Introduction

I fell in love for the first time at four years old. Her name was Shirley and we were both in a piano class. She wore burgundy overalls, which I for some reason found immensely charming (I seriously doubt if she actually wore these overalls every day as if she were a *Peanuts* character, but that's how she is preserved in my memory); she had laughing brown eyes and a high-spirited yet intelligent demeanor. I was intoxicated and, as it happened, we got along quite well.

I'm not sure of exactly what kind of trajectory I imagined us to be on, but whatever it was, it was upward–until one day after a lesson when we went outside to join our respective parents. Watching her joyously greet her family, I was shocked to hear that as soon as she started talking to them, I couldn't understand what they were saying! This was the first time in my life that I had ever known that there were languages other than English, and it remains the profoundest shock I have ever encountered in my entire life. They were clearly communicating, just as I was with my mother, but *I couldn't understand what they were saying!*

For me, this was not only shocking but heartbreaking, because I felt that Shirley's newly revealed ability cut her off from me, that she had gone somewhere I couldn't go. "What are they doing, Mom?" I asked frantically. "They're speaking another language, Jughead!" she answered ("Jughead" was a pet name). "What do you mean? Where did they learn how to do that?" I persisted. Mom went over and asked Shirley's relatives politely, "Excuse me, what language are you speaking?" "We are speaking Hebrew," intoned one of them. Mom came back to me and said, "They're speaking

Hebrew." "But why don't we speak Hebrew, Mom?" She answered, "Because we're not Jewish. Can we go home now?" And so we did.

But on the way home in the car, I was so frustrated that I cried like the child that I was–partly because I felt that this revelation had lost me the girl of my dreams and partly because I was absolutely dazzled by the idea that there were ways of speaking that I could not understand, that there were *other* ways to talk, that a person could be able to talk in *two* ways, and that I had been denied that ability by not being, well, Jewish (that's as far as I could understand it at this point).

As it happened, a Hebrew school met in the late afternoons in the building where I went to school, and I became so obsessed with my language deficit that I left a note on the blackboard for the rabbi (as directed by my teacher) asking him how I, too, could learn Hebrew. He left me a flyer with the Hebrew alphabet on it (actually, for some reason, the alphabet as used for Yiddish), which was a princely thing to do considering that he could have just ignored my missive entirely. With this flyer and a cute Hebrew-language children's picture dictionary that Mom dug up somewhere for me, I learned to sound out Hebrew (I was that kind of a kid), and that was enough for me then; it didn't occur to me that I didn't really know what I was reading or that I couldn't actually put together sentences of my own.

This was the beginning of a lifelong obsession with foreign languages. The next step was realizing that Hebrew wasn't the only language not spoken in our house. In the back of a dictionary we had, there was an appendix with a good five thousand or so words translated into French, Spanish, Italian, German, Swedish, and (for some reason) Yiddish. I decided that it was imperative that "Twinkle, Twinkle, Little Star" be translated into all six but thought that all you had to do was plug in the words into their English slots. I knew nothing of conjugation or agreement or that grammars differ from language to language. I still have that first "book" that I wrote, with deathless poetry such as the Spanish rendition: *Centellear, Centellear, Pequeño estrella, Cómo yo preguntarse, Qué tu ser.* . . . As I got older I began to teach myself languages in earnest as a hobby (the key to getting decent at it is to talk to yourself in the shower) and was eventually fortunate enough to be able to support myself on my passion by becoming a linguist. To this day, I have the flyer with the Hebrew (actually Yiddish) alphabet (the "Alef-Baze") framed and hanging over my desk, as a symbol of what sparked my combination career and avocation. Although I have long since realized that our family was hardly unique in not using Hebrew in the home and that learning a language entails more than mastering a collection of undigested words, after all these years the true roots of my fascination with language remain the same as on that day on a Philadelphia sidewalk when I lost my innocence: that anything I write or say in this language can be said in about six thousand other ways, with completely different words and with grammars so different that they can almost strain the credulity of the outsider.

