

## ARE TRANSLATORS STILL NEEDED IN THE AGE OF ARTIFICIAL INTELLIGENCE? VERBAL HUMOUR AS A TRANSLATION CHALLENGE: AI VS. HUMAN TRANSLATOR

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**Purpose:** The present paper evaluates the quality of AI-generated translation compared with a professional translation in the particularly challenging area of verbal humour translation. The objective of the paper is to establish whether AI-driven translation tools are able to recognise verbal humour mechanisms in a source text and recreate these mechanisms in translation from English into Polish.

**Design/methodology/approach:** The study applies a comparative method to assess the quality of translation provided by four AI-driven tools: two NMT-based tools (DeepL and Google Translate), and two LLM tools (ChatGPT-5 and Gemini 2.5 Flash) against a professional human translation. Translation quality was evaluated based on the reconstruction of verbal humour mechanisms. The research followed a communicative approach, prioritizing the humorous effect over literal accuracy.

**Findings:** It has been found that professional translation outperforms all four AI-driven translation tools in recreating mechanisms of verbal humour. While LLM-based tools are able to recognise various mechanisms of verbal humour and double meaning in the source text, neither NMT nor LLM tools can provide an effective translation of humour mechanisms operating on word ambiguity (homonymy, polysemy, and homophony). Google Translate, DeepL, and ChatGPT concentrate on the explicit meaning of the source fragments. Gemini's translation demonstrates an effort in rendering the ambiguity in some cases; however, the output tends to be flawed by calques from English and errors, which affects the communicative effect. The analysed NMT and LLM tools are able to reconstruct humour based on language style (blending of registers).

**Research limitations/implications:** The study is limited to English–Polish.

**Originality/value:** The paper responds to the growing concern regarding the future of translation as a profession. It shows that professional human translation outperforms AI-based tools in the complex task of humour translation, while pointing to specific areas in which AI tools fall behind and in which they prove useful. The research sees AI-powered applications as practical tools and not a substitute for professional translators in Society 4.0.

**Keywords:** machine translation, verbal humour, Society 4.0, AI, NMT, LLM.

**Category of the paper:** Research paper.

## 1. Introduction

Amid the rapid development of generative AI technologies, a growing number of workers are expressing anxiety about their career stability, a concern that has been making headlines across various media outlets. The fear of replacement by AI is the primary contributor to AI anxiety, a phenomenon described in psychological studies (see Kim et al., 2025). Benedikter (2023) argues that AI reshapes humans instead of serving them. Translators are among the professions considered particularly exposed to AI influence. Translation studies have raised concerns about the future of translation in the AI age. Schilling (2018, p. 181) observes that AI-driven translation tools have achieved substantial advancements in recent years in their pursuit of parity with human translation. The author describes AI tools as a potential threat to human translators and notices the shift in the role of human translators towards post-editing. Similarly, Tavares et al. (2023, p. 2) point out the improvement in the accuracy of translation tools, referring to the study by OpenAI, Open Research, and the University of Pennsylvania on large language models (Eloundou et al., 2023) which classified interpreting and translation as one of the professions with high exposure to AI. Łukasik (2024, p. 36) finds that translators, translation students, and university teachers in Poland are concerned about the future of translation and consider that AI might overcome limitations such as human-level creativity. A general conclusion drawn in his study is that the components of the translation process have evolved and the human translator can now be substituted with a machine translation tool. When included in the system, the translator's role is reduced to pre-editing, operating the tool, and post-editing (Łukasik, 2024, p. 38). In a similar vein, Tavares et al. (2023, pp. 19-20) indicate that translators are afraid of the devaluation of the profession caused by the use of AI in translation. However, according to the authors, the roles of human professionals will probably “evolve to focus on more complex or specialized tasks, or depreciate, while AI tools will be used for more routine or repetitive tasks”.

Several studies have assessed the quality of AI-generated translations. Constantin et al. (2023) describe a high level of accuracy in translating economic texts achieved by AI tools. In view of the results, the authors warn of the need for the reconfiguration of the profession. Gutiérrez Rubio (2024) conducted a study in which language users evaluated translations of various types of texts, prepared by AI tools and professional translators. The author considers the results alarming, given the fact that the respondents manifested a general high level of satisfaction with the automatic translation (DeepL and Google Translate), close to the results obtained by professional translation<sup>1</sup>. Some scholars indicate that creative texts are the least likely to be translated successfully by AI-powered tools (e.g., Kirov, Malamin, 2022, p. 9; Tavares et al., 2023, p. 20); however, the study conducted by Constantine (2019, p. 473),

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<sup>1</sup> Although professional translations still received a higher score.

in which the author assessed the quality of a literary text performed by Google Translate, concluded that in some fragments the translation was “surprisingly competent”.

The rapid development of AI-powered translation tools, the popularization of their use, and the growing concern among translators indicate the need for further research on machine translation and a scientific assessment of translation quality. The present paper assesses the quality of AI-generated translation compared with professional translation in one of the most challenging tasks: the rendering of verbal humour, which requires creative thinking from the translator. Despite the challenges posed by the task, comedies and comedy series that use verbal humour are translated on a daily basis. Professional translators understand the mechanism of humour. The question that remains is whether popular AI translation tools are able to recognise and recreate mechanisms of verbal humour. The present paper addresses this question with regard to translation from English into Polish. The study adopts a communicative approach, as the humorous effect is considered to take precedence over literal accuracy in a successful translation of verbal humour. We apply a comparative method by looking into four popular AI-powered translation tools: two NMT-based tools (DeepL and Google Translate) and two LLM tools (ChatGPT-5 and Gemini 2.5 Flash). The study is based on 30 fragments of the American TV situation comedy *How I Met Your Mother*, in which various mechanisms of verbal humour were identified. The quality of translation is assessed based on the reconstruction of humour mechanisms. Although several studies have investigated AI translation, little is known about the ability of AI systems to translate humour. To our knowledge, the present paper provides the first systematic analysis of AI tools’ capabilities in recognising and reconstructing mechanisms of verbal humour.

## 2. Literature Review

### 2.1. Machine translation

Ungvarsky (2024) defines machine translation (MT) as “a technological process that enables the conversion of text from one language to another without human involvement”. The concept of machine translation was first introduced by Warren Weaver in 1947 (Wang et al., 2022, p. 143). Since then, MT has undergone a series of fundamental methodological transformations, evolving through distinct technological paradigms that reflect broader advances in computational linguistics and artificial intelligence.

Early methodological developments in the field were dominated by Rule-Based Machine Translation (RBMT) approaches, which relied on manually constructed rules and bilingual dictionaries (Wang et al., 2022, p. 143). With the advent of large bilingual corpora, corpus-based methods gradually supplanted RBMT after the 2000s, giving rise to Example-Based

(EBMT), Statistical (SMT), and later Neural Machine Translation (NMT) techniques. Statistical machine translation, first proposed by Brown et al. in 1990, shifted the paradigm by enabling machines to learn translation patterns directly from data. This data-driven approach underpinned major commercial translation systems, including Google's 2006 SMT service (Wang et al., 2022, pp. 143-144).

The rapid progress of deep learning research in the early 2010s then catalysed a transition toward neural machine translation, with Google shifting to an NMT system in 2016. Wang et al. (2022, p. 145) describe NMT as an end-to-end approach that learns semantic representation and translation patterns directly from training data. The core principle of NMT is to employ a neural network that encodes the source text into a continuous semantic representation and decodes this representation with the help of attention mechanisms to produce the target text (Wang et al., 2022, p. 144). Many of the currently available modern applications are based on NMT, for example, Google Translate, Microsoft Translator, Reverso, and DeepL.

