Last May, Luis Miguel Rojas-Berscia, a doctoral candidate at the Max Planck Institute for Psycholinguistics, in the Dutch city of Nijmegen, flew to Malta for a week to learn Maltese. He had a hefty grammar book in his backpack, but he didn't plan to open it unless he had to. “We’ll do this as I would in the Amazon,” he told me, referring to his fieldwork as a linguist. Our plan was for me to observe how he went about learning a new language, starting with “hello” and “thank you.”

Rojas-Berscia is a twenty-seven-year-old Peruvian with a baby face and spiky dark hair. A friend had given him a new pair of earrings, which he wore on Malta with funky tank tops and a chain necklace. He looked like any other laid-back young tourist, except for the intense focus—all senses cocked—with which he takes in a new environment. Linguistics is a formidably cerebral
discipline. At a conference in Nijmegen that had preceded our trip to Malta, there were papers on “the anatomical similarities in the phonatory apparatus of humans and harbor seals” and “hippocampal-dependent declarative memory,” along with a neuropsychological analysis of speech and sound processing in the brains of beatboxers. Rojas-Berscia’s Ph.D. research, with the Shawi people of the Peruvian rain forest, doesn’t involve fMRI data or computer modelling, but it is still arcane to a layperson. “I’m developing a theory of language change called the Flux Approach,” he explained one evening, at a country inn outside the city, over the delicious pannenkoeken (pancakes) that are a local specialty. “A flux is a dynamism that involves a social fact and an impact, either functionally or formally, in linguistic competence.”

Linguistic competence, as it happens, was the subject of my own interest in Rojas-Berscia. He is a hyperpolyglot, with a command of twenty-two living languages (Spanish, Italian, Piedmontese, English, Mandarin, French, Esperanto, Portuguese, Romanian, Quechua, Shawi, Aymara, German, Dutch, Catalan, Russian, Hakka Chinese, Japanese, Korean, Guarani, Farsi, and Serbian), thirteen of which he speaks fluently. He also knows six classical or endangered languages: Latin, Ancient Greek, Biblical Hebrew, Shiwilu, Muniche, and Selk’nam, an indigenous tongue of Tierra del Fuego, which was the subject of his master’s thesis. We first made contact three years ago, when I was writing about a Chilean youth who called himself the last surviving speaker of Selk’nam. How could such a claim be verified? Pretty much only, it turned out, by Rojas-Berscia.

Superlative feats have always thrilled average mortals, in part, perhaps, because they register as a victory for Team Homo Sapiens: they redefine the humanly possible. If the ultra-marathoner Dean Karnazes can run three hundred and fifty miles without sleep, he may inspire you to jog around the block. If Rojas-Berscia can speak twenty-two languages, perhaps you can crank up your high-school Spanish or bat-mitzvah Hebrew, or learn enough of your grandma’s
Korean to understand her stories. Such is the promise of online language-learning programs like Pimsleur, Babbel, Rosetta Stone, and Duolingo: in the brain of every monolingual, there’s a dormant polyglot—a genie—who, with some brisk mental friction, can be woken up. I tested that presumption at the start of my research, signing up on Duolingo to learn Vietnamese. (The app is free, and I was curious about the challenges of a tonal language.) It turns out that I’m good at hello—chào—but thank you, cảm ơn, is harder.

The word “hyperpolyglot” was coined two decades ago, by a British linguist, Richard Hudson, who was launching an Internet search for the world’s greatest language learner. But the phenomenon and its mystique are ancient. In Acts 2 of the New Testament, Christ’s disciples receive the Holy Spirit and can suddenly “speak in tongues” (glōssais lalein, in Greek), preaching in the languages of “every nation under heaven.” According to Pliny the Elder, the Greco-Persian king Mithridates VI, who ruled twenty-two nations in the first century B.C., “administered their laws in as many languages, and could harangue in each of them.” Plutarch claimed that Cleopatra “very seldom had need of an interpreter,” and was the only monarch of her Greek dynasty fluent in Egyptian. Elizabeth I also allegedly mastered the tongues of her realm—Welsh, Cornish, Scottish, and Irish, plus six others.