Yet all of these languages are spoken by members of the same subspecies, *Homo sapiens sapiens,* to accomplish the same tasks of communication of information, expression of emotion and attitude, commanding and requesting, social libation, calibration of power relations, and poetic expression. This sort of variation within the bounds of a template is analogous to hearing the different uses to which Art Tatum, Coleman Hawkins, or Lionel Hampton could put the chord sequence and basic melody of "Body and Soul" or to seeing the many faces of the little Stephen Foster song "Shortnin' Bread," depending on whether it is sung by a classically trained mezzo from the original sheet music, warbled by Ethel Mertz at a small-town concert on *I Love Lucy,* or swung by the orchestra accompanying a Bugs Bunny cartoon. Ask someone who speaks a language other than English natively how to say *I sank into the mud up to my ankles,* and figure out what the words actually mean. The variety among the words themselves is wonder enough, but the multitude of sentence patterns in which human beings can express that homely concept are Art Tatum, Vivian Vance, and beyond: *Am intrat in noroi până la glezne* (I have entered in mud up to ankles [Romanian]); *Ich bin bis zu meinen Knöcheln im Schlamm versunken* (I am until the ankles in the mud sunk [German]); *Ja provalilsja v grjaz' po ščikolotku* (I sank-self in mud at ankle [Russian]); *Doro no naka ni askikubi made tsukatte shimatta* (mud of within at ankle until soaked put-away [Japanese]); *Bikwaakoganaaning ingii-apiichi-gagwaanagwajiishkiwese* (knob-bone-at I-extending to-"mudmoved" [Ojibwe, or "Chippewa"]), and so on.

Properly speaking, though, what interests me is not this variety alone, but the variety as seen within a certain context: the fact that all of this variety is the product of evolution from a single original source. It's not an accident that this aspect of language has held my

obsessive attention for so long, as I have always had a bizarre native fascination with the evolutionary aspect of everything. If losing Shirley to Hebrew remains the starkest moment of revelation in my life thus far, the second starkest was when I was about eight years old and caught an episode of that magnificent antique *The Honeymooners* on television. This was my first perception of television shows as falling upon a chronological timeline, as well as my first conscious exposure to the fact that details of American social mores, customs, and fashions change in the course of a century, and I found myself transfixed by the difference between this "old" world and the world of the 1970s (at that age, that twenty-year gap in time felt the way a fifty-year one does now). This time it was my father who had to bear my frantic questions: "Why does it look so scratchy and blurry?" "Why is it in black and white?" "Why are the women dressed that way?" "Why was that joke funny?" "Why is nobody black?" "If he loves her, why does he keep yelling at her like that?" "Why did she kiss him at the end if he's so mean?" "Why don't they ever leave that room?" "Why is the music so ugly?" (My father's answers to these questions were perfect and truly worth another book in themselves, but I digress.)

What grabbed me about *The Honeymooners* was the basic question: How did you get from there to here? How did you get from the black-and-white, claustrophobic, misogynstic vaudeville of that show to one quite current at the time, the sociologically sophisticated world of *Maude,* where the women were in charge, the script was witty, and action alternated between three rooms and was in color to boot? What were the intermediate steps? (*The Dick Van Dyke Show* was one, as I would learn later.) In the same way, the variety among the world's languages is all the more marvelous in that it is the product of a process of six thousand imperceptibly gradual transformations of what began as a single language. To wit, there was a brief shining moment in human history when I would not have lost Shirley to another language, for the simple reason that only one language existed.

Of course, in this hypothetical period during which the course of true love would have run more smoothly for Shirley and me, the two of us would have been naked, hairy, of the same race, outdoors, and in Africa, and we would be much more likely to have met digging for grubs or running from something than taking piano lessons. Deducing from a combination of data from archaeology, paleontology, molecular biology, and anatomical reconstruction, we can be almost certain that the first human beings to speak language as we know it today lived in East Africa about 150,000 years ago.