However, as Lewin et al. (2024) note, a new form of machine translation has recently emerged: generative artificial intelligence, which relies on large language models (LLMs). LLMs are deep-learning AI models trained on vast amounts of data. Their extensive training enables them to handle a wide range of language processing tasks, including translation. Although LLMs were not created specifically for translation, their broad linguistic capabilities allow them to perform in this area. LLMs can deliver fluent, natural-sounding translations. According to Lewin et al. (2024), LLMs have the potential to become dominant technologies in machine translation. ChatGPT, Gemini, and Claude are the most famous, yet not the only, examples of LLMs currently used. The study by OpenAI, Open Research, and the University of Pennsylvania on AI large language models (Eloundou et al., 2023, p. 4) indicates that ChatGPT is a general-purpose technology that excels in translation, classification, and creative writing. The cited study by OpenAI states that LLMs should be integrated as building blocks for more comprehensive tools, a recommendation that appears to be currently implemented through hybrid translation solutions. For example, DeepL has recently introduced a new model which adds an LLM technology to its previous classic model. Traditionally used CAT tools, like MemoQ, have also been implementing generative AI into their offer. There are other online platforms that combine machine translation and human editing, e.g., Unbabel, Smartcat, Phrase, or Smartling.

## **2.2. Translation of humour**

Translation is an act of communication. The most basic, and arguably the most influential, communication model is the one created by Jakobson (1960), which differentiates six elements present in any act of verbal communication: addresser, addressee, message, context, channel, and code. When considering translation, two communicative situations, separate in time and space, should be distinguished. A translator is the mediator between these two situations. In the first situation, the translator is the addressee; in the second, the addresser. Any act of

communication has a determined function. The task of a translator as an addressee is to capture both explicit and implicit meanings in the source text, as well as the author's intention. Subsequently, as an addresser, they should reconstruct the same message in the target language, maintaining the purpose of the source text (Lipiński, 2004, p. 20). The purpose of humorous texts is to produce laughter.

The humorous effect can be achieved through extralinguistic and linguistic measures. In the first type, language describes a situation, object, relation, or person, but the comic effect arises from the situation or world model and not the language itself. In the second type, the source lies in the language itself (e.g., wordplay or puns). The second type is known as verbal (or linguistic) humour (Kalaga, 1997, p. 12). The present paper concentrates on verbal humour; however, we should bear in mind that it is not possible to separate the linguistic unit from its connotations, culture, and world-models embedded in the language. Therefore, the linguistic and extralinguistic underpinnings of humour cannot always be separated.

A joke consists of a setting of a scene followed by a punch line, with its basis being an incongruity between the punch line and what comes before (Alexander, 1997, p. 15). Jokes might rely on puns, that is to say a specific kind of wordplay based on the polysemy of a single word (one form with multiple meanings), or the use of homophones, homonyms, or near-homonyms (lexical items sharing the same or similar phonetic or graphic form but different meanings). In a wider sense, strict homonymy is not necessary; it is enough for the speaker to allude to a word or a distant formal similarity (Alexander, 1997, pp. 17-18). Alexander uses the term in a broader sense and defines a pun as wordplay that depends on lexical ambiguity. In other words, puns depend on combining two meanings in one form. Beyond homonymy, polysemy, and homophony, other mechanisms of verbal humour differentiated by Alexander (1997, pp. 27-54) include:

- operating on rhythm and rhyme,
- alliteration and assonance,
- changing word boundaries,
- changing of the voice quality (e.g., imitating other person's way of speaking),
- creation of portmanteau words and other neologisms,
- punning acronyms,
- errors in hard words.

The foregoing list can be complemented by humour mechanisms distinguished by Buttler (2001, pp. 68-150), namely:

- mechanisms of general humour based on excess and exaggeration, contrast of different elements, and stylistic disharmony,
- modification of idioms, phrases, collocations, or the form of lexemes,
- blending of different styles and registers.

Translation of humour is considered a complex task, and scholars often describe humour in terms of its untranslatability (see Gumul, 2005). Nevertheless, the translation of humorous texts is a common practice and translators apply different techniques to convey humour.

### 2.3. Audiovisual translation

In the most general terms, we can define audiovisual translation (AVT) as the translation for cinema, television, and video, in which audiovisual texts such as films, teleplays, and documentaries are translated. What distinguishes audiovisual translation from other types of translation is the way in which the meaning is conveyed. While in other types of translation, information is represented exclusively at the linguistic level, the audiovisual message is transmitted by means of sounds, images, music, and language. A translator can intervene only at the linguistic level, which complicates the task. In other words, audiovisual translation is constrained by other non-linguistic elements (Hurtado Albir, 2004, p. 77).

Audiovisual texts are translated using various modes. Chaume (2004, pp. 31-38) defines an AVT mode as a technical method used to accomplish the linguistic transfer of an audiovisual text from one language to another and enumerates several AVT modes, among which the most popular ones are dubbing and subtitling. Each translation mode determines the work of a translator. In the case of subtitles, there are technical constraints related to the fact that subtitles cannot occupy too much space on the screen and hinder the perception of the image. As Tomaszewicz (2008, pp. 112-113) explains, about 30-40% of the original text is omitted in subtitling.

## 3. Methods

The primary criterion for evaluating translation quality in this study is the humorous effect achieved in the target text and its equivalence to the effect achieved in the source text. In order to assess the humorous effect, we focus on the recreation of the verbal humour mechanisms used in the original version. We identify these mechanisms in the source text referring to the classifications proposed by Alexander (1997) and Buttler (2001) and analyse their representation in translation. Using a contrastive methodology, the study examines the differences between AI and human translation, assessing their respective strengths and weaknesses, as well as the level of communicative equivalence achieved. The study does not take into account the technical constraints usually imposed by the mode of translation (e.g., the length of the output text); instead, the focus remains on the communicative goal.

The study is based on 30 examples of verbal humour selected from the American sitcom *How I Met Your Mother*, directed by Pamela Fryman and Rob Greenberg and produced by 20th Century Fox Film Corporation. The series was chosen due to the abundance of jokes, puns,

and other mechanisms of verbal humour within its dialogue. The analysis covers the first two seasons of the series. First, examples of verbal humour were identified and transcribed from the source text. Subsequently, they were categorised according to their specific verbal humour mechanism. For each example, respective professional and machine translations were collected.

The analysis includes five different translations into Polish, one of which is a professional translation and four are AI-generated. As the professional human translation of the series, we chose the subtitles distributed in Poland by Imperial CinePix in DVD format. The distributor does not make public the name of the author of the subtitles; however, it is assumed that such a person possesses translation competence as they translate professionally. The choice of an older DVD translation (2012) was intentional and aimed at eliminating the risk of AI involvement in the translation process. As for the AI-generated translations, two NMT-based tools (Google Translate and DeepL, free version) and two LLM-based tools (ChatGPT-5 and Gemini 2.5 Flash, free version) were used. The study does not analyse hybrid tools that combine NMT and LLM solutions, since a hybrid solution considered for the study (DeepL's Next Gen model) was not available for Polish at the time of the analysis.

The LLM-based tools were prompted to recognise the verbal humour mechanisms in the source texts and translate them into Polish, while maintaining the humorous effect and adapting the target text to the target language when necessary. Each example was fed into the respective tool separately and the tools were instructed to choose the most suitable version of translation for each example. Explanations of the situational context for each fragment were provided (e.g., location of the characters, social context). As far as the NMT-tools are concerned, there is no field dedicated for a prompt as such. However, an explanation of the context and purpose was added before the actual text selected for translation. Our hypothesis was that models based on LLMs would perform better than the ones based solely on NMT, since the latter translate based on learnt patterns between languages and the former are generative. Our estimation was that they might be able to go beyond literal accuracy to recreate some mechanisms of verbal humour and convey the humorous effect.

