



Lost in Machine Translation

What instant translation does to the reasons for learning a language

— DR VICTORIA HOPKIN —

Madison Avenue, 1954

On the morning of 7 January 1954, at IBM's headquarters on Madison Avenue in New York, a woman who spoke no Russian sat down at a punch-card machine and typed a sentence she did not understand. The cards went into an IBM 701, a computer the size of a room, and a few seconds later a printer produced the sentence in English. We transmit thoughts by means of speech.

The journalists in the room had been invited by two men. One was Leon Dostert, a French-born linguist at Georgetown who had been Eisenhower's interpreter during the war and had organised the simultaneous interpreting at Nuremberg. The other was Cuthbert Hurd, who ran IBM's applied science division. Between them they had built a system with a vocabulary of 250 Russian words and six rules of grammar, and they had chosen more than sixty sentences, mostly about chemistry and politics, that the six rules could handle. The demonstration ran without a fault. The next day's newspapers reported that the language barrier had fallen.

Dostert, asked how long it would take to translate anything, said three to five years. He believed it. The United States government believed it too, and spent the next decade funding machine translation research on the strength of that morning. In 1966 a committee of the National Academy of Sciences reviewed what the money had bought and reported that machine translation was slower, less accurate and about twice as expensive as a human translator, and the funding stopped. The field went quiet for twenty years.

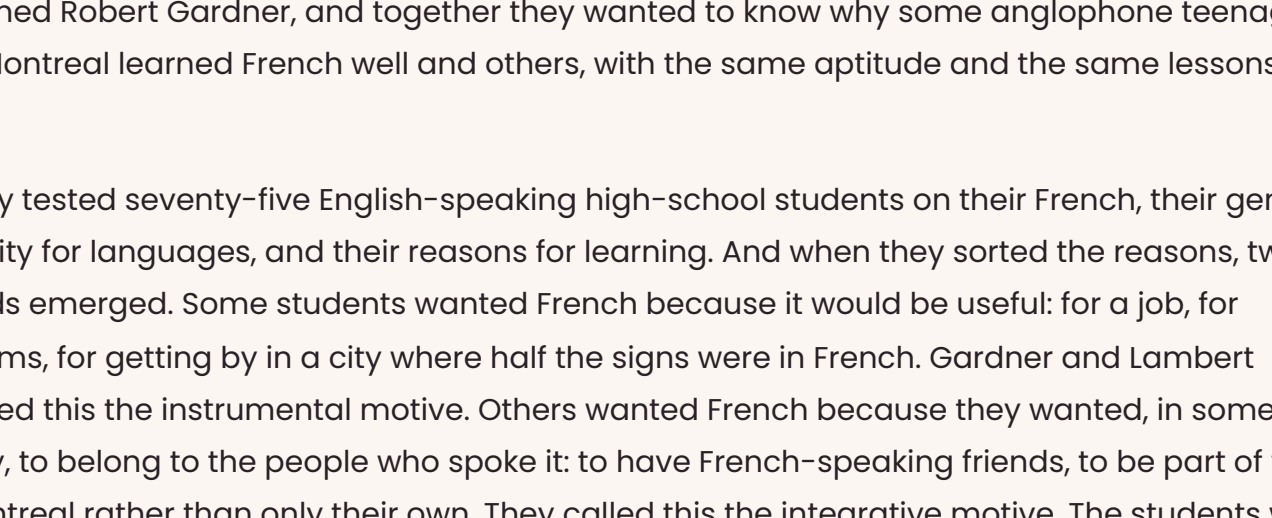


Fig. 1 — The promise came true, seventy-two years late. What it never covered was why anyone would go on learning to say the sentence themselves.

It is easy to tell this as a story about a promise that failed, and it usually is told that way. But look at the sentence the machine chose to translate first. We transmit thoughts by means of speech. Seventy-two years later, the machine can translate that sentence, and almost any other, in any of two hundred languages, in the time it takes to say it. The promise came true. What the promise never covered, and what nobody in the room on Madison Avenue thought to ask, was why anyone would go on learning to say the sentence themselves.