What do I mean by "language as we know it"? To understand this requires awareness of two things. First, human language differs sharply in a qualitative sense from the various levels of communicative ability, marvelous in themselves, possessed by some animals. Bees can tell other bees where honey is located by a butt-waggling dance. Chimpanzees and other apes can be trained to use a rudimentary kind of sign language. Parrots have been trained to match words to concepts. Some animals have specific cries warning their comrades against predators. We have all seen how dogs can learn to recognize a dozen or so words (you had to make sure to always spell the word *walk* in the presence of one dog I knew, because otherwise even saying "I think she wanted him to take a walk on the wild side" would lead him to spend the next two minutes jumping in ecstatic frustration waiting to be taken outside).

However, human language is unique in its ability to communicate or convey an open-ended volume of concepts: we are not limited to talking about exactly where honey is, to warning each other that something is coming to try to eat us, or to matching vocalizations to fifty-odd basic concepts pertaining to our immediate surroundings and usually focusing on bananas and desire. Neither bees, chimps, parrots nor dogs could produce or perceive a sentence such as "Did you know that there are squid fifty feet and longer in the deep sea? They have only been seen as corpses washed up on beaches." Because animals can only communicate about either things in the immediate environment or a small set of things genetically programmed ("The honey is over there," "A leopard is coming," "Banana!"), they could not tell each other about giant squid even if they had seen one, nor could they "talk" about corpses even if they had seen plenty. Then there is the specificity for which human language is designed: no animal could specify that the squid have been seen in the past, rather than being seen right now, nor could they communicate the concept of "knowing" in "Did you know . . . ?"

Not only are no animals remotely capable of communication on this level (and, if you think about it, even those sentences about giant squid are not exactly Proust) but none even approximate it: there are no animals that could even pull off "Once I met a huge

animal" or the concept of "washed up on" or even the concept of "once" in the sense of "one instance in the past." There is a vast gulf in complexity, subtlety, and flexibility between human beings and other animals in regard to language ability, and that gulf is a large part of why humans have been such a successful species of such disproportionate influence on this planet.

The second thing to keep in mind about "language as we know it" is that language is as sophisticated in all human cultures and is thus truly a trait of the species, not of a certain "civilized" subset of the species. In other words, in this book, "language" is not shorthand for just the languages encoded in newspapers, serving as vehicles of great literature, used on the Internet, and taught badly by Berlitz (for decades, the first sentence in the Berlitz English self-teacher for Spanish speakers was the indispensable and warmly natural "Have you a book?"). One might quite reasonably suppose that a First World culture with tall buildings, cappuccino, and Pokémon would have a grammatically "richer" language, necessary to convey the particular complexities inherent to our treadmill to oblivion, whereas preliterate cultures such as, say, those in the Amazon rain forest would have "simpler" languages for simpler lives. "Bunga bunga bunga!!!!" as the "natives" say in old cartoons.

Ironically, however, if there is any difference along these lines, it is the opposite: the more remote and "primitive" the culture, the more likely the language is to be bristling with constructions and declensions and exceptions and bizarre sounds that leave an English speaker wondering how anyone could actually speak the language without running the risk of a stroke. Meanwhile, many of the hotshot "airport" languages are rather simple in many ways in comparison with the "National Geographic" cultures' languages: English, Spanish, and Japanese grammar are "Romper Room" compared with almost any language spoken by the hunter-gatherers who first inhabited the Americas. In short, one could inform one's friend about giant squid and how they have been encountered in all six thousand of the world's languages with all of the nuance and precision with which we could express these ideas in English.

Thus "language" in this book is not a shorthand designation either for how Westerners talk when wearing their Sunday best or for writing. For our purposes, "language" is perhaps most appropriately symbolized by a rain forest inhabitant speaking while seated

near a cooking fire. The "language" that this book is about is the spontaneous and, at base, oral phenomenon that, even in what we might perceive as its homeliest guises, is of a complexity distinguishing our communicative abilities from those of any animal and that worldwide displays a marvelous sophistication not correlative in any way with level of societal development.

