

CAREERS

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LANGUAGE STUDIES

Learn the local lingo to get ahead

English is widely spoken in science, but mastering another language can open doors, especially when working abroad.

BY CAMERON WALKER

Joshua Plotnik pursued a different kind of instruction along with his PhD studies on the psychology of animal behaviour at Emory University in Atlanta, Georgia. Several times a month, he would go to a nearby Buddhist temple to practise writing and reading Thai with native speakers.

He had decided to learn the language after finding field sites in Thailand where he could study elephants. He put his lessons to good use the following year, when he returned to the sites for his dissertation research. In rural Thailand, few people spoke more than a few words of English. So Plotnik threw himself into speaking Thai, no matter how ridiculous he might sound. He carried notebooks to write down phrases,

got help from a US researcher who had spent decades in the country and made local friends.

Now at Mahidol University near Bangkok, Plotnik says that learning to speak (and read) Thai was essential for his doctoral research — as well as for his work today at the university, where he lectures in Thai, and as the executive director of Think Elephants International, a non-profit conservation organization that he founded in 2011. He would never, he says, have been able to develop relationships with locals who care for native elephants or talk to government officials about the animals' role in tourism. "If you really want to have an impact in a place, and develop collaborations, partnerships and relationships," he says, "you need to learn the language."

Although English is the universal language of science, many scientists have found that learning to speak and read the native language of the nation in which they work or study can open doors to new research projects and job opportunities, and can enhance life satisfaction. Early-career scientists who plan to look for postdoctoral positions or fellowships abroad, or wish to collaborate with researchers around the globe can seek formal instruction before their arrival (see 'Where to find your voice'). Once in the country, they should spend as much time as possible speaking, listening to, reading and writing the language.

SMOOTH INTERACTIONS

Although some international institutions conduct much of their official business in English, scientists who work in such places find that learning the native tongue can help to smooth interactions and relationships. Many of the Chilean staff at Cerro Tololo Inter-American Observatory, which has its offices in La Serena, Chile, speak English in addition to their native Spanish. But observatory director Steve Heathcote says that speaking Spanish can be helpful for visiting international researchers who need, for example, to choose optical filters — some of their names sound very similar in Spanish — or to navigate life in La Serena. "It gets complicated sometimes," he says about potential misunderstandings in English. "And there's plenty of room for confusion."

Junior scientists who travel abroad may find that they can make important connections in the field far more easily by speaking in the local tongue. Wildlife researcher Owen Bidder grew up speaking Welsh and English, and wanted to learn German after he accepted a postdoc at the University of Veterinary Medicine Hannover ▶

► in Germany. As part of his fellowship, he took German language classes and lived with a family in the nearby area for two months before starting his programme — to great effect. In the field, where he works with local hunters who trap foxes that he needs for blood samples, no one speaks much English (or any Welsh). His ability to chat with the hunters in German has forged a camaraderie: they grin at his linguistic mistakes and cheer his successes. It's a victory, he adds, because they are wary of researchers after conflicts in the past over some of the animals they hunt. By speaking in German, he says, "I'm trying to meet them halfway".

His proficiency in German has also helped him in other ways. Last September, he presented his research at an annual mammalian-biology meeting in Germany. He gave most

of his talk in English, but introduced himself and his work in German. Outside the presentation, he answered questions in both German and English. This, he says, helped attendees to relate to his research and improved their comprehension of his responses. "They'd say, 'Oh — now I understand,'" he says.

OVERCOMING INTIMIDATION

There's little question that learning a language can be intimidating at first, even for those like Bidder who already speak more than one. It helps, says Gabriel Hernández Valdivia, to practise the language in informal settings. Valdivia, who is a transportation-systems graduate student at the Technical University of Munich in Germany, knew early on that he wanted to study in the country because of

Germany's transportation expertise. But even though he had taken German courses in his native Mexico, he was overwhelmed when he first arrived in Germany. "It took me an hour to read three pages," he says of technical textbooks. He worked to pick up technical vocabulary, but his overall speaking skills improved vastly after he joined extracurricular activities, such as playing Frisbee, that let him hone his language skills outside the classroom. He also uses an app that provides closed captioning so that he can see films in German and read along in the same language.

When Bidder was first learning German, he picked out a few idioms to use in conversation that served as a source of amusement — and connection. One of his favourites is *das Gelbe vom Ei* — 'the yellow of the egg' — which he uses as the equivalent of the English phrase 'cream of the crop'. The hunters get a laugh out of it, he says, because it's a quaint expression. He says it so often that his colleagues have affixed a poster with the phrase to his office door.