## **4. Results**

### **4.1. Homophony**

We have identified nine cases of verbal humour based on homophones or near-homophones in the analysed corpus (see Table 1). In each case, the humorous effect in the source text was achieved through phonetic similarity between two different lexemes or phrases.

**Table 1.**  
*Examples of verbal humour based on homophony*

| N | original  | Google Translate  | DeepL  | ChatGPT 5  | Gemini 2.5 Flash   | professional translation  |
|---|---|---|--|--|--|---|
| 1 | A: If things had gone your way, you'd gone out a couple of times, she definitely would've had sex with you.   | A: Gdyby wszystko poszło po twojej myśli, umówilibyście się kilka razy, na pewno by się z tobą przespała.   | A: Gdyby wszystko poszło po twojej myśli, spotkaliście się kilka razy i na pewno uprawialibyście seks.   | A: Gdyby wszystko poszło po twojej myśli, spotkalibyście się kilka razy i na pewno by z tobą poszła do łóżka.  | A: Gdyby poszło po twojej myśli, wyszedłbyś z nią parę razy, to na pewno by się z tobą kochała.  | A: Gdybyś się z nią parę razy umówił, mógłbyś śmiało do niej walić.   |
|   | B: There's no would/wood in sex... Aaa, haha, yeah, there totally is.   | B: W seksie nie ma miejsca na „chciałbym/drewno”... Aaa, haha, tak, zdecydowanie jest.  | B: W seksie nie ma miejsca na „byłoby/byłoby”... Aaa, haha, tak, oczywiście, że jest.  | B: W seksie nie ma żadnego „by”... A: Oj, jest, i to twarde jak drewno!  | B: Gdzie tam, w seksie nie ma żadnego „kocha”... Aaa, haha, racja, jednak tam jest!  | B: W seksie nie ma walenia. – Fakt.   |
| 2 | A: I was such a dork, I get recognised one time and I'm starting thinking I'm Julia Roberts. I'm not a VIP, I'm not even an IP, I'm just a lowly, little P sitting out here in a gutter.                                    | – Byłem takim palantem, raz mnie rozpoznano i zaczynam myśleć, że jestem Julią Roberts. Nie jestem VIP-em, nawet nie jestem IP, jestem tylko małym, mamnym P siedzącym tu w rynsztoku.  | A: Byłem takim kretynem, że kiedy raz mnie rozpoznano, zacząłem myśleć, że jestem Julią Roberts. Nie jestem <i>VIP-em</i> , nie jestem nawet IP-em, jestem tylko skromnym, małym P siedzącym tutaj w rynsztoku.  | A: Ale ze mnie była sierota. Raz ktoś mnie rozpoznał i już myślę, że jestem Julia Roberts. Ja nie jestem żadnym VIP-em, nawet nie IP-em... jestem tylko małym, nędznym „P”, co siedzi tu w rynsztoku.                                      | A: Byłem takim durniem... Nie jestem VIP-em, nie jestem nawet IP, jestem tylko takim nędznym, małym sikaczem siedzącym w rynsztoku.  | A: Ale ze mnie lama. Ktoś mnie raz zauważył i już się uważam za Julię Roberts. Nie jestem VIP-em. Nawet nie jestem IP-em. Jestem samotnym małym pipem siedzącym w rynsztoku.                      |
|   | B: You know something, I'd take a P in the gutter over Julia Roberts any day.   | – Wiesz co, wolałbym P w rynsztoku niż Julię Roberts każdego dnia.  | B: Wiesz co, wolałbym P w rynsztoku niż Julię Roberts każdego dnia.  | B: Wiesz co? Ja bym tego „P” z rynsztoka wziął zamiast Julii Roberts — i to z pocałowaniem ręki.   | B: Wiesz co, wolę sikać do rynsztoka niż Julię Roberts kiedykolwiek  | B: Wiesz, wole pipę z rynsztoku niż sto Julii Roberts.  |
| 3 | So next time you're passing City Hall, make sure and stop by New York's oldest hot dog cart. Today a delicious hot dog will cost you 2,50 but back when the stand first opened in 1955 you could get one for only a nipple. | Więc następnym razem, gdy będziesz przechodzić obok ratusza, koniecznie zatrzymaj się przy najstarszym wózku z hot dogami w Nowym Jorku. Dzisiaj pyszny hot dog kosztuje 2,50, ale kiedy budka się otwierała w 1955 roku, można go było dostać za jedynego sutka. | Więc następnym razem, gdy będziesz przechodzić obok ratusza, koniecznie zatrzymaj się przy najstarszym wózku z hot dogami w Nowym Jorku. Dzisiaj pyszny hot dog kosztuje 2,50, ale kiedy wózek został otwarty w 1955 roku, można było go kupić za jedyne 5 centów. | Następnym razem, gdy będziesz przechodzić obok Ratusza, koniecznie wstąp do najstarszego w Nowym Jorku wózka z hot dogami. Dziś pysznego hot doga kupisz za 2,50, ale kiedy stoisko otwarto w 1955 roku, można było go dostać za... sutek. | Więc następnym razem, gdy będziesz przechodził obok Ratusza, koniecznie wstąp do najstarszego nowojorskiego wózka z hot dogami. Dziś pyszny hot dog kosztuje 2,50, ale kiedy budka pierwszy raz otworzyła się w 1955 roku, można go było dostać za jedynego sutka. | Kiedy następnym razem będziecie w pobliżu ratusza, zatrzymajcie się przy najstarszym w mieście wózku z hot dogami. Zapłacicie 2,50. Ale w inauguracyjnym 1955 roku, wydalibyście 5 centów. Cycus. |

Cont. table 1.

