IDIOMA: INGLÊS

Área 4

* Indica uma pergunta obrigatória

1. E-mail *

2. ÁREA *

Marcar apenas uma oval.

- 4-LINGUÍSTICA, LETRAS E ARTES

3. NOME DO CANDIDATO *

4. NÚMERO DA INSCRIÇÃO *

5. NÚMERO DO CPF *

Leia o texto e responda as questões a seguir em Português. Todas as questões dever ser respondidas de acordo com o texto. As respostas digitadas neste formulário eletrônico constituirão o ÚNICO documento válido para correção da prova.

AI is making scientists rethink language learning—and raising questions about grammar

For years, linguists believed that learning language is impossible without a built-in grammar template. New AI models prove otherwise.

by Morten H. Christiansen and Pabo Contreras Kallens – The Conversation

Unlike the carefully scripted dialogue found in most books and movies, the language of everyday interaction tends to be messy and incomplete, full of false starts, interruptions, and people talking over each other, authentic conversation is chaotic. It seems miraculous that anyone can learn language at all given the haphazard nature of the linguistic experience.

For this reason, many language scientists—including Noam Chomsky—believe that language learners require a kind of glue to rein in the unruly nature of everyday language. And that glue is grammar: a system of rules for generating grammatical sentences.

Children must have a grammar template wired into their brains to help them overcome the limitations of their language experience—or so the thinking goes.

This template, for example, might contain a “super-rule” that dictates how new pieces are added to existing phrases.

But new insights into language learning are coming from an unlikely source: artificial intelligence. A new breed of large AI language models can write newspaper articles, poetry and computer code and answer questions truthfully after being exposed to vast amounts of language input. And even more astonishingly, they all do it without the help of grammar.

Even if their choice of words is sometimes strange, nonsensical or contains racist, sexist, and other harmful biases, one thing is very clear: The overwhelming majority of the output of these AI language models is grammatically correct. And yet, there are no grammar templates or rules hardwired into them—they rely on linguistic experience alone, messy as it may be.

GPT-3, arguably the most well-known of these models, is a gigantic deep-learning neural network with 175 billion parameters. It was trained to predict the next word in a sentence given what came before across hundreds of billions of words from the internet, books, and Wikipedia. When it made a wrong prediction, its parameters were adjusted using an automatic learning algorithm.

The similarity with human language doesn’t stop here, however. Research published in Nature Neuroscience demonstrated that these artificial deep-learning networks seem to use the same computational principles as the human brain. The research group, led by neuroscientist Uri Hasson, first compared how well GPT-2—a “little brother” of GPT-3—and humans could predict the next word in a story taken from a podcast.

The researchers recorded volunteers’ brain activity while listening to the story. The best explanation for the patterns of activation they observed was that people’s brains—like GPT-2—were not just using the preceding one or two words when making predictions but relied on the accumulated context of up to 100 previous words.

GPT-2 can still model human next-word predictions and brain activations even when trained on just 100 million words. That’s well within the amount of linguistic input that an average child might hear during the first 10 years of life.

We are not suggesting that GPT-3 or GPT-2 learn language exactly like children do. Still, what these models prove is that a learner—albeit a silicon one—can learn language well enough from mere exposure to produce perfectly good grammatical sentences and do so in a way that resembles human brain processing.

Adaptado de: https://www.fastcompany.com/90798475/ai-is-making-scientists-rethink-language-learning-and-raising-questions-about-grammar (para fins educacionais)

6. **QUESTÃO 1: Por que a gramática é considerada importante na aprendizagem de línguas?** *

7. **QUESTÃO 2: Como os modelos de linguagem de Inteligência Artificial (IA) como GPT-3 e GPT-2 aprendem a linguagem de maneira diferente dos métodos tradicionais?** *

8. **QUESTÃO 3: Qual semelhança foi encontrada entre as redes artificiais de aprendizagem profunda e o cérebro humano?** *

9. **QUESTÃO 4: Quais evidências de que modelos de linguagem como GPT-2 e GPT-3 aprendem a linguagem de maneira semelhante ao cérebro humano?** *

10. **QUESTÃO 5: Como a quantidade de dados de treinamento para GPT-2 se compara ao conhecimento linguístico de uma criança nos primeiros 10 anos de vida, e o que isso sugere sobre a aprendizagem de línguas?** *