We may never know exactly when human language arose. However, as mentioned earlier, deduction suggests that it has most likely existed for about 150,000 years. Archaeological and fossil remains of human beings suggest that some feature possessed by *Homo sapiens* beyond simple brain size was crucial in enabling this species to take over the world. While the brains of earlier species of the genus *Homo,* such as *habilis* and the later, more sophisticated *erectus,* became increasingly larger over the millennia, no cultural development accompanied this increase in brain size. Human existence was typified by *Homo erectus* in northern China, who, in linguist Derek Bickerton's irreplaceable description, "sat for 0.3 million years in the drafty, smoky caves of Zhoukoudian, cooking bats over smoldering embers and waiting for the caves to fill up with their own garbage." Only with *Homo sapiens* do we see an abrupt cultural explosion: symbolic artifacts buried in graves, evidence of nomadic life styles following game instead of maintaining one home base and traveling farther to reach the game when it migrated (which appears to have been typical of Neandertals, who died out in the face of *sapiens*), and, by 35,000 years ago, a major turn in the intricacy of tools.

As Bickerton has argued, all of these things suggest a fundamental transformation in mental ability toward the symbolic kind of cognition which underlies human language. If language arose approximately when *sapiens* did, then a combination of the fossil record and modern comparative genetic analysis can point us to language's time of origin. Specifically, our oldest *Homo sapiens* fossils come from, as it happens, Shirley's homeland, Israel, as well as South Africa, in both cases dated at about 100,000 years old. The hominid fossil record is notoriously fragmentary, such that we may very well find older *sapiens* fossils in the future. Until then, comparative genetic analysis allows us to trace the species back somewhat farther, having repeatedly placed the origins of modern humans in East Africa between 150,000 and 200,000 years ago. Thus it would appear that human language can be traced back at least 150,000 years.

Yet there remains the problem that only just 35,000 years ago do we see the kinds of cultural explosions among human beings that mark them as indisputably "us." The possibility theoretically remains, then, that language did *not* arise right when *sapiens* did, but instead only arose, say, 35,000 years ago.

However, other evidence suggests the earlier date. Especially important here is evidence that human language is to some extent genetically coded. How specific and detailed this innate inheritance may be is controversial (for the innatist view, see Steven Pinker's *The Language Instinct;* for particularly cogent alternative viewpoints, see Terrence W. Deacon's *The Symbolic Species* or the especially lucid *Educating Eve* by Geoffrey Sampson). But various indications suggest that human beings are at least genetically predisposed to acquire and use language. One indication is that damage to specific areas of the brain can have highly particular effects on language ability (one kind of damage leaves people using words without their meanings; other kinds interfere with people's ability to use endings or sometimes *particular types* of endings; etc.). This suggests that language is not entirely just a conditioned skill grafted onto more general aspects of cognition and that our brains have evolved in a direction uniquely suitable to processing language. Another indication is that babies babble spontaneously in all cultures, regardless of whether the culture is predisposed to "goo goo" at them or "teach" them to talk (all are not).

In regard to dating human language, what is important here is that if this genetic instruction or predisposition for language is real, then it must have been created by a mutation. In this light, it is more economical to reconstruct that such a mutation occurred once in the stem population of *Homo sapiens* 150,000-odd years ago and was then passed on to all descendants, rather than emerging at various later times in separate offshoot populations. Indeed, some traits can mutate into existence separately throughout the world, such as the development of eyes or the power of flight. However, if the development of language were susceptible to convergent evolution in this way, we would expect that at least one or two other species had evolved or would be evolving a similar ability, and yet there is not the slightest sign that they ever have or will. No baboon colonies that talk have been smoked out; no mice or ducks or rabbits that converse (much less wear white gloves and pay taxes) have been encountered. This suggests that language was a particularly unique mutation most likely to have occurred once.

This argument becomes even more compelling given that, if language had emerged in separate populations at later dates, then we would expect there to remain pockets of human groups where this mutation had not occurred–or at least for there to be records of such in the past. Yet we know of no such groups, which again points us to reconstructing that the trait arose at *sapiens'* origin, before human groups had split up, the feature then persisting in all of them.

