**There is no machine translation**

Machine translation technologies are developing by leaps and bounds. They are increasingly penetrating the lives of people who have nothing to do with the translation business, not to mention professional translators.

Thanks to these technologies, an ordinary tourist can easily communicate with people from amazing countries whose languages they would have to spend half their lives learning. To read an advertisement written in Khmer, for example, you just need to point your smartphone camera at it and get a translation in a second. Skype can recognize your voice and automatically translate your words into another language in real time. The future has already arrived, it's not even outside the window - it's right in your hands.

Looking at all this technological triumph, one wonders what translators do and what they are paid for if the machine has already learned to instantly translate text, voice, and inscriptions from almost any language into any other?

**A CRUEL SYLLOGISM**

Let's make two strong statements.

First: translation is the transmission of meaning.

 Secondl: is that machines can't handle meaning.

No one usually argues with the first statement; the second, on the contrary, generates heated discussions. A detailed discussion of it can lead us into the jungle of philosophical reflections on what meaning is, what it means to think, and so on. However, it is hard to argue that modern computers, at least at the current stage of their development, do not extract meaning from a text in the human sense of the word.

These two statements inevitably lead to an unexpected conclusion: what a machine produces is not a translation a priori.

This conclusion often stuns not only an "ordinary" tourist but also many linguists. Why can't a machine translate? After all, my smartphone has already read me ads written in another language, and I've already had to translate texts from a completely unfamiliar language using Google Translate. It really works!

Let's understand the definitions.

UNSUCCESSFUL TERMS

In science, technology, and other areas of human activity, there are many unfortunate terms that have unfortunately become ingrained. They are "tolerated" and continue to be used not because they reflect the essence, but because everyone is used to them, historically.

For example, "supernova" is an unfortunate term. A supernova outburst is not the birth of a new star, as most people think, but rather the death agony of a dying old star. From a distance of thousands of light-years, it seems to us humans that a new star has lit up the sky, but in reality, somewhere infinitely far away, a star that had been shining for millions of years has died. By the way, "light year" is also an unfortunate term. When ignorant people hear the word "year," they perceive it as a unit of time, whereas light years measure huge astronomical distances.

"Machine translation" is another example of an extremely unfortunate term. Machine translation is an oxymoron. A translation cannot be machine translation. If it was done by a machine, it is not a translation, and if it was done by a human, it is not machine translation.

It's hard to know who coined the term "machine translation". Apparently, this person was far from linguistics or simply did not bother to come up with a more accurate term. And with this, he created a terrible terminological confusion: translation (the one that conveys meaning) was called the thoughtless substitution of words from one language for words from another, just because the results of these two processes are similar.

Thus, machine translation was perceived as a type of translation. There is a big difference, but in the eyes of ordinary people, the presence of the word "translation" in both terms levels it out.

Translation is a French wine, and machine translation is an attempt to reproduce its formula in a chemical laboratory. It is a surrogate. It looks the same, tastes the same, but it's still not the same. You wouldn't call this synthetic product French wine. But for some reason we call a synthetic product created by a machine to imitate a translation a translation.

If the process of replacing some words with others were called something else, without using the word "translation," there would be no terminological confusion and many related misunderstandings. It could have been called, for example, transposition, auto-conversion - anything, as long as it did not contain the word "translation."

Unfortunately, the unfortunate term "machine translation" has stuck.

MACHINES AND THE TESTING TEST

One might argue: how can this be? After all, machine translation is almost indistinguishable from human translation. Sure, it has some flaws, but it's understandable, and humans have flaws too!

Yes, that's right - the similarities are striking. After analyzing millions of sentences translated by humans (this is important), the machine itself derives very complex and not always clear dependencies between sentences in different languages. Subsequently, by applying them, it generates texts that make it difficult to tell whether they were created by a human or a machine. In other words, it successfully passes the Turing test.

However, this does not change the point: machine translation is meaningless in the sense that the machine that creates it does not think about what it creates. It is able to find frequently occurring words, determine how they are syntactically related, and determine the structure of sentences. However, unlike humans, it is not able to extract meaning from all this.

Machines are able to manipulate data and identify connections between them. They do it much better and faster than humans, which is what they were designed for. The amount of data can be huge, and then it is called big data. The patterns of relationships between them are sometimes unexpected and interesting. And the more data there is, the more complex the dependencies that are found between them, and the more machine translation resembles human translation. In such cases, they say: "the machine translation module is trained". However, training does not mean giving meaning.

For a machine, the text that is entered into it is just a sequence of characters and nothing more. Shakespeare's Hamlet, the ramblings of a schizophasic patient, lorem ipsum, and even a random set of letters typed by your cat while pacing on the keyboard are equally meaningless to it.