To boost comprehension and fluency, it helps to attend meetings. Ana San Gabriel, who is from Spain, went to Japan for a three-year veterinary-science fellowship at the University of Tokyo and was initially bored at the frequent meetings. Then she realized that they offered a great opportunity for her to learn technical and lab-related words and phrases. She soon felt much more comfortable asking students and staff members for help in Japanese. "If you learn the key words, it's easier for you to speak about issues in the lab," she says.

THROW CAUTION TO THE WIND

Even if you fret about sounding foolish, it's important to keep throwing yourself into situations in which you're forced to speak the local language. When Maria Jimenez-Sanchez started a PhD programme in Spain, she worried that she wasn't proficient enough in English to compete for a postdoc abroad. So she did a three-month exchange programme in a US lab, and another in a Swiss lab where English was spoken. She gained enough confidence — and mastery of English — to apply for her neuroscience postdoc at the University of Cambridge, UK. Today, she's the vice-president of the Spanish Society of Researchers in the United Kingdom, a group that offers support in areas such as career development and networking, mainly in English. International researchers need to lose their self-consciousness and talk, she says. "When people are listening to you, they just want to hear what you have to say."

There are other, more nuanced benefits to learning the native tongue of a country where you work or study. San Gabriel found that learning Japanese gave her insight into the nation's culture and the hierarchal nature of Japanese society. In turn, she learned to recognize how and when to seek opportunities such as grants, pay rises and advancement. "You have to learn the art of discussion," she

LANGUAGE COURSES

Where to find your voice

Many universities provide language lessons for their students, staff and faculty members. Some institutions and programmes are open to all.

United States

- Emory College Language Center in Atlanta, Georgia, offers language instruction, events, options for independent language study and online resources (go.nature.com/1srhufn).
- The University of Chicago's English Language Institute in Illinois runs three-week intensive English courses every summer (go.nature.com/1x2sizh).
- Middlebury Language Schools in Vermont holds intensive courses each summer in Arabic, Chinese, German, Japanese, Russian and more (go.nature.com/25envje).
- Concordia Language Villages in Minnesota holds week-long immersion courses for adults in Spanish, German, French and Japanese (go.nature.com/288h5e8).
- CRDF Global in Arlington, Virginia, organizes multi-week, intensive English courses for early-career scientists in a wide range of countries. Participants work on career skills, discuss research and participate in excursions and social events, all in English. The programme often ends with a mock conference (go.nature.com/1zizroz).
- An online manual, *Scientific English as a Foreign Language*, covers short lessons in scientific communication, from commonly confused words and phrases to tips on writing mathematical equations and papers (go.nature.com/1o7frcr).

Germany

- The Alexander von Humboldt Foundation

in Bonn will cover the fees for four months of intensive German courses, including accommodation and a stipend, for research fellows at German institutions and their spouses (go.nature.com/1tseqt7).

- The Goethe Institute has a range of intensive German courses, with some tailored to the medical field. Others combine language instruction with a four-week internship in fields such as mechanical engineering. Online tutorials are also available (go.nature.com/22cilcp).

Japan

- The Japanese MEXT scholarship funds six months at a Japanese language institute (go.nature.com/25eolq9).

Latin America

- Cerro Tololo Inter-American Observatory, based in La Serena, Chile, funds Spanish courses for incoming staff and their families (go.nature.com/20x3mkv).
- The National Autonomous University of Mexico's Learning Center for Foreigners in Mexico City offers courses for all levels of Spanish as well as classes focused on Mexican culture (go.nature.com/1zj0q1d).

United Kingdom

- The University of Manchester has programmes of varying lengths in both general and academic English (go.nature.com/22bsgu0).
- Studio Cambridge provides intensive English courses for adult learners all year round (go.nature.com/1ujpfwa).
- Cambridge University Press offers *Cambridge English for Scientists*, a book on written and spoken English that comes with audio CDs (go.nature.com/1tzbyo). **C.W.**

says. “You can still say what you think, but you have to learn where and when.”

Even if a researcher doesn't move to another country, learning a new language can be helpful for collaborating with colleagues abroad and understanding the research in their field. While studying auklets as a PhD student in Newfoundland, Canada, Alex Bond found that several crucial papers and reports, as well as older publications about the small seabirds from the North Pacific Ocean, were in Russian. He could neither read nor speak it.

He converted his laptop keyboard to Cyrillic and turned to Google Translate, Wikipedia and a Russian-to-English dictionary for help. Soon, he could recognize names of places and species. When he started a postdoc at the University of

“If you learn the key words, it's easier for you to speak about issues in the lab.”