|   |   |   |  |   |   |  |
|---|---|---|--|---|---|--|
| 4 | Hey, is it cold in here? Cause I kind of see Robin's nickles.   | Hej, zimno tu? Bo widzę, że Robin ma jakieś pięciocentówki.   | Hej, czy tu jest zimno? Bo widzę piątki Robin.   | Ej, tu zimno, czy to ja mam tylko wrażenie, że widać cycki Robin?   | A: Hej, czy tu jest zimno? Bo mi się wydaje, że Robinowi aż grosze wychodzą.                                    | Mam omamy czy coś tu chłodnawo?  |
| 5 | A: Or we could just drink wine?   | A: A może moglibyśmy po prostu napić się wina?  | A: A może po prostu wypijemy wino?   | A: Albo po prostu napijmy się wina?   | A: A może po prostu napijemy się wina?  | A: Możemy też napić się wina?  |
|   | B: Wine not?... Oh, that's the stupidest thing I've ever said.  | B: Wina nie?... Och, to najgłupsza rzecz, jaką kiedykolwiek powiedziałem.   | B: Wino, czemu nie?... Och, to najgłupsza rzecz, jaką kiedykolwiek powiedziałam.                                       | B: Więc czemu nie...? Ojej, to najgłupsze, co kiedykolwiek powiedziałem.  | B: Winna nie?... O rany, to najgłupsza rzecz, jaką kiedykolwiek powiedziałem.                                   | B: Całkiem niewinnie. Kretyńska odzywka.   |
| 6 | But just know that this Victoria Secret party is on a yacht. And what will be sticking to that yacht? The Barnacle. | Ale wiedzcie, że ta impreza Victoria Secret jest na jachcie. A co będzie się do tego jachtu przyklejać? Barnacle. | Ale pamiętajcie, że impreza Victoria Secret odbędzie się na jachcie. A co będzie przyklejone do tego jachtu? Barnacle. | A: Tylko wiedz, że ta impreza Victoria's Secret jest na jachcie. B: A kto będzie się przyklejał do tego jachtu? Barnakiel.          | A: Pamiętaj, impreza Victoria's Secret jest na jachcie. I co będzie się do tego jachtu przyklejać? Rzep Barney! | A impreza bielizniana jest na jachcie. A co się do jachtu przyczepi? Barniałek-ukwiałek. |
| 7 | A: So, what does a fellow have to do to get lei'd around here?  | A: Więc co trzeba zrobić, żeby tu dostać lei? ... Tak.  | A: Więc co facet musi zrobić, żeby dostać lei w tym miejscu? ... Tak.  | A: No dobra, co trzeba zrobić, żeby tu się trochę położyć?... No właśnie.   | A: Co koleś musi zrobić, żeby go tu zaliczono? ... No właśnie.  | A: Hawajki to największe łatwodajki świata.  |
|   | B: Yeah. Right, cause I'm wearing a lei.  | B: Jasne, bo noszę lei.   | B: Racja, bo noszę lei.  | B: Jasne, bo mam na sobie wieniec.  | B: A tak, bo mam na sobie girlandę.   | B: No tak, wysyłamy sygnał: „Cho-no lulu”.   |
| 8 | It's gonna rain cats and dogs, folks, so don't step on a poodle.  | Będzie lało jak z cebra, ludzie, więc nie nadepnij na pudła.  | Będzie lało jak z cebra, ludzie, więc nie nadepnijcie na pudła.  | Będzie lało jak z cebra, więc uważajcie, żeby nie nadepnąć na pudła.  | Będzie padać kotami i psami, ludziska, więc uważajcie, żeby nie nadepnąć na pudła.                              | Będzie wiało i lało, więc uważajcie, by nie oberwać.                                     |
| 9 | A: Your problem is all you do is think, think, think. I'm teaching you how to do, do, do.                           | Twój problem polega na tym, że tylko myślisz, myślisz, myślisz. Uczę cię, jak robić, robić, robić.                | Waszym problemem jest to, że tylko myślicie, myślicie, myślicie. Ja uczę was, jak działać, działać, działać.           | Twój problem polega na tym, że tylko myślisz, myślisz, myślisz. A ja cię uczę, jak działać, działać, działać. – Działać, działać... | A: Twój problem to tylko myślenie, myślenie, myślenie. Ja cię uczę, jak działać, działać, działać!              | Wciąż tylko myślisz i myślisz. Naucz się działać i działać.                              |
|   | B: Doo-doo.   | B: Du-du.   | B: Doo-doo.  | B: kupa.  | B: Dudu!  | B: Dział dział.  |

The professional translation manages to convey the humorous effect in eight out of the nine examples analysed. The only one that does not achieve a humorous effect is Example 4. It is worth noticing that the professional translator does not always resolve the problem of translating homophony by seeking corresponding homophones in the target language. Instead, they employ a range of alternative mechanisms to achieve the humorous effect. Specifically, Examples 1 and 8 exploit the polysemy of the verbs “walić” and “łać” respectively, to maintain

the double meaning effect. Example 9 builds its translation on the homonymy of the forms "dział", oscillating between the nominative form of the noun "dział" ("department"), and the genitive form of the noun "działo" ("cannon"). A different approach is observed in Example 7, where a double meaning effect and the intended innuendo are achieved via a near-homophony between the sentence "chodź no lulu" (the imperative form of the verb "chodzić" and "lulu" being a colloquial expression used to mean "to bed") and "Honolulu" (a city in Hawaii). Furthermore, Example 2 renders the original pun by using a near-homonymy of the vulgar noun "pipa" and a made-up word "pip" based on the expression "VIP". The translation maintains the double meaning effect and the absurdity present in the source text. Similarly, Example 5 achieves the intended effect by homonymy of the word "winny" (meaning both "guilty" and "related to wine"). The translation uses a derivative of "winny", the adverb "niewinnie", which maintains the allusion to "wino" ("wine") successfully. By contrast, Example 6 uses the mechanism of rhythm and rhyme instead of the original near-homophony. Finally, Example 3 shows how the humorous effect is achieved by the absurdity of an unexpected interjection. The equivalents of the words that formed the originally used pun are included explicitly in the translation. It is worth noting that professional translation does not concentrate on the literal meaning of the source texts, but rather exploits unexpected connections between language units and uses various verbal humour mechanisms.

As for the NMT tools, both Google Translate and DeepL concentrate on the explicit meaning of the original fragments. Example 3 shows that, while Google Translate opts for the equivalent of the noun "nipple", which is the one explicitly present in the original; DeepL opts for the equivalent of the noun "nickel", which is the one that matches the situational context. None of the analysed examples convey the double meaning effect. Both NMT tools recognise the idiom "to rain cats and dogs" and apply its Polish functional equivalent. In some cases, the English words are maintained (e.g., "lei", „Barnacle”, and "doo-doo" or "du-du"), with the latter being adapted orthographically. As a general observation, NMT tools do not achieve the humorous effect and do not employ mechanisms of verbal humour in this group.

Regarding the LLM-based tools, it is important to emphasize that both ChatGPT-5 and Gemini 2.5 Flash recognise the mechanisms of verbal humour employed in the original fragments; in the case of the above examples: the homophony or near-homophony, double meanings and innuendos. The tools analysed the provided fragments with precision and proposed various versions of explanatory translation. However, when prompted to choose one version, they seem to be unable to achieve the humorous effect since neither of the analysed examples recreates the mechanisms of verbal humour and maintains the double meaning effect. ChatGPT tends to concentrate on the explicit meaning in Examples 1, 2, 3, 7, 8, and 9. Gemini attempts to create a pun based on the morphology of the verb "kochać" (Example 1); however, a double meaning effect is not achieved. It also shows a tendency towards adaptation for a Polish viewer, e.g., Example 4 shows adaptation to the Polish currency, and example 6 applies the word "rzep" ("burr") as a typical clinging object, present in Polish phraseology.

In Example 2, Gemini refers to the implicit meaning of the source text; however, the wordplay between the letter P (as an element of the acronym VIP) and the verb “pee” is lost. In Examples 3 and 7, Gemini concentrates on the explicit meaning. In Example 8, ChatGPT uses a functional equivalent of the original idiom, whereas Gemini opts for the literal translation of the English idiom to maintain the connection with the word “poodle”; however, neither of the translations recreates the humorous wordplay. In some cases, both tools use atypical forms in Polish. For instance, in Example 6, ChatGPT creates the noun “Barnakiel” which appears to be a calque of the original word, while in Example 5 Gemini applies the ungrammatical form “winna nie”.

#### 4.2. Polysemy

The analysed corpus contains five examples of verbal humour that exploit the mechanism of polysemy, presented in Table 2.