With a mere ten languages, Shakespeare’s Queen does not qualify as a hyperpolyglot; the accepted threshold is eleven. The prowess of Giuseppe Mezzofanti (1774-1849) is more astounding and better documented. Mezzofanti, an Italian cardinal, was fluent in at least thirty languages and studied another forty-two, including, he claimed, Algonquin. In the decades that he lived in Rome, as the chief custodian of the Vatican Library, notables from around the world dropped by to interrogate him in their mother tongues, and he flitted as nimbly among them as a bee in a rose garden. Lord Byron, who is said to have spoken Greek, French, Italian, German, Latin, and some Armenian, in addition to his immortal English, lost a cursing contest with the
Cardinal and afterward, with admiration, called him a “monster.” Other witnesses were less enchanted, comparing him to a parrot. But his gifts were certified by an Irish scholar and a British philologist, Charles William Russell and Thomas Watts, who set a standard for fluency that is still useful in vetting the claims of modern Mezzofantis: Can they speak with an unstilted freedom that transcends rote mimicry?

Mezzofanti, the son of a carpenter, picked up Latin by standing outside a seminary, listening to the boys recite their conjugations. Rojas-Berscia, by contrast, grew up in an educated trilingual household. His father is a Peruvian businessman, and the family lives comfortably in Lima. His mother is a shop manager of Italian origin, and his maternal grandmother, who cared for him as a boy, taught him Piedmontese. He learned English in preschool and speaks it impeccably, with the same slight Latin inflection—a trill of otherness, rather than an accent—that he has in every language I can vouch for. Maltese had been on his wish list for a while, along with Uighur and Sanskrit. “What happens is this,” he said, over dinner at a Chinese restaurant in Nijmegen, where he was chatting in Mandarin with the owner and in Dutch with a server, while alternating between French and Spanish with a fellow-student at the institute. “I’m an amoureux de langues. And, when I fall in love with a language, I have to learn it. There’s no practical motive—it’s a form of play.” An amoureux, one might note, covets his beloved, body and soul.

My own modest competence in foreign languages (I speak three) is nothing to boast of in most parts of the world, where multilingualism is the norm. People who live at a crossroads of cultures— Melanesians, South Asians, Latin-Americans, Central Europeans, sub-Saharan Africans, plus millions of others, including the Maltese and the Shawi—acquire languages without considering it a noteworthy achievement. Leaving New York, on the way to the Netherlands, I overheard a Ghanaian taxi-driver chatting on his cell phone in a tonal language that I didn’t recognize. “It’s Hausa,” he told me. “I speak it...
with my father, whose family comes from Nigeria. But I speak Twi with my mom, Ga with my friends, some Ewe, and English is our lingua franca. If people in Chelsea spoke one thing and people in SoHo another, New Yorkers would be multilingual, too.”

Linguistically speaking, that taxi-driver is a more typical citizen of the globe than the average American is. Consider Adul Sam-on, one of the teen-age soccer players rescued last July from the cave in Mae Sai, Thailand. Adul grew up in dire poverty on the porous Thai border with Myanmar and Laos, where diverse populations intersect. His family belongs to an ethnic minority, the Wa, who speak an Austroasiatic language that is also widespread in parts of China. In addition to Wa, according to the *Times*, Adul is “proficient” in Thai, Burmese, Mandarin, and English—which enabled him to interpret for the two British divers who discovered the trapped team.

Nearly two billion people study English as a foreign language—about four
times the number of native speakers. And apps like Google Translate make it possible to communicate, almost anywhere, by typing conversations into a smartphone (presuming your interlocutor can read). Ironically, however, as the hegemony of English decreases the need to speak other languages for work or for travel, the cachet attached to acquiring them seems to be growing. There is a thriving online community of ardent linguaphiles who are, or who aspire to become, polyglots; for inspiration, they look to Facebook groups, YouTube videos, chat rooms, and language gurus like Richard Simcott, a charismatic British hyperpolyglot who orchestrates the annual Polyglot Conference. This gathering has been held, on various continents, since 2009, and it attracts hundreds of aficionados. The talks are mostly in English, though participants wear nametags listing the languages they’re prepared to converse in. Simcott’s winkingly says “Try Me.”

