

Can Learning Languages Help You Better Understand Science and Technology?

by Philip Yaffe

"I was 24 years old when I first began thinking and speaking in a foreign language. It was like being released from prison. I saw my cell door swinging open and my mind flying free. That was over 40 years ago, but the picture is as fresh now as if it had just happened."

I am a linguistic iconoclast. Throughout my life (I am now in my seventh decade), I have heard the mantra that learning a foreign language gives you invaluable insights into the cultures of the people who speak it. I don't believe it.

In addition to my native English (I grew up in Southern California), I have become fluent in two other languages and have a good working knowledge of three more. I doubt that all this effort has given me any insights into the cultures of the people who speak these languages. At least no insights that I couldn't have acquired more easily in 30 - 60 minutes by reading a well-written essay or in a few hours by attending well-crafted social-cultural lectures.

By contrast, I have acquired a deeper understanding of science.

What does science have to do with language? Actually, very little. But it has a lot to do with flexible thinking. And this is where science and language learning converge.

Contrary to the common belief, science is not about certainty but rather uncertainty. Good scientists are always looking for what has been overlooked, i.e. they are always searching for surprises and welcome them when they happen. They know that moment we believe a phenomenon is "natural" and must be that way, or that it is "unnatural" and cannot be that way, we are either heading for trouble or missing out on something important.

For example, Albert Einstein investigated the "unnatural" belief that a beam of light in space must always have the same velocity; other scientists had spent decades trying to disprove this. He wanted to see where this "unnatural" might lead. In fact, it led to $e = mc^2$, the formula for atomic energy, and transformed the world.

It is not necessary to be a genius like Einstein (who spoke German, French, Italian and English), or even a scientist at all, in order to profit from the mind-stretching benefits of learning foreign languages. In our daily lives we all make assumptions about how the world works; often we are not even aware that we are making them. And that's the danger. If we are insensitive to our assumptions, we are almost certain to end up believing things that aren't true and refusing to believe things that are true.

Learning languages can help correct this parlous state of affairs. How? Quite simply, because nowhere else are our assumptions more rapidly and forcefully challenged by other assumptions about what is or isn't natural that are equally valid.

Here are some simple examples.

1. Trailing Adjectives

It is "natural" to put adjectives before a noun, e.g. "an unidentified flying object". Well not really. Many languages put adjectives after the noun, e.g. "un objet volant non-identifié". You could argue the "naturalness" of these conflicting practices both ways. In English, we prefer to describe something before identifying what it is, as if to build up the suspense. In French, they prefer to identify what it is first and describe it afterwards. Who is right?

2. Optional Pronouns

English speakers take it for granted that constructing a sentence requires a subject and a verb. The subject can be either a proper noun (John talks) or a pronoun (He talks). If you have any acquaintance with Spanish, you know that in this language the pronoun is usually not necessary. You would still say "Juan habla" (John talks); however, in most cases you would simply say "Habla" for "He talks". In fact, if you use a pronoun where it isn't required ("El habla"), you would be committing a serious error.

3. No Distinction between Male and Female

English speakers learning French are often puzzled by the language's apparent inability to distinguish between male and female. For example, "This is his book" and "This is her book" in French are both "C'est son livre". The possessive adjective "son" means both "his" and "her". If it is absolutely necessary to distinguish between "his" book and "her" book, there is a way of doing so. However, it is employed only when absolutely necessary.

But isn't it always absolutely necessary? It seems so unnatural not to specify whether the book's owner is male or female. Isn't this fundamental information?

It may seem so, but it isn't. By the same logic, it should be fundamental information to distinguish between male and female when saying "This is their book", but we don't. "This is your book" can be either male, female, or both, but we never specify. Even "This is my book" can be either male or female, but again we don't specify.

Having grown up speaking only English, you probably have never noticed this inconsistency in the language. Neither had I. I simply knew that it was "natural" to distinguish between his and her book, until a Frenchman asked me why. I couldn't tell him.

4. Inclusive and Explicit Forms of "You"

In English, we have only one way of saying "you", which covers all situations. Many languages have several ways of saying it, notably the "formal you" and the "familiar you". English used to have a familiar "you" (thou), but it has essentially disappeared. But in French and Spanish, for example, it is still widely used, making speakers of these languages feel that English is somehow "incomplete".

Spanish speakers are particularly poorly served. In their language, not only do they have a formal and familiar "you", they have them both in the singular and plural. In other words, in Spanish there are four ways of saying "you": formal singular (one person), familiar singular (one person), formal plural (several persons), familiar plural (several persons). For Spanish speakers, having these four options is natural and necessary; not having them in English is unnatural and constricting.

5. Exclusive and Explicit Verb Forms

English has very few verb forms. For example, in the present tense we say "I cook", "You cook", "He cooks", "She cooks", "We cook", "They cook". In other words, there are only two forms of the verb, "cook" and "cooks", depending on whom we are talking about. In the past tense English has only one verb form, e.g. "I cooked", "You cooked", "He cooked", "She cooked", "We cooked", "They cooked". Likewise in the future tense; everyone "will cook".

In other languages this is quite unnatural, because they use distinct forms for each different person being talked about. For example, in French and Spanish "I" is associated with one verb form, "you" with a distinctly different verb form, "we" with yet another form, etc. And of course there are distinct verb forms for the "familiar you" and "formal you" (singular in French, and both singular and plural in Spanish).

But doesn't all these differences make other languages significantly more complex than English? Yes, indeed. However, they also make them significantly more precise. For speakers of these languages, it is crucially important to make these distinctions, because this is how their minds have been trained to work. Just as it is crucially important for English speakers to distinguish between "his" and "hers", because this is how our minds have been trained to work.

Examples of these different ways of doing things from one language to another are endless. Each time we encounter them our mind opens up a little bit more, because the unexpressed assumptions we all carry around with us are continually being challenged.

Growing up in California, I used to be strongly opposed to language learning because it seemed so difficult and pointless. I have since changed my mind. I now strongly advocate language learning. Not because knowing a foreign language teaches us very much about others, but because it teaches us so much about ourselves.

Accepting that language learning is more about mind expansion than culture implies that language teaching must be fundamentally reformed.

I live in Belgium, where speaking two or three languages is the norm rather than the exception. This is generally true throughout Europe. In these

countries, teaching languages in the belief that people will actually use them makes sense. The mind-expanding aspects of the effort come along as a welcomed bonus.

However for English speakers in general, and Americans in particular, it is almost impossible to learn to speak foreign languages because it is so difficult to practice them outside of the classroom. Here, the mind-expanding aspects of language learning should be the primary objective, and courses designed and taught in consequence.

If this were done, I believe that the American fear - and dare I say loathing – of other languages could be reversed. The schools would lay down the foundations of a language without trying to force students into the hopeless and demoralizing task of trying to speak it.

With this foundation firmly in place, when a person traveled to an area where that language is spoken, he would be able to rapidly turn his passive knowledge into active use. Even better, even if he traveled to an area with a totally different language, he would understand how languages work and therefore be ready to learn the new language rapidly and without fear.

Finally, the general aversion – and again dare I say loathing – many monolingual English speakers have of science and technology might also moderate. A mind made flexible by language learning would find it much easier to grasp and appreciate scientific principles than one still imprisoned in single-language rigidity.

In an age dominated by science and technology, surely this would be a benefit of ineffable importance.

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