**Table 2.**  
*Examples of verbal humour based on polysemy*

| N  | original  | Google Translate   | DeepL   | ChatGPT 5   | Gemini 2.5 Flash  | professional translation  |
|----|---|--|---|---|---|---|
| 10 | – I could give you some cool guy tips.<br>– I don't think I need advice on how to be cool, but yeah, go ahead. Lay them on me.  | – Mogłabym ci dać kilka fajnych męskich rad.<br>– Nie sądzę, żebym potrzebowała rad, jak być cool, ale tak, śmiało. Daj mi je.   | – Mogę dać ci kilka wskazówek, jak być fajnym facetem.<br>– Nie sądzę, żebym potrzebował porad, jak być fajnym, ale tak, śmiało. Podziel się nimi.  | – Mogę ci dać parę rad, jak być cool.<br>– Nie sądzę, żebym potrzebował lekcji z bycia cool... ale dawaj, słucham, guru fryzury.  | – Mogę ci dać parę wskazówek, jak być gościem.<br>– Nie sądzę, żebym potrzebował porad, jak być cool, ale dobra, dawaj. Syp, co tam masz.   | – Chcesz męskie pasemka?<br>– Nie powinienem czytać świerszczyków przed ślubem, ale dawaj.  |
| 11 | – You're a charming devil.<br>– I'm also a horny devil.   | – Jesteś czarującym diabłem.<br>– Jestem też napalonym diabłem.  | – Jesteś czarującym diabłem.<br>– Jestem też napalonym diabłem.   | – Jesteś uroczy jak diabełek.<br>– A ja jeszcze podniecony jak diabli!  | – Uroczy z ciebie diabeł.<br>– A do tego napalony diabeł.   | – Uroczy z ciebie diabeł.<br>– I coś mi sterczy.  |
| 12 | The partners have made it very clear that this project is make or break for us so lately he's been a little testy. You know what I mean – crotchety. I'm just saying it's been hard on him. (...) This building is huge for the firm so it's really important we don't blow it. | Wspólnicy jasno dali nam do zrozumienia, że ten projekt jest dla nas kluczowy, więc ostatnio jest trochę drażliwy. Wiedzie, o co mi chodzi – marudny. Mówię tylko, że było mu ciężko. (...) Ten budynek jest ogromny dla firmy, więc bardzo ważne jest, żebyśmy go nie spieprzyli. | Partnerzy jasno dali do zrozumienia, że ten projekt jest dla nas sprawą życia lub śmierci, więc ostatnio jest trochę poirytowany. Wiesz, o co mi chodzi – jest zrzędlawy. Mówię tylko, że jest mu ciężko. (...) Ten budynek jest ogromny dla firmy, więc naprawdę ważne jest, żebyśmy tego nie zepsuli. | Partnerzy jasno dali do zrozumienia, że ten projekt to dla nas sprawa życia i śmierci, więc ostatnio jest trochę nerwowy. Wiesz, o co mi chodzi – zrzędlawy. Mówię tylko, że trochę mu to ciąży... (...) Ten budynek jest ogromny dla firmy, więc naprawdę ważne, żebyśmy tego nie spartaczyli. | Partnerzy jasno dali do zrozumienia, że ten projekt to dla nas być albo nie być, więc ostatnio jest trochę jajcarski. Wiesz, co mam na myśli – taki drażliwy w kroku. Po prostu mówię, że mu staje na drodze. Ten budynek to dla firmy kolos, więc naprawdę ważne jest, żebyśmy tego nie zwalili! | Ten projekt to nasze być albo nie być, więc ostatnio trochę się stawia. No wiecie, unosi się, Mówię tylko, że ma parcie. (...) Nie możemy położyć na tym projekcie łaski. |

Cont. table 2.

|    |   |   |   |  |  |  |
|----|---|---|---|--|--|--|
| 13 | Still, I've had a pretty serious week. I could sure stand to do something stupid. –I'm something stupid, do me. | Mimo to, miałem całkiem poważny tydzień. Z pewnością mógłbym zrobić coś głupiego. – Jestem czymś głupim, zrób to.         | Mimo wszystko miałem dość ciężki tydzień. Chętnie zrobiłbym coś głupiego. – Jestem czymś głupim, zrób mnie.     | Miałem naprawdę ciężki tydzień. Przydałoby mi się zrobić coś głupiego. – Jestem czymś głupim. Zrób mnie. | A: Mimo to miałem dość poważny tydzień. Przydałoby mi się zrobić coś głupiego.<br>B: Jestem czymś głupim, zrób mnie. | Ale miałam ciężki tydzień. Czas na coś głupiego. –Ja jestem głupi, bierz.              |
| 14 | That "Bless this mess" pillow you made for Ted – what a stitch. Stitch– did that just happen?                   | Ta poduszka z napisem „Błogosław ten bałagan”, którą zrobiłaś dla Teda – co za ściema. Ściema – czy to się właśnie stało? | Ta poduszka „Błogosław ten bałagan”, którą zrobiłeś dla Teda – co za szew. Szew – czy to się właśnie wydarzyło? | Ta poduszka „Błogosław ten bałagan”, którą zrobiłaś dla Teda – ale szew! Szew... właśnie się to stało?   | A: Ta poduszka "Błogosław ten bałagan", którą zrobiłeś dla Teda – cóż za szyk! Szyć... Czy to się właśnie stało?     | Pani makatka – „Panie błogosław w bałaganie” na klasę. Ma katka, a co to jest „katek”? |

The professional translation manages to convey the wordplays by resorting to various humour mechanisms, not necessarily polysemy. Example 10 shows how the original wordplay, based on the polysemy of the noun “tip”, is translated into Polish by means of the near-homonymy of the words “pisemka” and “pasemka”. The translation does not apply the most obvious, literal equivalents of the original nouns, but rather concentrates on recreating the wordplay. In the storyline, the character falls into a trap and accidentally agrees to a bad hairstyle, having misunderstood the hairdresser’s proposal. The translation manages to convey the humorous effect. Example 11 is translated by means of the verb “sterczeć” (“to protrude”), which conveys the literal sense (the reference to the character’s devil costume and the horns that the character is wearing) and maintains the sexual innuendo present in the source text. Unlike the original fragment, the translation solution is based on one meaning of the verb rather than on polysemy. Example 12 achieves a humorous effect, combining a neutral description of a building and a sexual innuendo. In the source text, this effect is achieved through the polysemous words “hard” and “blow”, preceded by the adjectives “testy” and “crotchety”, and their respective near-homonyms “testicles” and “crotch”. The professional translation maintains the wordplay and double meaning by resorting to the polysemy of the verbs “stawiać się” and “unosić się”. Their common literal meaning is “to get up”; however, metaphorically they can also mean “to get up to someone” and “to get indignant”, respectively. The same fragment also contains the verb “przeć” (“to push”) which is not polysemous itself but opens space for double interpretation. The last element of this fragment is the colloquial and vulgar idiomatic expression “położyć na czymś laskę” (“to ignore”), which also manages to evoke the intended associations, given the colloquial meaning of the noun “laska” (“oral sex”). In turn, Example 13 shows how the professional translator omits the polysemous verb “to do”, while still maintaining the essence of the joke (“you need something stupid, I am stupid, take me”). Finally, Example 14 provides a solution based on an absurd neologism “katek” that

originates from the homophony of the nouns “makatka” (“tapestry”) and “ma katka” (“has got a *katek*”).

As far as NMT-based translation is concerned, wordplays based on polysemy are not effectively conveyed in any of the analysed translations. The translations focus on the explicit meanings, which might lead to a misunderstanding of the storyline, e.g., in Example 10. The lack of translation of the wordplay would affect the understanding of the events that follow the cited fragment. A similar observation applies to Examples 11, 12, and 14; although, a viewer would realize that the original dialogue contained a joke since all of the cited fragments are followed by recorded laughter. Example 13 contains a direct calque from English, “zrób mnie”, which does not sound natural in Polish.

Regarding LLM-based translation, there is considerable variation in the degree to which verbal humour is represented. Examples 11 and 13 are translated literally, concentrating solely on the explicit meaning of the original. Example 13 contains the same unnatural calque from English, discussed in the NMT-based translation. When it comes to Examples 12 and 14, there is a difference between ChatGPT and Gemini: the former appears to focus more on the explicit meaning, while the latter seeks to convey the wordplay, opting for words that are not obvious equivalents of the original ones. In fragment 12, these elements are: “jajcarski”, “stawać”, and “zwalić”. The Gemini translation conveys the double meaning effect; however, the use of the adjective “jajcarski” (“goofy”) raises concerns since it might interfere with the understanding of the storyline, as the character is speaking about his boss being in a bad mood. Example 14 is based on the resemblance between the noun “szyk” and the verb “szyć”. As for Example 10, neither of the LLM systems conveys the wordplay; however, both seem to recognise the language style and convey the colloquial tone of the original.