Of course, it may eventually be shown that there is no genetic predisposition for language and that language is indeed an artifactual "graft" onto humanity rather than an innate trait (from my reading of the facts, this conclusion is just as likely to be reached in the future as the discovery of an innate language capability). Yet even here logic would dictate the reconstruction of a single original language: to propose that offshoots from the first group of human beings eventually developed language anew is to presume that this offshoot group had for some reason ceased using language in the past. But given the obvious advantages that language confers on the species, it is extremely unlikely that any human groups have ever cut out talking. Anthropologists have found no such human group in the present, for instance, although cultures do vary in how much they value speaking in general (the Puliyanese of South India barely talk at all after age forty; Danes tend to be on the quiet side; Caribbeans less so; the Roti of East Timor process silence as downright threatening and appear to talk a mile a minute all the time).

Thus the facts available to us at this writing lend themselves most plausibly to the hypothesis that the first human language emerged roughly 150,000 years ago in East Africa. We do not and never will know any words from this first language, nor much of anything about it at all. (In the Epilogue I will discuss the truly tantalizing but ultimately untenable claims that words from this language are reconstructable.) Certainly, there was no way to record this language mechanically, nor was it written (writing of any language would not begin until several tens of thousands of years later, in about 3500 B.C.). Nor do the people who live in East Africa today speak that language: even if there are people living there today descended directly from the original group, their language would by now have "morphed" into one completely different (as we will see that all human language is always in the process of doing, no matter what the conditions); besides, the inhabitants of East Africa

today appear to be all or mostly descended from peoples who migrated there subsequently.

What we do know is that what was most likely one original language spread by offshoot populations first to Asia, with one group eventually migrating to Europe, while another spread in two directions: southeastward across Asia down to Australia and northeastward across the Bering Strait to the Americas (mounting evidence suggests that there were also some migrations across the Pacific to the Americas). During these movements, the original language eventually evolved into thousands of others, resulting in the roughly six thousand languages extant today. The process by which one original language has developed into six thousand is a rich and fascinating one, incorporating not only findings from linguistic theory but also geography, history, and sociology. It is this fascinating story that I will share with you in this book.

My aim is to tell a story that has yet to be shared with the general reading public, rather than to contribute by reinforcement to spreading messages about language already treated in accessible sources. As such, in this book you will not find many of the things often covered in books about language. Although you will encounter a dazzling variety of languages, there will be no attempt to provide a family-by-family survey of the world's major languages for its own sake. Various books explore the history of individual words; etymologies will figure in this story only where they are illustrative of a larger point. Similarly, this book will not entail a defense of the legitimacy of slang, an outline of the development of writing systems throughout the world, an exploration of the ways in which language reflects culture, or an exposé of the folly of "blackboard grammar" rules such as the one designating *Billy and me went to the store* "wrong." All of these topics have been treated, in many cases often, by other authors.

Of course, most of those things will make the occasional appearance as we go along. However, the principal intent of this book is to foster a new conception of "language" entirely. This intent springs from something of increasing concern to professional linguists, which becomes increasingly urgent amid the present-day flowering of books and magazines presenting academic findings to the reading public in myriad disciplines. There is a long-standing gulf between how the general public tends to conceive of language and what linguists have discovered about how languages change, relationships between languages and dialects, and how they mix.

This is not the public's "fault," because these concepts are not taught in secondary schools, are generally taught in passing even in undergraduate introductory linguistics courses (which, of course, only a minority of students take), and have been only fitfully disseminated in the form of accessible presentations.

Did you know that according to the instructions for Monopoly, if you own all of a property group (say, the "reds" Kentucky Ave., Indiana Ave., and Illinois Ave.), then even if you haven't built houses on the properties yet, people landing on them are to pay double the base rent? I have never known anyone who observed that rule. In general, almost nobody plays Monopoly straight from the instructions, and almost everybody adds their own rules–in my house, we gave anyone who rolled snake eyes (2 ones) $1,000; some people allow you to build houses on a property before you own the whole set of them; the grand old tradition of putting fees exacted by the Chance and Community Chest cards into a "pot" collected by people who land on "Free Parking" is not in the instructions, which on the contrary actually specify that "a player landing on this space does not receive any money, property or reward of any kind." None of us lose any sleep over our little variations, but most of us know that there is a "real" Monopoly, specified in the small print of that dull, wordy little instruction sheet rarely read and often lost, that we are not ever quite playing.

