Ös tongue. The shame he felt on the playground made him decide not to pass Ös on

to his own four children. But in 2003, now one of the last remaining speakers, he asserted: "I will never throw away my language. I still speak it!"

Marta Kongaraev, a member of the tiny Tofa nation, commented to me how oppressive government policies had wiped out her language: "they wrongly banned our language—that's why the young people don't know it now. It's not their fault, it's the fault of those fools in the government."

Marta's sentiments were echoed by her brother-in-law Spartak Kongaraev, who recalled a time when native dress and speech were banned and Tofa people were forced to assimilate to majority Soviet (Russian) culture: "In the 1950s there was an official order not to speak Tofa too much, only Russian. Now there are many people who have forgotten it; they can't speak, they can't even sing. I still know how to sing, I haven't forgotten it yet." Many small indigenous groups like the Tofa, the Ös, and others express dismay, even anger, at the way their language and culture has been eradicated. Tales like these reflect the history of colonialism and oppression of small groups by larger ones all across the globe and throughout modern history.

The massive language die-off we now face is one of the greatest results of colonialism—the grand project to govern, control, and proselytize non-European peoples. But the die-off is also the result of natural demographic factors. As our world shrinks and we become overcrowded, people migrate of their own free will to cities to enhance their livelihoods. In crowded conditions like those of Bangkok, Mexico City, or New York, global homogenization of language seems all but inevitable.

Among the many of last speakers of a dozen endangered languages I have interviewed in places like Russia, Mongolia, Lithuania, the Philippines, and New York City, only a few were shy or reticent. The vast majority, I found, were delighted that someone showed an interest. And they were more than happy to share songs, stories, traditional knowledge, even jokes. Their wisdom and resilience moved me deeply, both as a human being and as a scientist. With this book, I feel that I have a unique opportunity to share some of their stories with others whom they will never meet. The purpose of this book is to explore scientific questions. But at its heart lies much that I have learned from talking with last speakers and from listening to their wisdom.