### 4.3. Changing of words boundaries

Table 3 presents an example of the humour mechanism based on changing word boundaries, identified in the analysed corpus.

**Table 3.***Examples of verbal humour based on changing of words boundaries*

| N  | original   | Google Translate  | DeepL  | ChatGPT 5  | Gemini 2.5 Flash   | professional translation   |
|----|--|---|--|--|--|--|
| 15 | – Hey, guys, guess what I got. A new dart<br>– Oh, wow, a new dart.<br>– Hey, that new dart is great.<br>– I didn't know you were such a fan of new dart, Barney.<br>– Oh, yes, Robin, I just love a new dart. Nude art. | – Hej, zgadnijcie, co mam. Nową lotkę<br>– O, wow, nową lotkę.<br>– Hej, ta nowa lotka jest świetna.<br>– Nie wiedziałam, że jesteś takim fanem nowego darta, Barney.<br>– Och, tak, Robin, po prostu uwielbiam nowego darta. Nagie sztuki. | – Hej, ludzie, zgadnijcie, co mam. Nową strzałkę.<br>– O, super, nową strzałkę.<br>– Hej, ta nowa strzałka jest świetna.<br>– Nie wiedziałem, że jesteś takim fanem nowych strzałek, Barney.<br>– O tak, Robin, po prostu uwielbiam nowe strzałki. Sztuka nagości. | – Ej, zgadnijcie, co mam. Nową strzałkę.<br>– O, wow, nową strzałkę.<br>– Ta nowa strzałka jest świetna.<br>– Nie wiedziałem, że jesteś takim fanem nowej strzałki, Barney.<br>– O tak, Robin, po prostu uwielbiam nową strzałkę... nago sztukę. | – (trzymając rzutkę): Hej, zgadnijcie co mam. Akt!<br>– Nowy akt? Świetnie!<br>– Ej, ten nowy akt jest super.<br>– Ej, ten nowy akt jest super.<br>C: Nie wiedziałem, że tak lubisz akt, Barney.<br>– O, tak, Robin, po prostu kocham nowy... Akt nagości! | – A wiecie co ja mam? Goły grot.<br>– Ojej!<br>– Jest świetny!<br>– Jesteś fanem gołych grotów?<br>– O tak, uwielbiam nagę broń. |

The characters want to suggest to their friend that they have found his nude painting. The joke is based on the phonetic similarity between the phrase “new dart” /nju: da:t/ and “nude art” /nju:d a:t/. One of the characters is holding an actual dart for emphasis, which complicates the translation task. The professional translator solves the problem by using the adjective “goły” (“bare”) in the phrase “goły grot” (“bare arrow tip”), which preserves the intended allusion to nudity. The translation also introduces an element of alliteration as both words begin with the same sound /g/. In contrast, NMT-based tools and ChatGPT focus on the explicit meaning and do not convey the wordplay at all. The translation proposed by Gemini introduces the noun “akt” (“nude” as well as “act”) which could provide a good solution if the character were holding an act rather than a dart. However, audiovisual translation is constrained by the visual dimension, which renders the proposed translation inadequate.

#### 4.4. Changing of the voice quality

Five examples of humour based on changing of the voice quality have been identified in the corpus (see Table 4).

**Table 4.***Examples of verbal humour based on changing of voice quality*

| N  | original  | Google Translate  | DeepL   | ChatGPT 5  | Gemini 2.5 Flash  | professional translation   |
|----|---|---|---|--|---|--|
| 16 | What be a pirate's favourite kind of sweater?   | Jaki jest ulubiony rodzaj swetra pirata?  | Jaki jest ulubiony rodzaj swetra piratów?   | Q: Jaki sweter najbardziej lubi pirat?   | A: Jaki jest ulubiony sweter pirata?  | Ulubione warzywo pirata?   |
|    | –Arrr–gyle.   | Arrr–gyle.  | –Arrr–gyle.   | A: Arrr–rykiel.  | B: Arr–anowy.   | – Pirat–ruszka.  |
| 17 | And what be a pirate's favourite fast-food restaurant?  | A jaki jest ulubiony fast-food pirata?  | A jaka jest ulubiona restauracja fast food piratów?   | Q: A którą sieć fast foodów uwielbia pirat?  | A: A jaka jest ulubiona restauracja fast food pirata?   | A ulubiony piracki samochodzik?  |
|    | – Arr...by's.   | Arr...by's.   | Arr...by's.   | A: Arrr–by's.  | B: Arr–KFC.   | – Opel korsarz.  |
| 18 | I'm staaaarrving.   | Staaaardrrrwuj ę.   | Umieram z głodu.  | Jestem straaaarrdny.   | A: Umierrram z głodu.   | Umierrram z głodu.   |
| 19 | This is gonna be a slaughter. None of these other costumes even come close to arrrrs.                     | To będzie masakra. Żaden z tych kostiumów nawet nie zbliża się do arrrrs.   | To będzie rzeź. Żaden z tych kostiumów nawet nie zbliża się do arrrrs.  | To będzie rzeź. Żadne inne kostiumy nie dorównują moim arrrom.   | A: To będzie rzeź. Żaden z tych kostiumów nawet nie dorasta do arr-szych (naszych).                                 | To będzie bomba. Żaden kostium się nie umywa do naszego.               |
| 20 | –Ted, you keep going to the same bar. You're in a rut. And I am a rut buster. I'm going to bust your rut. | – Ted, ciągle chodzisz do tego samego baru. Jesteś w rutynie. A ja jestem pogromcą rutyny. Zamierzam wyrwać cię z rutyny. | – Ted, ciągle chodzisz do tego samego baru. Utknąłeś w rutynie. A ja jestem łamaczem rutyny. Złamię twoją rutynę. | A: Ted, ciągle chodzisz do tego samego baru. Jesteś w rutynie. A ja jestem pogromcą rutyn. Zaraz ci tę rutynę rozwalę. | A: Ted, ciągle chodzisz do tego samego baru. Wpadłeś w koleinę. A ja jestem pogromcą kolein. Rozwalę twoją koleinę. | –Ted, łącząc do tego samego baru popadłeś w rutynę. I wyżrę ci rutynę. |
|    | –It's not a rut, it's routine and I like it.  | – To nie rutyna, to rutyna i to mi się podoba.  | – To nie jest rutyna, to codzienność i lubię ją.  | B: To nie rutyna, to po prostu zwyczaj i mi pasuje.  | B: To nie koleina, to rutyna i ja to lubię.   | –Nie musisz, lubię rutynę.   |
|    | –Ted, what's the first syllable in routine?   | – Ted, jaka jest pierwsza sylaba w słowie „rutyna”?   | –Ted, jaka jest pierwsza sylaba w słowie „routine”?   | A: Ted, jaka jest pierwsza sylaba w „rutyna”?  | A: Ted, jaka jest pierwsza sylaba w słowie rutyna?  | –Ted, rutyna jest gorsza niż rycyna.                                   |

Examples 16-19 make reference to a pirate costume that the speaker is wearing. The speaker makes up riddles whose answers contain the sound /r/. The speaker pronounces the answers in the manner stereotypically associated with pirates. The translation should convey the allusion to pirates in each of the answers. The professional translation achieves this goal by modifying the riddles. What is more, the allusions to pirates are not limited to the phonetic level (as in Example 18), but are also extended to the lexical level. Instead of the original “Arrgyle”, the translation opts for a neologism “piratruszka”, based on the lexemes “pirate” (“pirate”) and “pietruszka” (“parsley”) (Example 16). Example 17 likewise modifies the riddle, instead of the

pirate's favourite restaurant, the translation asks about the pirate's favourite car. The answer to the riddle is based on near-homophony between the car name "Opel Corsa" and the noun "korsarz" ("sea rover"). Example 19 is the only one that does not convey the pirate reference.