No one becomes a hyperpolyglot by osmosis, or without sacrifice—it’s a rare, herculean feat. Rojas-Berscia, who gave up a promising tennis career that interfered with his language studies, reckons that there are “about twenty of us in Europe, and we all know, or know of, one another.” He put me in touch with a few of his peers, including Corentin Bourdeau, a young French linguist whose eleven languages include Wolof, Farsi, and Finnish; and Emanuele Marini, a shy Italian in his forties, who runs an export-import business and speaks almost every Slavic and Romance language, plus Arabic, Turkish, and Greek, for a total of nearly thirty. Neither willingly uses English, resenting its status as a global bully language—its prepotenza, as Marini put it to me, in Italian. Ellen Jovin, a dynamic New Yorker who has been described as the “den mother” of the polyglot community, explained that her own avid study of languages—twenty-five, to date—“is almost an apology for the dominance of English. Polyglottery is an antithesis to linguistic chauvinism.”

Much of the data on hyperpolyglots is still sketchy. But, from a small sample of prodigies who have been tested by neurolinguists, responded to online
surveys, or shared their experience in forums, a partial profile has emerged. An extreme language learner has a more-than-random chance of being a gay, left-handed male on the autism spectrum, with an autoimmune disorder, such as asthma or allergies. (Endocrine research, still inconclusive, has investigated the hypothesis that these traits may be linked to a spike in testosterone during gestation.) “It’s true that L.G.B.T. people are well represented in our community,” Simcott told me, when we spoke in July. “And a lot identify as being on the spectrum, some mildly, others more so. It was a subject we explored at the conference last year.”

Simcott himself is an ambidextrous, heterosexual, and notably outgoing forty-one-year-old. He lives in Macedonia with his wife and daughter, a budding polyglot of eleven, who was, he told me, trilingual at sixteen months. His own parents were monolingual, though he was fascinated, as a boy, “by the different ways people spoke English.” (Like Henry Higgins, Simcott can nail an accent to a precise point on the map, not only in the British Isles but all over Europe.) “I’m mistaken for a native in about six languages,” he told me, even though he started slow, learning French in grade school and Spanish as a teen-ager. At university, he added Italian, Portuguese, Swedish, and Old Icelandic. His flawless German, acquired post-college, as an au pair, made Dutch a cinch.

As Simcott entered late adolescence, he said, “the Internet was starting up,” so he could practice his languages in chat rooms. He also found a sense of identity that had eluded him. There was, in particular, a mysterious polyglot who haunted the same rooms. “He was the first person who really encouraged me,” Simcott said. “Everyone else either warned me that my brain would burst or saw me as a talking horse. Eventually, I made a video using bits and bobs of sixteen languages, so I wouldn’t have to keep performing.” But the stranger gave Simcott a validation that he still recalls with emotion. He founded the conference partly to pay that debt forward, by creating a clubhouse for the
kind of geeky kid he had been, to whom no tongue was foreign but no place was home.

A number of hyperpolyglots are reclusive savants who bank their languages rather than using them to communicate. The more extroverted may work as translators or interpreters. Helen Abadzi, a Greek educator who speaks nineteen languages “at least at an intermediate level” spent decades at the World Bank. Kató Lomb, a Hungarian autodidact, learned seventeen tongues—the last, Hebrew, in her late eighties—and in middle age became one of the world’s first simultaneous interpreters. Simcott joined the British Foreign Service. On tours of duty in Yemen, Bosnia, and Moldova, he picked up some of the lingo. Every summer, he set himself the challenge of learning a new tongue more purposefully, either by taking a university course—as he did in Mandarin, Japanese, Czech, Arabic, Finnish, and Georgian—or with a grammar book and a tutor.