We are taught, passively but decisively, to think of a language as being like those Monopoly instructions: unquestionably inert and static and "given" from on high, with departures therefrom constituting petty violations of something inherently immutable, a game so eternal and so deeply embedded in the national fabric that it doesn't even have to advertise (no "Pretty sneaky, Sis"-type commercials for Monopoly on television, if you think about it). Sure, we all know that slang changes from decade to decade and even that, as history forces a certain object or concept out of use, the word for it tends to disappear along with it (such as the medieval instrument called a *shawm* or the antique ailment name *neurasthenia,* a vaguely characterized malaise that makes one think of Gilded Age presidents' wives). In the same way, Monopoly houses and hotels used to be made of wood, and through the years a "deluxe" model emerged with extra playing pieces among other things. But, overall, the board will never change; the little man will always wear a top hat, although that sartorial gesture is now seventy years out of date; the car piece will never be changed to a BMW; the rules will always

remain the same as they were when the game was released in 1935, and Parker Brothers will presumably never have any reason to revise them.

Yet the truth is that everything about a language is eternally and inherently changeable, not just the slang and the occasional cultural designation, but the very sound and meaning of basic words, and the word order and grammar. For example, seven hundred years ago (when Michael Crichton's *Timeline* takes place), in the language English that I speak and am writing in, *name* was pronounced "NAH-muh" rather than "NEIGHm," *silly* meant "innocent," and double negatives were good grammar. Three thousand years ago, the French language that we know of today was spoken by no one, because it did not yet exist; it was still Latin, which only developed into French through a profound transformation of all of its sounds, sentence structures, and most of its basic word meanings (three Latin words, *de, de,* and *intus* "from," "from," and "inside," eventually squashed together to become a word for "in" pronounced roughly "dong," *dans*). It is even less obvious to us on a day-to-day basis that it is natural for languages to mix to various degrees, such that none of the world's languages are "purebred," all of them having been imprinted to some extent by other languages, at least in regard to vocabulary but just as often all the way down to their very grammars. This is not only a "jungle" affair happening through barter or some other condition that most of us process as "other": a mere *one percent* of the words in English today are not borrowed from other languages.

In short, though we are taught that language is like a copy of Monopoly instructions, language is actually analogous to cloud formations. We look at a cloud formation with full awareness of its inherently transitory nature: we know that if we look up again in an hour, the formation will almost certainly be different and that if it isn't, then this is due to an unusually windless interval that will surely not last long. Language does not change that fast, of course, but it changes just as inevitably and completely over time. Language is an inherently dynamic, rather than static, living entity. One sees or hears that said occasionally, but usually in reference to the inherent liveliness of slang or to the fact that language is used by living beings and rooted in changing cultures. Both of these things are true, but they are only a beginning: language is as changeable an entity as cloud formations even in its mundanest, most "vanilla" aspects such as the words *dog* or *since*. Even when we

say any of these things, we are utilizing a system that is eternally mutating, in a slow but inexorable process of becoming a new system entirely, like the lava in one of those lava lamps from the '70s.

For people speaking the language I am writing in a thousand years ago, *dog* was pronounced "DAW-jah" (spelled *docga*) and was a secondary word rather like *fowl* is today; the usual word for *dog* in general was *hund*, which has limped down to us as the now marginal word *hound*. A thousand years ago, in the language called English, *since* was a compound word *siththan* from the words for *after* and *that* and was only used in the chronological "after that" sense of *She has been sad since the day her fish died*; the "because" usage *(He has to have been there since they found his umbrella in the basement)* would only become established five hundred years later. And English isn't special: all six thousand of today's languages have arisen through just this sort of gradual change from the first language spoken more than 100,000 years ago on the savannas of East Africa.