As for AI-based translation, none of the tools successfully translates the riddles and allusions to pirates in Examples 16 and 17. The wordplay is lost in all four analysed machine translations. The reference to pirates is maintained in Example 18 in Gemini's translation; in contrast, Google Translate and ChatGPT do not seem to have recognised the meaning of the atypical original spelling and produce ungrammatical equivalents. In turn, DeepL neutralises the pirate reference in this example. It is worth mentioning that information about the context was included in the prompt. Gemini does recognise the intended meaning in Example 19, although its translation does not convey the joke and would require further correction.

In Example 20, a character is making a point by deliberately modifying the pronunciation of the word "routine" and pronouncing it as /rʌti:n/. None of the AI-based tools manages to find a solution to this translation challenge as all of them translate the fragment in which the character makes the point literally. The professional translator instead opts for a simple rhyme of two nouns, "rutyna" ("routine") and "rycyna" ("ricin"), in a slogan-like response "rutyna jest gorsza niż rycyna" ("routine is worse than ricin").

#### 4.5. Modification of idioms and lexemes

Language users might modify the form of lexemes and idioms intentionally, as a playful, rhetoric resource (Example 21), or they might do it unintentionally, e.g., in mispronouncing or misspelling (Example 22). Examples of modification of idioms and lexemes are detailed in Table 5.

**Table 5.**

*Examples of verbal humour based on modification of idioms and lexemes*

| N  | original   | Google Translate   | DeepL  | ChatGPT 5   | Gemini 2.5 Flash  | professional translation  |
|----|--|--|--|---|---|---|
| 21 | – How fancy are we talking about here? – You'll wanna bring you're A game. (...) – Well, did I bring it... or did I bring it? I think I brought it. (...) Look who else brought it. –Oh, yeah, I thought about leaving it at home, but I figured I don't want to get there and realize I need it and have to go all the way back | – O jakiej elegancji tu mówimy? – Będziesz chciał przynieść swoją grę A. – (...) No więc, czy ja to przyniosłem... czy ja to przyniosłem? Chyba przyniosłem. (...) Zobacz, kto jeszcze to przyniósł. – Och, tak, myślałem, żeby zostawić to w domu, ale pomyślałem, że nie chcę tam dotrzeć i zdać | – O jakim poziomie fantazji tutaj mówimy? – Będziesz chciał dać z siebie wszystko. (...) No cóż, dałem z siebie wszystko... czy dałem z siebie wszystko? Myślę, że dałem z siebie wszystko. (...) Zobacz, kto jeszcze dał z siebie wszystko. –O tak, myślałem o zostawieniu tego w domu, ale | – Jak elegancko mówimy? B: Trzeba przynieść swoją najwyższą formę. (...) No dobrze, czy ją przyniosłem... czy przyniosłem? Chyba przyniosłem. (...) Spójrzcie, kto jeszcze ją przyniósł. C: Och, tak, myślałem, żeby zostawić ją w domu, ale pomyślałem, że nie chcę dotrzeć i zdać sobie | – Jak bardzo elegancko się ubieramy? B: Będziesz chciał pokazać klasę (lub przywalić). B: No i przywaliłem... czy przywaliłem? Myślę, że przywaliłem. C: Patrzcie, kto jeszcze to przyniósł. B: Och, tak, myślałem, żeby to zostawić w domu, ale stwierdziłem, że nie chcę tam być, zorientować | – Będzie bardzo A–E? – Zrób się na bóstwo. (...) – Czy mi się udało? Chyba mi się udało. (...) Ktoś się odstawił. Chciałem się odstawić do domu, ale mógłbym coś zostawić, więc wolałem się odstawić i dostawić |

|    |   |  |  |  |   |  |
|----|---|--|--|--|---|--|
|    | to get it so, yeah, I brought it.   | sobie sprawy, że tego potrzebuję i muszę po to wracać, więc tak, przyniosłem to.                               | pomyślałem, że nie chcę tam dotrzeć i zdać sobie sprawy, że tego potrzebuję, a potem wracać po to, więc tak, przyniosłem to. | sprawy, że jej potrzebuję i musiałbym wracać po nią, więc tak, przyniosłem ją.                           | się, że tego potrzebuję i wracać po to aż tu, więc tak, przyniosłem to.                                       |  |
| 22 | Lily, when dr Aurelia Birnholtz... – No, when dr Australia Birdbath– Vaseline came home from the gorillas ... | Lily, kiedy dr Aurelia Birnholtz... – Nie, kiedy dr Australia Birdbath– Vaseline wróciła do domu od goryli ... | Lily, kiedy dr Aurelia Birnholtz... – Nie, kiedy dr Australia Birdbath– Vaseline wróciła do domu z gorylami ...              | Lily, kiedy dr Aurelia Birnholtz... – Nie, kiedy dr Australia Kąpiel–Ptak– Wazelina wróciła od goryli... | Lily, kiedy dr Aurelia Birnholtz...B: Nie, kiedy dr Australia Wanna–Kąpiel– w–Wazelinie wróciła od goryli ... | Lily, kiedy dr Aurelia... –Nie, kiedy doktor Australia Bucefał–Ważka wróciła do cywilizacji... |

Humour in Example 21 is built on a wordplay involving the idiom “to bring sb’s A game”. The speaker uses the expression with reference to dressing up for a party and speaks about the preparations as if they were a physical object that one could actually bring. The professional translation finds a way out of the translation problem by using the verbs: “odstawić”, which has several unrelated meanings, e.g., “to dress up” and “to put back”, zostawić (“to leave”), and “dostawić” (“to move closer”). The three verbs share a common morphological root and differ in the prefixes, which enables a near-homonymy wordplay. Unlike the human translation, all four machine translation tools translate the fragment literally. DeepL and both LLM-based systems recognise the English idiom and translate using its metaphorical sense in the introductory part, whereas Google Translate uses a literal translation. However, none of them reproduces the mechanism of humour based on the modification of the idiom.

The modification in Example 22 is based on the similarity between the name of the referred person and the name of a continent (“Australia”), followed by semantically unrelated common nouns. The professional translation renders the name using common nouns in Polish that start with the same letter as the actual name of the person in order to maintain the effect of mispronunciation. The NMT tools do not recognise the wordplay and translate as if it were a genuine proper name. The LLM tools, however, do recognise it, as they use Polish common nouns. Nevertheless, the equivalents that they propose start with a different letter than the actual name of the referred person, which makes the mispronunciation effect less accurate.

#### 4.6. Blending of contrasting elements

Table 6 lists examples of verbal humour based on blending of contrasting elements. They represent two types of such blending. The first combines linguistic forms typical of different language styles, whereas the second modifies a fixed, colloquial expression by integrating two conceptually unrelated domains: romance and vulgarism.