However they differ, the hyperpolyglots whom I met all winced at the question “How many languages do you speak?” As Rojas-Berscia explained it, the issue is partly semantic: What does the verb “to speak” mean? It is also political. Standard accents and grammar are usually those of a ruling class. And the question is further clouded by the “chauvinism” that Ellen Jovin feels obliged to resist. The test of a spy, in thrillers, is to “pass for a native,” even though the English-speaking natives of Glasgow, Trinidad, Delhi, Lagos, New Orleans, and Melbourne (not to mention Eliza Doolittle’s East End) all sound foreign to one another. “No one masters all the nuances of a language,” Simcott said. “It’s a false standard, and one that gets raised, ironically, mostly by monoglots—Americans in particular. So let’s just say that I have studied more than fifty, and I use about half of them.”

Richard Hudson’s casual search for the ultimate hyperpolyglot was inconclusive, but it led him to an American journalist, Michael Erard,
who had embarked on the same quest more methodically. Erard, who has a doctorate in English, spent six years reading the scientific literature and debriefing its authors, visiting archives (including Mezzofanti’s, in Bologna), and tracking down every living language prodigy he had heard from or about. It was his online survey, conducted in 2009, that generated the first systematic overview of linguistic virtuosity. Some four hundred respondents provided information about their gender and their orientation, among other personal details, including their I.Q.s (which were above average). Nearly half spoke at least seven languages, and seventeen qualified as hyperpolyglots. The distillation of this research, “Babel No More,” published in 2012, is an essential reference book—in its way, an ethnography of what Erard calls a “neural tribe.”

The awe that tribe members command has always attracted opportunists. There are, for example, “bizglots” and “broglots,” as Erard calls them. The former hawk tutorials with the dubious promise that anyone can become a prodigy, while the latter engage in online bragfests, like “postmodern frat boys.” And then there are the fauxglots. My favorite is “George Psalmanazar” (his real name is unknown), a vagabond of mysterious provenance and endearing chutzpah who wandered through Europe in the late seventeenth century, claiming, by turns, to be Irish, Japanese, and, ultimately, Formosan. Samuel Johnson befriended him in London, where Psalmanazar published a travelogue about his “native” island which included translations from its language—an ingenious pastiche of his invention. Erard pursued another much hyped character, Ziad Fazah, a Guinness-record holder until 1997, who claimed to speak fifty-eight languages fluently. Fazah flamed out spectacularly on a Chilean television show, failing to answer even simple questions posed to him by native speakers.

Rojas-Berscia derides such theatrics as “monkey business,” and dismisses prodigies who monetize their gifts. “Where do they get the time for it?” he
wonders. Erard, in his survey for “Babel No More,” queried his subjects on their learning protocols, and, while some were vague ("I accept mistakes and uncertainty; I listen and read a lot"), others gave elaborate accounts of drawing “mind maps” and of building “memory anchors,” or of creating an architectural model for each new language, to be furnished with vocabulary as they progressed. When I asked Simcott if he had any secrets, he paused to think about it. “Well, I don’t have an amazing memory,” he said. “At many tasks, I’m just average. A neurolinguist at the City University of New York, Loraine Obler, ran some tests on me, and I performed highly on recalling lists of nonsense words.” (That ability, Obler’s research suggests, strongly correlates with a gift for languages.) “I was also a standout at reproducing sounds,” he continued. “But, the more languages you learn, in the more families, the easier it gets. Each one bangs more storage hooks into the wall.”

Alexander Argüelles, a legendary figure in the community, warned Erard that immodesty is the hallmark of a charlatan. When Erard met him, ten years ago, Argüelles, an American who lives in Singapore, started his day at three in the morning with a “scriptorium” exercise: “writing two pages apiece in Arabic, Sanskrit, and Chinese, the languages he calls the ‘etymological source rivers.’ ” He continued with other languages, from different families, until he had filled twenty-four notebook pages. As dawn broke, he went for a long run, listening to audiobooks and practicing what he calls “shadowing”: as the foreign sounds flowed into his headphones, he shouted them out at the top of his lungs. Back at home, he turned to drills in grammar and phonetics, logging the time he had devoted to each language on an Excel spreadsheet. Erard studied logs going back sixteen months, and calculated that Argüelles had spent forty per cent of his waking life studying fifty-two languages, in increments that varied from four hundred and fifty-six hours (Arabic) to four hours (Vietnamese). “The way I see it, there are three types of polyglots,” he told Erard. There were the “ultimate geniuses . . . who excel at anything they do”; the
Mezzofantis, “who are only good at languages”; and the “people like me.” He refused to consider himself a special case—he was simply a Stakhanovite.

