

CLEF 2023 JOKER Task 2 : Using ChatGPT For Pun Location And Interpretation

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Abstract

This report explores the use of ChatGPT for the localization and interpretation of wordplays in French, English, and Spanish puns. Wordplays, such as puns, are notoriously difficult to translate and interpret across languages due to the unique cultural and linguistic nuances present in each language. This report presents a novel approach using ChatGPT to analyze and interpret wordplays in these three languages.

Keywords

Wordplays, humor, artificial intelligence, ChatGPT, cultural references

1. Introduction

Humorous texts are a great challenge for translation. They use linguistic, cultural and universal aspects to create wordplay. However, people from different parts of the world don't use the same references, and some can be untranslatable. Consequently, translating humorous texts is a problematic task, as it requires maintaining the humorous effect in the target language [1]. A word can have two meanings in the source text, whereas two different words are required to express the corresponding meanings in the target language and so it's common to witness a loss of humor. Therefore, translators seek to adapt the source text while keeping the primary meaning, in order to have the same effects on the target audience. Machine translation (MT) has attracted attention in various ways, but can it do the same work as translators, at the same level of quality?

The development of machine translation (MT) technology has improved translation outcomes. However, the quality of MT for translating humorous texts still falls short, with errors related to lexical, syntactic, and semantic aspects. These errors indicate the need for human involvement in post-editing to preserve the humor and produce a similar effect. While MT can transfer the meaning of humorous texts, human creativity is essential for translating them effectively [1]. Is it the same with artificial intelligence?

¹CLEF 2023: Conference and Labs of the Evaluation Forum, September 18–21, 2023, Thessaloniki, Greece

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In recent years, artificial intelligence (AI) research has explored various aspects of human behavior, including emotions and creativity. Modeling humor presents a particular challenge due to its intricate and multi-faceted nature, and it can be interesting to see if AI can understand and convey humor [2].

This research aims to explore the use of ChatGPT in locating and interpreting humor in the context of the JOKER project [3]. In the first part, we will describe the task we had to complete and the data we used, as well as our working method. Then, we will present the results that we obtained. Finally, we will draw conclusions from these same results.

2. Approach

As part of the JOKER – CLEF-2023 project on Automatic Wordplay Analysis [3], we decided to analyze puns using ChatGPT.² This tool is an artificial intelligence (AI) whose function is to generate text. Internet users type their request in the chat in the language they want, and receive a response according to the ChatGPT policy. This may be an answer to a question, an answer to a mathematical equation, or even the writing of a text with information given by the interlocutor.

For example, we asked ChatGPT to introduce itself in English, and here's the exchange:

Prompt: Introduce yourself quickly

Answer: Certainly! I'm ChatGPT, an AI language model developed by OpenAI. My purpose is to assist users in generating human-like text based on the prompts and questions I receive. I've been trained on a wide variety of internet text sources, allowing me to provide information and engage in discussions on numerous topics. Whether you need help with general knowledge, creative writing, or even just a friendly conversation, I'm here to assist you to the best of my abilities. Just let me know how I can assist you today!

Our study focuses on the ability of this AI to locate and interpret jokes by itself, and therefore to judge its way of "thinking" and to sort out its "knowledge". This analysis is carried out within the framework of the JOKER project. This project is interested in the complexity of the translation of humor, not only from the human point of view, but especially concerning machine translators. The goal of the JOKER-2023 project is an approach to the automatic processing of wordplay. More specifically, our analysis corresponds to task 2 of the program: Location and Interpretation of puns in English, French, and Spanish.

² <https://openai.com/blog/chatgpt>

The puns analyzed all came from the JOKER project's data [4]. We had a corpus composed of three documents: one containing puns in English, another in French, and a last one in Spanish. These jokes had been previously sorted during task 1 (Detection of puns in English, French, and Spanish).