Two Motives

Five years after the IBM demonstration, and 300 miles to the north, two psychologists at McGill were asking exactly that question about a different language. Wallace Lambert, whose experiment with recorded voices opened the first piece in this series, had a graduate student named Robert Gardner, and together they wanted to know why some anglophone teenagers in Montreal learned French well and others, with the same aptitude and the same lessons, did not.

They tested seventy-five English-speaking high-school students on their French, their general ability for languages, and their reasons for learning. And when they sorted the reasons, two kinds emerged. Some students wanted French because it would be useful: for a job, for exams, for getting by in a city where half the signs were in French. Gardner and Lambert called this the instrumental motive. Others wanted French because they wanted, in some way, to belong to the people who spoke it: to have French-speaking friends, to be part of that Montreal rather than only their own. They called this the integrative motive. The students with the integrative motive learned more French. The effect held after aptitude was taken out of the account.

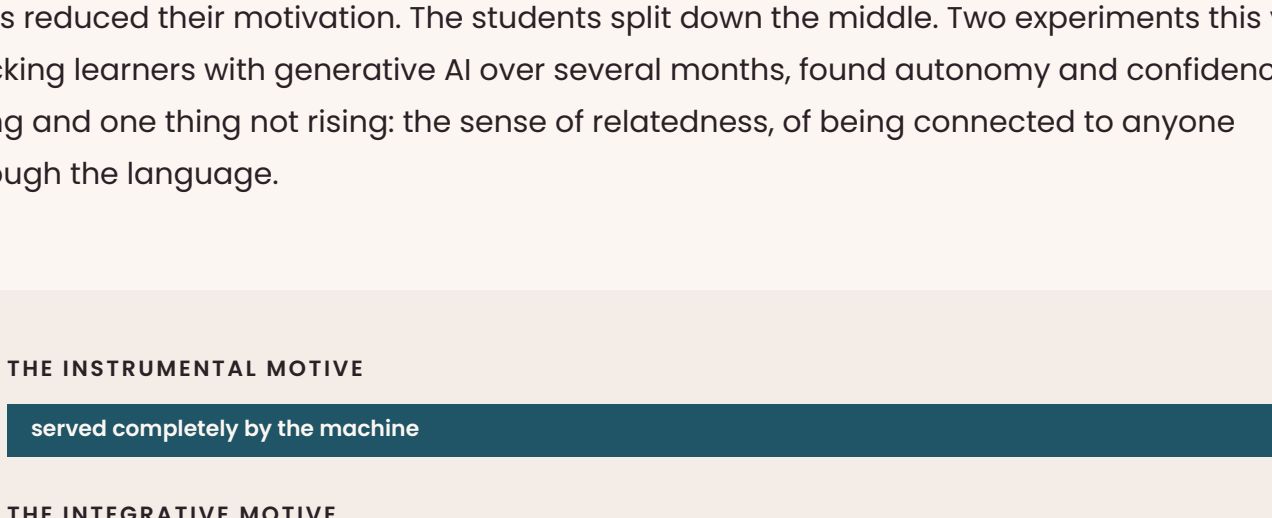


Fig. 2 — Gardner and Lambert's two motives (1959). The students with the integrative motive learned more French, and the finding has been refined for sixty years without being overturned.

That finding, published in 1959 and expanded into a book in 1972, became the foundation of the study of language-learning motivation, and it has been refined for sixty years without being overturned. Zoltán Dörnyei, the Hungarian who dominated the field until his death in 2022, reframed the integrative motive as an imagined future self: the learner who keeps going is the one who can picture herself, in some year to come, speaking the language as her own. Bonny Norton, at the University of British Columbia, called it investment rather than motivation, because a learner is buying an identity, not a skill. The words changed. The distinction did not. People learn languages for use, and people learn languages to belong, and it is the second that carries them through the years when the first is not enough.