Erard is a pensive man of fifty, still boyish-looking, with a gift for listening that he prizes in others. We met in Nijmegen, at the Max Planck Institute, where he was finishing a yearlong stint as the writer-in-residence, and looking forward to moving back to Maine with his family. “I saw only when the book was finished that many of the stories had a common thread,” he told me. We had been walking through the woods that surround the institute, listening to the vibrant May birdsong, a Babel of voices. His subjects, he reflected, had been cut from the herd of average mortals by their wiring or by their obsession. They had embraced their otherness, and they had cultivated it. Yet, if speech defines us as human, a related faculty had eluded them: the ability to connect. Each new language was a potential conduit—an escape route from solitude. “I hadn’t realized that was my story, too,” he said.

Rojas-Berscia and I took a budget flight from Brussels to Malta, arriving at midnight. The air smelled like summer. Our taxi-driver presumed we were mother and son. “How do you say ‘mother’ in Maltese?” Rojas-Berscia asked him, in English. By the time we had reached the hotel, he knew the whole Maltese family. Two local newlyweds, still in their wedding clothes, were just checking in. “How do you say ‘congratulations’?” Rojas-Berscia asked. The answer was nifrah.

We were both starving, so we dropped our bags and went to a local bar. It was Saturday night, and the narrow streets of the quarter were packed with revellers grooving to deafening music. I had pictured something a bit different—a quaint inn on a quiet square, perhaps, where a bronze Knight of Malta tilted at the bougainvillea. But Rojas-Berscia is not easily distracted. He took out his notebook and jotted down the kinship terms he had just learned. Then he checked his phone. “I texted the language guide I lined up for us,” he
explained. “He’s a personal trainer I found online, and I’ll start working out with him tomorrow morning. A gym is a good place to get the prepositions for direction.” The trainer arrived and had a beer with us. He was overdressed, with a lacquered mullet, and there was something shifty about him. Indeed, Rojas-Berscia prepaid him for the session, but he never turned up the next day. He had, it transpired, a subsidiary line of work.

I didn’t expect Rojas-Berscia to master Maltese in a week, but I was surprised at his impromptu approach. He spent several days raptly eavesdropping on native speakers in markets and cafés and on long bus rides, bathing in the warm sea of their voices. If we took a taxi to some church or ruin, he would ride shotgun and ask the driver to teach him a few common Maltese phrases, or to tell him a joke. He didn’t record these encounters, but in the next taxi or shop he would use the new phrases to start a conversation. Hyperpolyglots, Erard writes, exhibit an imperative “will to plasticity,” by which he means plasticity of the brain. But I was seeing plasticity of a different sort, which I myself had once possessed. In my early twenties, I had learned two languages simultaneously, the first by “sleeping with my dictionary,” as the French put it, and the other by drinking a lot of wine and being willing to make a fool of myself jabbering at strangers. With age, I had lost my gift for abandon. That had been my problem with Vietnamese. You have to inhabit a language, not only speak it, and fluency requires some dramatic flair. I should have been hanging out in New York’s Little Saigon, rather than staring at a screen.

The Maltese were flattered by Rojas-Berscia’s interest in their language, but dumbfounded that he would bother to learn it—what use was it to him? Their own history suggests an answer. Malta, an archipelago, is an almost literal stepping stone from Africa to Europe. (While we were there, the government turned away a boatload of asylum seekers.) Its earliest known inhabitants were Neolithic farmers, who were succeeded by the builders of a temple complex on Gozo. (Their mysterious megaliths are still standing.)
Around 750 B.C., Phoenician traders established a colony, which was conquered by the Romans, who were routed by the Byzantines, who were kicked out by the Aghlabids. A community of Arabs from the Muslim Emirate of Sicily landed in the eleventh century and dug in so deep that waves of Christian conquest—Norman, Swabian, Aragonese, Spanish, Sicilian, French, and British—couldn’t efface them. Their language is the source of Maltese grammar and a third of the lexicon, making Malti the only Semitic language in the European Union. Rojas-Berscia’s Hebrew helped him with plurals, conjugations, and some roots. As for the rest of the vocabulary, about half comes from Italian, with English and French loanwords. “We should have done Uighur,” I teased him. “This is too easy for you.”