ChatGPT was tasked with locating puns and then interpreting them using the following model, which can be found in the JOKER project's guidelines:

ID	location	interpretation
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Each ID referred to a pun from the database. The AI had to locate which word or words carried the double meaning in the sentence and then interpret the wordplay. We then applied the classification guidelines of the JOKER project to the generated results, thus ending up with entries such as this one:

ID	location	interpretation
en_295	relief	"sigh of relief"/ relief (topography)

In this case the pun was “If you breathe heavily on the map, it will reveal topography, he said, with a sigh of relief.”.

To achieve this result, different prompts were required, and if the automatic analysis of the wordplay failed, we manually reviewed them and applied the project's guidelines to our results. All failed automatic analyses were highlighted for further research and possible classification. The prompts we used were as follows:

- *Locate and interpret the pun in this sentence:* “[pun]”
- *Localise le jeu de mots dans cette phrase et explique-le:* “[pun]”
- *Explain the wordplay:* “[pun]”

The third prompt was used for Spanish pun analysis, since it did not seem to matter whether the prompt was in the target language or not.

3. Results

Throughout this exercise, we found mostly accurate analyses. The failures usually occurred with idiomatic expressions and cultural references, especially in French. In English, we found instances where the pun was based around homophonic components to be one type of pun which the AI more often struggled to properly analyze. However, ChatGPT seemed to locate and analyze puns with a bit more ease when they were in English rather than in French : out of 363 English puns, 50 had to be manually analyzed while 80 out of 350 had to be reviewed in French. Further study of a larger number of puns is necessary to prove this tendency.

- Example of a French cultural reference that the AI failed to recognize and we had to manually analyze: [fr_133] “Je lis Voltaire admit candidement Tom”

fr_133	Je lis Voltaire	les écrits de Voltaire / une lettre de quelqu'un qui s'appelle Voltaire
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The word “candidement” carried the double meaning, and was a reference to Voltaire’s book *Candide*, yet the AI thought the pun was based around the name Voltaire.

- Example of a pun with homophonic components that ChatGPT failed to recognize: [en_549] ““I’ve an urgent appointment,” said Tom in Russian.”

Here, the AI found neither the location of the pun, being the word “Russian”, nor was it able to explain it. It answered as follows:

Prompt: Locate and analyse this pun : “I’ve an urgent appointment,” said Tom in Russian.

Answer: The English phrase "I've an urgent appointment" is a straightforward statement indicating that the speaker has an important and immediate meeting or engagement. However, when Tom says this phrase in Russian, it introduces a humorous twist due to the way the Russian language handles negation.

In Russian, the word for "urgent" is "срочное" (pronounced as "srochnoye"), while the word for "appointment" is "назначение" (pronounced as "naznachenie"). To create the negated form of these

words, the prefix "не" (pronounced as "nye") is added at the beginning. However, when "не" is attached to "срочное" and "назначение," it changes the pronunciation of the words.

The Russian phrase for "I've an urgent appointment" would be "У меня есть срочное назначение" (pronounced as "U menya yest' srochnoye naznachenie"). But when Tom says it in Russian, the humor arises from the fact that "не" (meaning "not" or "no") sounds similar to the English word "nyet," which means "no" in Russian.

So, when Tom says "I've an urgent appointment" in Russian, it sounds like "У меня есть 'срочное назначение'" (pronounced as "U menya yest' 'srochnoye nyetznachenie'"). The twist occurs because the word "назначение" (appointment) is altered to "нетзначение" (pronounced as "nyetznachenie"), which is a playful combination of "нет" (no) and "значение" (meaning).

Therefore, the pun relies on the phonetic similarity between "не" (no) and "нетзначение" (no meaning), creating a humorous situation where Tom's Russian phrase sounds like "I've an urgent 'no meaning'" in English.

We then manually reviewed it and ended up with the following results.

en_549	Russian	Russian / rushing
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Moreover, in order to be properly analyzed in the course of the project, puns had to be presented following the JOKER project's guidelines, the intended model being pun ID, pun location and pun interpretation like shown earlier. Which is why all AI generated answers had to be manually made to fit this model, since our prompts resulted in lengthy answers from ChatGPT such as the one cited earlier or this one:

- [en_1850]: "What did the nice girl say when her date invited her home to see his stamp collection? 'Philately will get you nowhere'"

This joke is a play on words that uses the term "philately" in a humorous way.