Now put the two stories together. The machine on Madison Avenue was built to serve the first motive. It transmits thoughts. It does not, and cannot, make anyone belong to anything.

Why Learn?

This matters because the question schools are now being asked, by parents, by pupils, and increasingly by governors, is the one Dostert did not think of. If the phone translates, why learn?

The honest first answer is that the question is older than the phone. Ursula Lanvers at the University of York has spent a career documenting what she calls the Anglophone motivation deficit: the finding that English-speaking pupils, in Britain and elsewhere, have been asking why bother since long before any machine could answer them. In England, entries for GCSE languages fell for two decades. In the United States the Modern Language Association counted enrolments in languages other than English and found them down 16.6 per cent between 2016 and 2021, a period that ended a year before ChatGPT existed. The decline was not caused by translation. It was caused by a country where English was enough, which is another way of saying that the instrumental motive had already been satisfied by being born.

The second honest answer is that the research on translation tools in classrooms does not say what the question assumes. Sangmin-Michelle Lee at Kyung Hee University gathered every controlled study of machine translation in language learning she could find and published the meta-analysis in 2023. Students who used the tools wrote better, with fewer errors and more sophisticated vocabulary, than students who did not. Blanka Klimova, in a survey of 99 students in the Czech Republic published last year, asked directly whether the tools reduced their motivation. The students split down the middle. Two experiments this year, tracking learners with generative AI over several months, found autonomy and confidence rising and one thing not rising: the sense of relatedness, of being connected to anyone through the language.

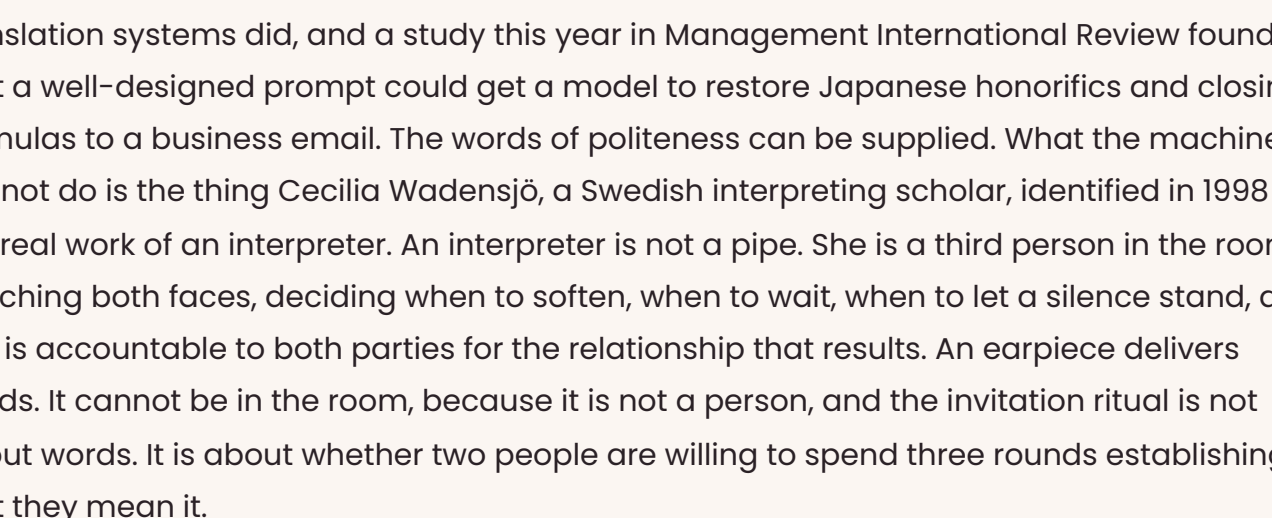


Fig. 3 — What the tools pay off. Two motives that travelled together in every classroom for sixty years have been separated by a piece of software, and only one of them has been settled.