Linguistics gave Rojas-Berscia tools that civilians lack. But he was drawn to linguistics in part because of his aptitude for systematizing. “I can’t remember names,” he told me, yet his recall for the spoken word is preternatural. “It will take me a day to learn the essentials,” he had reckoned, as we planned the trip. The essentials included “predicate formation, how to quantify, negation, pronouns, numbers, qualification—‘good,’ ‘bad,’ and such. Some clausal operators—‘but,’ ‘because,’ ‘therefore.’ Copular verbs like ‘to be’ and ‘to seem.’ Basic survival verbs like ‘need,’ ‘eat,’ ‘see,’ ‘drink,’ ‘want,’ ‘walk,’ ‘buy,’ and ‘get sick.’ Plus a nice little shopping basket of nouns. Then I’ll get our guide to give me a paradigm—‘I eat an apple, you eat an apple’—and voilà.” I had, I realized, covered the same ground in Vietnamese—tôi ăn một quả táo—but it had cost me six months.

It wasn’t easy, though, to find the right guide. I suggested we try the university. “Only if we have to,” Rojas-Berscia said. “I prefer to avoid intellectuals. You want the street talk, not book Maltese.” How would he do this in the Amazon? “Monolingual fieldwork on indigenous tongues, without the reference point of a lingua franca, is harder, but it’s beautiful,” he said. “You start by making bonds with people, learning to greet them appropriately, and
observing their gestures. The rules of behavior are at least as important in
cultural linguistics as the rules of grammar. It’s not just a matter of finding the
algorithm. The goal is to become part of a society.”

After the debacle with the “trainer,” we went looking for volunteers willing to
spend an hour or so over a drink or a coffee. We auditioned a tattoo artist with
blond dreadlocks, a physiology student from Valletta, a waiter on Gozo, and a
tiny old lady who sold tickets to the catacombs outside Mdina (a location for
King’s Landing in “Game of Thrones”). Like nearly all Maltese, they spoke
good English, though Rojas-Berscia valued their mistakes. “When someone
says, ‘He is angry for me,’ you learn something about his language—it
represents a convention in Maltese. The richness of a language’s conventions
is the highest barrier to sounding like a native in it.”

On our third day, Rojas-Berscia contacted a Maltese Facebook friend, who
invited us to dinner in Birgu, a medieval city fortified by the Knights of Malta
in the sixteenth century. The sheltered port is now a marina for super-yachts,
although a wizened ferryman shuttles humbler travellers from the Birgu quays
to those of Senglea, directly across from them. The waterfront is lined with
old palazzos of coralline limestone, whose façades were glowing in the dusk.
We ordered some Maltese wine and took in the scene. But the minute Rojas-
Berscia opened his notebook his attention lasered in on his task. “Please don’t
tell me if a verb is regular or not,” he chided his friend, who was being too
helpful. “I want my brain to do the work of classifying.”

Rojas-Berscia’s brain is of great interest to Simon Fisher, his senior
colleague at the institute and a neurogeneticist of international renown.
In 2001, Fisher, then at Oxford, was part of a team that discovered the
FOXP2 gene and identified a single, heritable mutation of it that is
responsible for verbal dyspraxia, a severe language disorder. In the popular
press, FOXP2 has been mistakenly touted as “the language gene,” and as the
long-sought evidence for Noam Chomsky’s famous theory, which posits that a spontaneous mutation gave *Homo sapiens* the ability to acquire speech and that syntax is hard-wired. Other animals, however, including songbirds, also bear a version of the gene, and most of the researchers I met believe that language is probably, as Fisher put it, a “bio-cultural hybrid”—one whose genesis is more complicated than Chomsky would allow. The question inspires bitter controversy.