The word "philately" means the collection and study of postage stamps. In the context of the joke, the punchline suggests that the girl is not interested in seeing the man's stamp collection and that his interest in philately (stamp collecting) will not lead to any romantic success.

The joke plays on the similarity between the words "philately" and "futility," which means something that is pointless or unlikely to succeed. The punchline also uses a common saying

"getting you nowhere" to drive home the point that the girl does not see the value or appeal of the man's hobby.

Thus, finding a prompt to bridge this problem would be an interesting point to research further.

With regard to the use of ChatGPT on Spanish expressions the analyses in most cases were accurate. The AI was capable of identifying and explaining the wordplay. However, there were instances of failure. In many of these cases it failed to detect the wordplay and identified another part of the sentence which was incorrect. For example:

es_20	baño río.	Hay gente que ríe en el baño y yo me baño en el río.
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Here we can see the prompt and the answer provided by the AI:

Prompt: explain the wordplay: Hay gente que ríe en el baño y yo me baño en el río.

Answer: The wordplay in this phrase is based on the similarity in sound between "el baño" (the bathroom) and "el río" (the river) in Spanish.

The first part of the phrase, "Hay gente que ríe en el baño," means "There are people who laugh in the bathroom." The phrase may refer to the idea that some people feel embarrassed or uncomfortable using a public restroom, and they may try to alleviate their discomfort by laughing or making jokes.

The second part of the phrase, "y yo me baño en el río," is a play on words that uses the similarity in sound between "el baño" and "el río," which means "and I bathe in the river." This phrase is humorous because it substitutes the idea of a bathroom with the idea of bathing in a natural body of water, creating a funny and unexpected contrast.

Therefore, the phrase is a clever wordplay that creates a humorous comparison between the idea of a public restroom, which can be seen as a mundane and uncomfortable space, and the idea of bathing in a natural body of water, which can be seen as a refreshing and enjoyable activity.

Here, the AI detected "baño | río." as the area of wordplay, which isn't completely false, but in the interest of the wordplay as a whole, the program would have had to have done one of two things, either identify and explain the wordplay as "ríe en el baño | baño en el río" thus highlighting the words 'baño', 'ríe' and 'río' as roots of the wordplay, or identify and explain them individually. Out of 73 cases reviewed in Spanish, 64 were correctly analyzed by ChatGPT and the balance were either misinterpreted or unidentified partially or completely. Nevertheless, a much larger sample size would need to be analyzed to provide

further insight into the AI's effectiveness particularly with regard to those in which there were partial or complete failures.

4. Conclusion

While ChatGPT has advanced capabilities in language understanding and generation, it may not be specifically optimized for interpreting wordplay. The interpretation of wordplay relies on recognizing and understanding multiple meanings or wordplay within a given context. Puns involve a play on words, exploiting different senses or interpretations of words that sound similar but have different meanings. Interpreting puns can be challenging for AI models due to their reliance on contextual understanding, cultural references, and creative thinking.

Although AI models like ChatGPT can generate puns to some extent, their ability to interpret existing puns effectively may be limited. These models can recognize patterns and associations between words but may struggle with the nuanced wordplay and multiple interpretations inherent in puns. Puns often require a deep understanding of language, cultural context, and human creativity, which may still be beyond the capabilities of current AI models.

It's important to note that AI research and development are ongoing, and newer models beyond our knowledge cutoff may have made advancements in interpreting wordplay. However, given that AI systems are in a perpetual state of learning and evolution, there is room to continuously conduct research of this nature comparing the results, as the system internalizes information made accessible to it, to identify and evaluate if it was able to provide an improved explanation where it may have fallen short in previous studies mimicking typical human behavior.

5. Acknowledgments

This project has received a government grant managed by the National Research Agency under the program "*Investissements d'avenir*" integrated into France~2030, with the Reference ANR-19-GURE-0001. JOKER is supported by La Maison des sciences de l'homme en Bretagne (MSHB).

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