So the evidence does not show that translation drains motivation. It shows something more precise. The tools serve the instrumental motive completely, and they do nothing at all for the integrative one. The pupil who wanted the language to get by now has a device that gets by for her. The pupil who wanted the language to belong is exactly where she was, because the device has nothing to offer her. Gardner and Lambert's two motives, which for sixty years travelled together in every classroom, have been separated by a piece of software, and only one of them has been paid off.

Three Refusals

What, then, is left for the one that has not? To answer that it helps to look closely at what the machine actually carries when it carries a sentence, and Mahmoud Al-Khatib, a Jordanian linguist, provides the cleanest example I know.

In 2006 Al-Khatib published a study of how invitations work in Jordan. An invitation to a meal, in the Levant, is not a question with a yes-or-no answer. It is a ritual with a shape. The host invites. The guest refuses, warmly, with a reason. The host insists. The guest refuses again, less firmly. The host insists a third time, and only now does the guest accept, and only now does the acceptance mean anything, because a guest who said yes at the first asking would have shown that he thought the invitation was about food. Al-Khatib recorded dozens of these exchanges and found the pattern almost unvarying. Every sentence in it translates perfectly. The exchange, translated sentence by sentence into English, is nonsense: a man refusing dinner three times and then eating it.

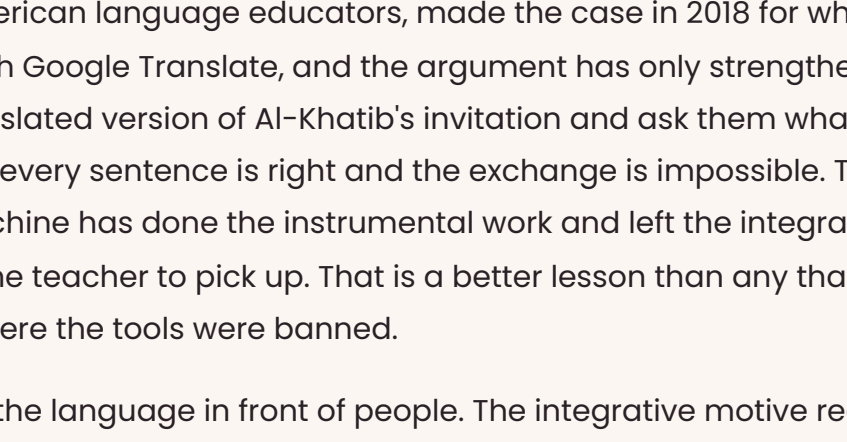


Fig. 4 — The Levantine invitation ritual (Al-Khatib, 2006). Every sentence in it translates perfectly. The exchange, translated sentence by sentence, is nonsense: a man refusing dinner three times and then eating it.

This is what the linguist Jenny Thomas, back in 1983, called sociopragmatic failure: not getting the words wrong but getting the situation wrong, using the right sentence at the moment when the culture required a different one. And Helen Spencer-Oatey at Warwick has spent twenty years showing that politeness, in every language, is not a set of phrases but a way of managing a relationship in real time, adjusting as the other person responds. The phrases are the least of it.

It would be easy to conclude that machines cannot do this, and a year ago that was roughly true. It is no longer safe to say. Binwei Yao and Diyi Yang at Stanford showed in 2024 that the large language models handle culturally specific expressions far better than the older translation systems did, and a study this year in Management International Review found that a well-designed prompt could get a model to restore Japanese honorifics and closing formulas to a business email. The words of politeness can be supplied. What the machine still cannot do is the thing Cecilia Wadensjö, a Swedish interpreting scholar, identified in 1998 as the real work of an interpreter. An interpreter is not a pipe. She is a third person in the room, watching both faces, deciding when to soften, when to wait, when to let a silence stand, and she is accountable to both parties for the relationship that results. An earpiece delivers words. It cannot be in the room, because it is not a person, and the invitation ritual is not about words. It is about whether two people are willing to spend three rounds establishing that they mean it.