Saskatchewan in Canada, he arranged for tutoring in Russian and, after two years, his reading skills had improved. He felt that he was more of an asset to the Russian researchers with whom he was collaborating — he could understand papers that they wanted him to read, and incorporate studies in English into their co-authored papers. “Just because something's not in English doesn't mean you should ignore it,” says Bond, now a senior conservation scientist at the Royal Society for the Protection of Birds in Sandy, UK.

Fluency in the tongue of one's adopted nation also has advantages that may not directly affect research, but can boost life satisfaction. Heathcote spoke little Spanish for the first 3 years after he arrived in Chile more than 30 years ago. Then he met a Chilean woman. In three months, he went from having almost no Spanish to great eloquence — albeit with terrible grammar, he says. As for his new Spanish-speaking friend? He married her. ■

Cameron Walker is a freelance writer in Santa Barbara, California.

CORRECTIONS

The caption for the main image accompanying the Careers Feature ‘Change is in the air’ (*Nature* **532**, 403–404; 2016) named the wrong silver-spotted skipper. The picture is actually of *Epagyreus clarus*, not *Hesperia comma*. The Careers Feature ‘Take my advice’ (*Nature* **532**, 531–533; 2016) erroneously called Michael Lang a co-founder of mLEAD. He was one of the first consultants, but did not help to found the company.

TURNING POINT

Aerial archaeologist

Sarah Parcak helped to establish the use of satellite imagery to identify potential archaeological sites. Last year, she was awarded US\$1 million from TED, the non-profit organization devoted to spreading ideas. Parcak, a remote-sensing expert at the University of Alabama at Birmingham, plans to use the money to fulfil her dream of creating an online portal for citizen scientists to help discover archaeological treasures.



How did you get the idea to apply satellite imaging to archaeology?

My grandfather, Harold Young, a forestry professor at the University of Maine in Orono, was a pioneer in the use of aerial photography to look at forests. He would measure tree heights and look at the health of forests that were going to be used in paper manufacturing. I wondered how to apply that technology. He had passed away by the time I was an undergraduate. I was surprised to find that aerial imaging hadn't been applied to archaeology before.

Were you the first to use this technology?

There was a cohort of about six of us working mainly in the Middle East — in Turkey, Syria, Iraq and Egypt — to explore how to use satellite data, which has now helped practitioners move beyond their traditional focus on one site for an entire career. To understand sites in a broader context, it's not efficient to do work on the ground. You have to think big, look from above and follow old river courses.

How is your work changing archaeology?

I hope that I've encouraged colleagues to think of the scale of sites differently. Most recently, we discovered what may be a Viking settlement in Newfoundland, Canada. It was the first time that the technology had been used in the search for potential Norse sites. Using high-resolution satellite imagery, we found two potential sites that, when ground-truthed, yielded one likely Viking site. These techniques give you robust data that can be used to focus field efforts.

What about its use in previously studied areas?

Using high-resolution imagery, colleagues and I recently found what appeared to be a massive rectangular platform in one of the most well-surveyed archaeological zones in Petra, Jordan. Chris Tuttle, the executive director of the non-profit Council of American Overseas Research Centers in Washington DC, used drones to survey the object, and confirmed that it's massive — 80 metres by 40 metres — and dates to

2,000 years ago. Despite the site having been studied for 150 years, we missed what was probably a large ritual structure. Imagine what else we haven't found.

How did TED impact your work?

I gave a short TED talk in 2012 that aired on National Public Radio, and I was made a senior TED fellow two years later. The TED prize was very unexpected, to put it mildly. I got a message last summer saying that I'd been nominated. I filled out a ‘what would your wish be’ questionnaire. Then I had 18 minutes in February to make a public case for Global Xplorer, which is an online citizen-science platform to train an army of global explorers. I celebrated the work of colleagues but also gave the sense of real urgency that our field faces with so much destruction — from conflict to climate change — around the world. The prize completely changed my life. It's both an opportunity and major responsibility.

What do you expect Global Xplorer to accomplish?

Our team has scientific training and expertise; the bottleneck is the time spent searching through images. We have been scouring images to detect looting in the wake of the 2011 Arab Spring, and it has been one of the most depressing things ever. I believe to my core that the only chance we have to save cultural heritage sites around the world is to turn everyone into explorers. By turning people into what I call ‘space archaeologists’, they will develop a sense of pride and ownership in preserving our cultural heritage. I think it's one of the only chances to save the past. ■

INTERVIEW BY VIRGINIA GEWIN

This interview has been edited for length and clarity.