The parallel with the evolution of animals and plants is obvious. The fit is far from perfect. Whereas organisms' evolution is constrained by the central goal of propagating genetic material, languages evolve not with any "goal" to keep themselves going, but simply because it is as inherent for them to evolve as it is for a cloud formation to change. (To those of you who are inclined to object that language evolves strictly to express and preserve culture, I address that issue in Chapter 1.) Yet the process of biological evolution itself is in many ways quite similar to that of flora and fauna. Stephen Jay Gould has told us that evolution is geared not toward progressive "fitness" but toward simply filling available ecological niches. Bacteria, toads, wallabies, and orangutans do not fall on a cline of increasing closeness to God; all four are equally well suited to leading the lives they lead. In the same way, language evolution is not geared toward improvement. Instead, languages change like the lava clump in a lava lamp: always different but at no point differentiable in any qualitative sense from the earlier stage. The process is better termed *transformation* than *evolution*.

Organisms evolve into species and subspecies by mutations. By similar "mutations" and in similar fashion, languages evolve into new languages or, before they have changed to this extent, into "sublanguages," or dialects. Some creatures, like bees, can reproduce both sexually and asexually: a queen bee's fertilized eggs become females and her unfertilized eggs become males. Languages usually reproduce "asexually" by evolving into new ones on

their own, but they can also meet one another and yield little-known but rather common language hybrids combining roughly half of one language with half of another. Tiny creatures called tardigrades, which live on wet forest surfaces, can go into suspended animation under dry conditions, pulling in their legs, secreting a protective shell, and suppressing all signs of metabolism. Yet while they're in this condition you can boil them, freeze them, or submerge them in alcohol and they will still come back alive when exposed to water. (Ironically, these critters look like bears, which hibernate in a similar fashion but cannot withstand boiling, etc.)

Languages can similarly be stripped of all but their most fundamental grammatical structures and be used by nonnative speakers for passing communication only (as pidgins–think of Tonto of *The Lone Ranger*); but if conditions arise in which a full language is needed to express any thought, the pidgin can be "awakened" into a full language again (creoles). Some species, like tuataras and horseshoe crabs, find a stable little niche and live on unchanged through the eons, with no need to evolve to fit new conditions. A given dialect of a language has often been assigned a particular static "niche" as the official common coin of a population, codified for use in formal contexts and writing, its lava-lamp transformation retarded–the result is "standard" varieties such as Standard English and Hochdeutsch (Standard German). Flora and fauna can become extinct; languages and dialects do so as well, and, just as we are losing biological species at an alarming rate on our planet, most of the languages that now exist are almost certain to become extinct within this century.

Thus the combination of wonder, injury, jealousy, and rue that little Shirley stirred in me that day in 1970 was due to the contrast between just two of the thousands upon thousands of variations on that one original language that have arisen in the past 150,000 years or so. In the pages that follow, we will take a trip through the natural history of human language and explore how its eternal and inexorable mutability and mixability have transformed the sounds, sentence patterns, and word meanings of one Ur-tongue into six thousand new languages. We are taught from childhood about how art, music, dance, cooking, dress, technology, and even private life began and developed throughout the history of humankind. Here, our guiding question will be a simple one: What happened to the first language?

1

The First Language Morphs into Six Thousand New Ones

I am always a step behind when it comes to technological developments. At the start of my graduate study at Stanford in 1988, I had no idea what "e-mail" meant when I encountered it on a personal data form, but soon discovered that for most of the people in the department, e-mail had largely replaced the telephone, written letters, and memos. It took me about three years to incorporate e-mail into my routine. By 1998, it was the World Wide Web that, for people with computers, had become a norm rather than a marginal toy, first choice for movie listings, personals ads, travel booking, and fact checking. I still use the Web more when I must than as an ingrained habit. My next problem will be cell phones, which by the summer of 1999 became "default" in the United States. It has gotten to the point that saying that I don't have "a cell" lends me, I suspect, the air of a sequestered holdout that we sense in people who do not have VCRs. I'll have given in by the time you read this, but by then I'll probably be among the last people in America not reading e-mail on their wristwatches.

My problem is that I have never been comfortable with change. I have an illogical underlying notion that under normal conditions life stays eternally the same and that changes constitute occasional and disruptive departures from this stable norm. A dinner six years ago will sit in my mind as so recently past that it is unofficially still in the present, whereas the person I was with will barely remember it; when a child I haven't seen for years is now much bigger and