Fisher’s lab at Nijmegen focusses on pathologies that disrupt speech, but he has started to search for DNA variants that may correlate with linguistic virtuosity. One such quirk has already been discovered, by the neuroscientist Sophie Scott: an extra loop of gray matter, present from birth, in the auditory cortex of some phoneticians. “The genetics of talent is unexplored territory,” Fisher said. “It’s a hard concept to frame for an experiment. It’s also a sensitive topic. But you can’t deny the fact that your genome predisposes you in certain ways.”

The genetics of talent may thwart average linguaphiles who aspire to become Mezzofantinis. Transgenerational studies are the next stage of research, and they will seek to establish the degree to which a genius for language runs in the family. Argüelles is the child of a polyglot. Kató Lomb was, too. Simcott’s daughter might contribute to a science still in its infancy. In the meantime, Fisher is recruiting outliers like Rojas-Berscia and collecting their saliva; when the sample is broad enough, he hopes, it will generate some conclusions. “We need to establish the right cutoff point,” he said. “We tend to think it should be twenty languages, rather than the conventional eleven. But there’s a trade-off: with a lower number, we have a bigger cohort.”

I asked Fisher about another cutoff point: the critical period for acquiring a language without an accent. The common wisdom is that one loses the chance to become a spy after puberty. Fisher explained why that is true for most
people. A brain, he said, sacrifices suppleness to gain stability as it matures; once you master your mother tongue, you don’t need the phonetic plasticity of childhood, and a typical brain puts that circuitry to another use. But Simcott learned three of the languages in which he is mistaken for a native when he was in his twenties. Corentin Bourdeau, who grew up in the South of France, passes for a local as seamlessly in Lima as he does in Tehran. Experiments in extending or restoring plasticity, in the hope of treating sensory disabilities, may also lead to opportunities for greater acuity. Takao Hensch, at Harvard, has discovered that Valproate, a drug used to treat epilepsy, migraines, and bipolar disorder, can reopen the critical period for visual development in mice. “Might it work for speech?” Fisher said. “We don’t know yet.”

Rojas-Berscia and I parted on the train from Brussels to Nijmegen, where he got off and I continued to the Amsterdam airport. He had to finish his thesis on the Flux Approach before leaving for a research job in Australia, where he planned to study aboriginal languages. I asked him to assess our little experiment. “The grammar was easy,” he said. “The orthography is a little difficult, and the verbs seemed chaotic.” His prowess had dazzled our consultants, but he wasn’t as impressed with himself. He could read bits of a newspaper; he could make small talk; he had learned probably a thousand words. When a taxi-driver asked if he’d been living on Malta for a year, he’d laughed with embarrassment. “I was flattered, of course,” he added. “And his excitement for my progress excited him to help us.” “Excitement about your progress,” I clucked. It was a rare lapse.

A week later, I was on a different train, from New York to Boston. Fisher had referred me to his collaborator Evelina Fedorenko. Fedorenko is a cognitive neuroscientist at Massachusetts General Hospital who also runs what her postdocs call the EvLab, at M.I.T. My first e-mail to her had bounced back—she was on maternity leave. But then she wrote to say that she would be delighted to meet me. “Are you claustrophobic?” she added. If not, she said, I
could take a spin in her fMRI machine, to see what she does with her hyperpolyglots.

Fedorenko is small and fair, with delicate features. She was born in Volgograd in 1980. “When the Soviet Union fell apart, we were starving, and it wasn’t fun,” she said. Her father was an alcoholic, but her parents were determined to help her fulfill her exceptional promise in math and science, which meant escaping abroad. At fifteen, she won a place in an exchange program, sponsored by Senator Bill Bradley, and spent a year in Alabama. Harvard gave her a full scholarship in 1998, and she went on to graduate school at M.I.T., in linguistics and psychology. There, she met the cognitive scientist Ted Gibson. They married, and they now have a one-year-old daughter.