Looking Up

Now come to Dubai, where the question arrives in an unusually sharp form.

From this year, under the policy described in the previous piece in this series, every child in the emirate's private schools learns Arabic from the age of four, and most of those children are not Arab. Their parents are asking the Madison Avenue question in its purest version: my daughter has a phone that speaks Arabic; why is she spending 200 minutes a week learning to do? And if the school's answer is the instrumental one, that Arabic will be useful, the parents are right to be unconvinced, because for a British or Indian family in Dubai it mostly will not be, and the phone will cover the rest.

"A child in Manchester learning French has to imagine a future self in Lyon. A child in Al Barsha learning Arabic has only to look up."

But Gardner and Lambert's other motive is, for these children, stronger than almost anywhere in the world. They live inside the language. The security guard, the neighbour, the friend's grandmother, the man at the bakery, the whole Emirati family whose son is in the same Year 2 class: these are not people in another country whom the pupil might one day visit. They are the room she is already in. A child in Manchester learning French has to imagine a future self in Lyon. A child in Al Barsha learning Arabic has only to look up. The integrative motive, the one the research says actually carries a learner, does not have to be manufactured here. It has to be pointed at.

That is what a translation earpiece cannot do and a school can. And it is why the third-time invitation matters more than it seems. A child who learns, from an Egyptian teaching assistant, that a Levantine invitation is refused twice before it is accepted has learned something the phone will never tell her, and something that changes how she stands in the room. She has learned that the language is a way of being with people, and that is the only reason, in the long run, that anyone has ever gone on learning one.

Three Things

Three things follow for a school, and none of them involves confiscating the phones.

The first is to stop selling utility. Every prospectus in the city says that Arabic is a valuable skill in the global economy, and every parent with a phone knows that the sentence is no longer true in the way it was. The case that survives the phone is Gardner and Lambert's: that a child who learns the language of the place she lives in belongs to it differently. That case can be made honestly, it is supported by sixty years of evidence, and it is the one parents in this city already half believe. It should be the first sentence of the Arabic policy and the first sentence of the parents' evening.

The second is to teach with the machine, not against it. Cynthia Ducar and Deborah Schocket, two American language educators, made the case in 2018 for what they called making peace with Google Translate, and the argument has only strengthened since. Give the pupils the translated version of Al-Khatib's invitation and ask them what is wrong with it. Let them find that every sentence is right and the exchange is impossible. Then teach them the ritual. The machine has done the instrumental work and left the integrative work sitting there, visible, for the teacher to pick up. That is a better lesson than any that could be taught in a classroom where the tools were banned.

The third is to put the language in front of people. The integrative motive requires someone to integrate with, and 200 minutes a week in a classroom with a non-Arab teacher and a screen does not supply one. A school that walks its Year 1 class to the school gate to greet the guard in Arabic, that pairs its Arabic B pupils with Arab families in the same year group, that invites the Emirati grandmother in to be refused twice and accept the third time, is doing something no policy requires and no phone can replace. It is the whole difference between a language that is learned and a language that is kept.

The Sentence

Leon Dostert died in 1971, five years after the committee that closed his field, and he did not see the machine on Madison Avenue become the earpiece in every pocket. But the sentence his team chose for the first demonstration has aged in a way that suggests he understood more than he said. We transmit thoughts by means of speech. The machine transmits them now, faultlessly, in any language you like.

It does not transmit the three refusals before the meal. It does not transmit the reason a child in Dubai might want to greet a guard in his own language rather than hers. Those were never in the sentence, and no machine will find them there, because they are not thoughts. They are the reasons people had for speaking to each other in the first place, and they are the only part of the language the phone has left for the school to teach.

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