The machine will "translate" Hamlet and any abracadabra with equal care. Since it does not extract meaning from either, these are equally valuable (or, more precisely, equally meaningless) sequences of signs for it. And in their "translation" she will invest an equal amount of meaning-zero. For her, not only the source texts are meaningless, but also the texts she creates herself, no matter how meaningful they may seem to a human being.

MACHINES AND THE DUCK TEST

There is a so-called "duck test" that allows us to determine the essence of phenomena by their external manifestations. It is formulated as follows:

*If something looks like a duck, swims like a duck, and quacks like a duck, then it is probably a duck.*

At first glance, following the Turing test, machine translation passes the duck test with flying colors. After all, it looks like a translation, reads like a translation, and sounds like a translation - it would seem that there is every reason to believe that it is a translation.

But the devil is in the details. It's good to pass the duck test in ideal conditions - when you look at an object in daylight, from a short distance, and in calm conditions. What if this "duck" is swimming far away, on the other side of the river? What if you have myopia? What if it's already dusk or raining? What if you're driving a car and only had a glimpse of it?

You look closer, and it turns out that it's not a duck, but a goose, or an otter, or a strangely shaped cloud reflected in the water. And that's it - the duck test is failed. No wonder its author prudently left himself a loophole and included the word "probably" in its wording.

It's the same with machine translation. At first glance, everything seems fine, the words are syntactically connected, and the text is readable. However, if you read it more closely, the house of cards falls apart: the same term is translated differently in different places, the machine couldn't decipher the abbreviation here, didn't understand the joke there, "forgot" the gender of the protagonist here, wrote a messy set of words with a fake naivete, etc.

Each language has its own characteristic features of machine translation. Sometimes they are difficult to define, but experienced translators can immediately tell which text is human and which is machine-generated. You can't fool them.

To their credit, machines have learned to imitate human translation quite accurately, so that sometimes it is very difficult to tell the difference. This inspires tourists and frustrates translators. However, this is not translation, it is imitation. You're imagining things.

MACHINES IN SEARCH OF MEANING

As you can see, the dividing line between humans and machines is content. The question arises: what does a machine need to master meaning? What does it lack to bring machine translation to the level of human translation?

Let's take Hamlet as an example. It's an atypical text, but it makes it possible to show the difference between humans and machines in the most accurate way.

Even people sometimes have a hard time understanding this work. It is considered a classic, and children study it in schools. However, it is not well received in adolescence.

Only a trained reader can understand the meaning of Shakespeare's work. They should already know in advance what love, friendship, betrayal, irony, and revenge are. In order to understand the motives of the characters' behavior, you need to experience the feelings that envelop them at least once. You need to, as they say, "live in the world". That is why people usually begin to appreciate Hamlet in adulthood, having already had some life experience.

The already difficult task of translating such a multifaceted work into another language is further complicated by the fact that the events unfold in the Middle Ages, which are far from us, and the text is presented in verse. No wonder that the number of its various translations is enormous. There are more than 10 Ukrainian translations of Hamlet alone.

Conclusion: to understand what meaning the author put into his work, you need to understand human nature. In general, you need to have a model of the entire world in your head (in the case of a computer, in the processor). That's what translators are paid for - meaning. This is not a cheap thing.

To master meaning, a machine lacks the ability to be human. This is an offensive fact for a machine. However, it is not offended - it does not know the meaning of the word "insult".

Wrong conclusions

In the conclusion of each article, we usually summarize the "right" conclusions we have reached. This article is unusual: it will contain "wrong" conclusions. We are going to list things that do not follow from what we have written above.

* **A true translator will never use machine translation.** This is too categorical a statement. Using machine translation in translation does not mean covering yourself in shame. It is quite possible to use it. For example, a "trained" machine translation significantly speeds up the translation of similar technical texts. However, when using it, it's important to clearly realize that the author of the text you're working on has not thought about its content.
* **Machine translation is useless.** This is not entirely true. It's useless if you use it to solve problems it's not designed to solve. It can't cope with Hamlet, because the concentration of content is too high. So high that even humans translate it over and over again, but there is still no translation that suits everyone. However, there are tasks that machine translation solves successfully (we've already discussed them), and it is very useful for solving them.
* **Machines will never learn how to handle meaning**. We don't know that. In any case, this does not follow from the above. It is quite possible that one day your smart fridge will start writing poetry or want to discuss the meaning of its existence with you. It is also possible that the development of machines will go the other way and in the future we will face a Matrix-style techno-apocalypse.

One thing is for sure: when machines learn how to handle meaning, translators will indeed no longer be needed. However, it is impossible to predict when this will happen and whether it will happen at all.