One afternoon, I visited Fedorenko at her home, in Belmont. (She spends as much time as she can with her baby, who was babbling like a songbird.) “Here is my basic question,” she said. “How do I get a thought from my mind into yours? We begin by asking how language fits into the broader architecture of the mind. It’s a late invention, evolutionarily, and a lot of the brain’s machinery was already in place.”

She wondered: Does language share a mechanism with other cognitive functions? Or is it autonomous? To seek an answer, she developed a set of “localizer tasks,” administered in an fMRI machine. Her first goal was to identify the “language-responsive cortex,” and the tasks involved reading or listening to a sequence of sentences, some of them garbled or composed of nonsense words.

The responsive cortex proved to be separate from regions involved in other forms of complex thought. We don’t, for example, use the same parts of our brains for music and for speech, which seems counterintuitive, especially in the case of a tonal language. But pitch, Fedorenko explained, has its own
neural turf. And life experience alters the picture. “Literate people use one region of their cortex in recognizing letters,” she said. “Illiterate people don’t have that region, though it develops if they learn to read.”

In order to draw general conclusions, Fedorenko needed to study the way that language skills vary among individuals. They turned out to vary greatly. The intensity of activity in response to the localizer tests was idiosyncratic; some brains worked harder than others. But that raised another question: Did heightened activity correspond to a greater aptitude for language? Or was the opposite true—that the cortex of a language prodigy would show less activity, because it was more efficient?

I asked Fedorenko if she had reason to believe that gay, left-handed males on the spectrum had some cerebral advantage in learning languages. “I’m not prepared to accept that reporting as anything more than anecdotal,” she said. “Males, for one thing, get greater encouragement for intellectual achievement.”

Fedorenko’s initial subjects had been English-speaking monolinguals, or bilinguals who also spoke Spanish or Mandarin. But, in 2013, she tested her first prodigy. “We heard about a local kid who spoke thirty languages, and we recruited him,” she said. He introduced her to other whizzes, and as the study grew Fedorenko needed material in a range of tongues. Initially, she used Bible excerpts, but “Alice’s Adventures in Wonderland” came to seem more congenial. The EvLab has acquired more than forty “Alice” translations, and Fedorenko plans to add tasks in sign language.

Twelve years on, Fedorenko is confident of certain findings. All her subjects show less brain activity when working in their mother tongue; they don’t have to sweat it. As the language in the tests grows more challenging, it elicits more neural activity, until it becomes gibberish, at which point it elicits less—the
brain seems to give up, quite sensibly, when a task is futile. Hyperpolyglots, too, work harder in an unfamiliar tongue. But their “harder” is relaxed compared with the efforts of average people. Their advantage seems to be not capacity but efficiency. No matter how difficult the task, they use a smaller area of their brain in processing language—less tissue, less energy.

All Fedorenko’s guinea pigs, including me, also took a daunting nonverbal memory test: squares on a grid flash on and off as you frantically try to recall their location. This trial engages a neural network separate from the language cortex—the executive-function system. “Its role is to support general fluid intelligence,” Fedorenko said. What kind of boost might it give to, say, a language prodigy? “People claim that language learning makes you smarter,” she replied. “Sadly, we don’t have evidence for it. But, if you play an unfamiliar language to ‘normal’ people, their executive-function systems don’t show much response. Those of polyglots do. Perhaps they’re striving to grasp a linguistic signal.” Or perhaps that’s where their genie resides.

Barring an infusion of Valproate, most of us will never acquire Rojas-Berscia’s twenty-eight languages. As for my own brain, I reckoned that the scan would detect a lumpen mass of mac and cheese embedded with low-wattage Christmas lights. After the memory test, I was sure that it had. “Don’t worry,” Matt Siegelman, Fedorenko’s technician, reassured me. “Everyone fails it—well, almost.”

Siegelman’s tactful letdown woke me from my adventures in language land. But as I was leaving I noticed a copy of “Alice” in Vietnamese. I report to you with pride that I could make out “white rabbit” (thỏ trăng), “tea party” (tiệc trà), and ān tôi, which—you knew it!—means “eat me.”

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Video

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