**Table 6.***Examples of verbal humour based on blending of contrasting elements*

| N  | original   | Google Translate   | DeepL   | ChatGPT 5   | Gemini 2.5 Flash   | professional translation                   |
|----|--|--|---|---|--|--|
| 23 | Dude, your narrow-minded views on professional fornicators are harshing my mellow. | Kolesiu, twoje ograniczone poglądy na zawodowych cudzołożników psują mi humor. | Stary, twoje ograniczone poglądy na temat profesjonalnych cudzołożników psują mi nastrój. | Stary, twoje ograniczone poglądy na temat zawodowych kochanków psują mi vibe. | Stary, twoje ograniczone poglądy na zawodowe uprawianie nierządu psują mi luz. | Twoje ciasne poglądy ranią mnie do żywego. |
| 24 | Kiss the crap out of that girl   | Wycałuj tę dziewczynę na śmierć.   | Pocałuj tę dziewczynę na śmierć.  | Pocałuj tę dziewczynę na maksa.   | Całuj ją, kurde, na zabój!   | Wycałuj ją aż się sfajda                   |

Example 23 mixes a slang expression “to harsh one’s mellow” with a more formal expression “narrow-minded views”, and an archaic term “fornicator”, used typically in biblical or moralistic contexts. The combination produces a humorous effect. The professional translation conveys the formal tone; however, it neutralizes the slang expression. All of the analysed AI tools convey the tone of the original and express the contrast between formality and informality.

As far as Example 24 is concerned, the professional translation uses the literal meaning of the original colloquial idiom, blending the domains of romance and excrement, which produces a humorous effect and creates an element of contrast. Both NMT translations recognise the idiom and translate the fragment using a hyperbolic expression “na śmierć” (“to death”), meaning “kiss to death”. Gemini uses the same idea. All three translations work as a humorous exaggeration in the context.

#### 4.7. Rhyme

Three examples of humour based on absurd rhyming have been identified (see Table 7).

**Table 7.***Examples of verbal humour based on rhyme*

| N  | original   | Google Translate                                   | DeepL   | ChatGPT 5  | Gemini 2.5 Flash  | professional translation                                       |
|----|--|--|---|--|---|--|
| 25 | My name is Rufus and that’s the truthus            | Mam na imię Rufus i to jest prawda.                | Nazywam się Rufus i taka jest prawda.                   | Mam na imię Rufus i mówię prawdus.                   | Nazywam się Kubuś i to jest Prawduś                     | Rufus mam na imię, jak lżę niech zginę.                        |
| 26 | I’m vomit free since 93. That’s funny. I’m funny.  | Nie wymiotuję od 93. To zabawne. Jestem zabawny.   | Od 1993 roku nie wymiotuję. To zabawne. Jestem zabawny. | Nie wymiotowałem od ’93. To zabawne. Jestem zabawny. | A: Nie rzygam od 93. To jest śmieszne. Jestem śmieszny. | Od lat tuzina nie puszczałem pingwina. Niezłe. Ale mam dowcip. |
| 27 | Hey, ain’t no thing byt a chicken wing, Mama Sita. | Hej, nie ma to jak skrzydełko kurczaka, Mama Sita. | Hej, to nic takiego, Mama Sita.                         | Ej, luzik, tylko skrzydełko, Mamo Sita.              | Luzik–arbużik, Siostro!                                 | Nie ma sprawy, nie zepsułaś zabawy                             |

The professional translation conveys the humour mechanism in all three examples, creating absurd rhymes. The NMT translations concentrate on the literal meaning and omit the original rhymes, while LLM tools convey the rhymes partially. ChatGPT uses a rhyming translation only in Example 25 and Gemini in Examples 25 and 27.

#### 4.8. Punning acronym

Table 8 details an example of humour based on a punning acronym. The mechanism of humour in Example 28 is rooted in the contrast between a supposedly serious award that one of the characters has won and its acronym, which resembles the name of an animal (“lama”).

**Table 8.**

*Examples of verbal humour based on a punning acronym*

| N  | original  | Google Translate  | DeepL  | ChatGPT 5   | Gemini 2.5 Flash   | professional translation  |
|----|---|---|--|---|--|---|
| 28 | –Hey, something kind of cool just happened. My story on Pickles, the singing dog just got nominated for Local Area Media Award. | Hej, właśnie wydarzyło się coś fajnego. Mój artykuł o Picklesie, śpiewającym psie, został nominowany do nagrody Local Area Media Award. | – Hej, właśnie wydarzyło się coś fajnego. Moja historia o śpiewającym psie Picklesie została właśnie nominowana do nagrody Local Area Media Award. | A: Ej, coś fajnego się właśnie wydarzyło. Mój artykuł o Picklesie, śpiewającym psie, został nominowany do Nagrody Lokalnych Mediów. | A: Hej, stało się coś fajnego! Mój reportaż o Pickles, śpiewającym psie, został nominowany do Lokalnej Nagrody Mediów Artystycznych. | –Mam świetną nowinę. Mój reportaż o psie Korniszonie dostał nominację do nagrody Lokalnej Akademii Mediów Audio-wizualnych. |
|    | – A LAMA?   | LAMA?   | LAMA?  | B: NLM? A lama?!  | L.A.M.A.?  | –LAMA?  |

The professional translation renders the name of the award in Polish so that the initials form the animal name. NMT tools maintain the original name of the award; however, in this case the initials still form the intended pun. ChatGPT and Gemini translate the name to Polish without recognising the punning mechanism.

#### 4.9. Portmanteau words and other neologisms

Portmanteau words and neologisms combine different concepts in one form and create an element of surprise and novelty, which produces a humorous effect. Table 9 lists examples of this mechanism.

**Table 9.***Examples of verbal humour based on portmanteau words and neologisms*

| N  | original   | google Translate  | DeepL  | ChatGPT 5   | gemini  | Professional translation  |
|----|--|---|--|---|---|---|
| 29 | –Are you going to play hockey? With a basketball?  | – Zamierzasz grać w hokeja? Piłką do koszykówki?  | – Zamierzasz grać w hokeja? Piłką do koszykówki?   | A: Zamierzasz grać w hokeja? Z piłką do koszykówki?   | A: Będziesz grał w hokeja? Z piłką do kosza?  | –Hokej? Piłką do kosza?   |
|    | –Well, it’s a combination on the two. We call it baskiceball.  | – No cóż, to połączenie tych dwóch. Nazywamy to baskiceball.  | – Cóż, to połączenie tych dwóch dyscyplin. Nazywamy to baskiceballem.  | B: To połączenie obu sportów. Nazywamy to koszhokej.  | B: Cóż, to połączenie tych dwóch. Nazywamy to Kosho–kej.  | –To połączenie obydwu gier. Lodokoszka.   |
|    | –Baskiceball? Not Iceketball?  | Baskiceball? nie Iceketball?  | – Baskiceballem? A nie iceketballem?   | A: Koszhokej? A nie hokeikosz?  | A: Kosho–kej? A nie Hoko–sz?  | –Lodokoszka? Nie lepiej lodokówka?  |
|    | –Iceketball? Just sounds weird.  | – Iceketball? po prostu brzmi dziwnie.  | Iceketball? Brzmi dziwnie.   | B: Hokeikosz? Brzmi po prostu dziwnie.  | B: Hoko–sz? To brzmi po prostu dziwnie.   | –Lodo...kówka? Jakoś nie brzmi.   |
| 30 | The thanks–tini. A fun and delicious new novelty drink I invented. (...) If you wanna good holiday drink, try his Kwanza–politian. | Dzięki–tini. Fajny i pyszny nowy, nowatorski drink, który wynalazłem. (...) Jeśli chcesz dobrego świątecznego drinka, spróbuj jego Kwanza–politian. | Thanks–tini. Zabawny i pyszny nowy drink, który wymyśliłem. (...) Jeśli chcesz dobrego drinka na święta, spróbuj jego Kwanza–politian. | Thanks–tini. Świetny, zabawny i pyszny nowy drink, który wymyśliłem. (...) A jeśli chcesz świąteczny napój, spróbuj jego Kwanza–politian. | A: Andrzej–tini. Zabawny i pyszny nowy, wymyślony przeze mnie, drink z dowcipem. B: Jeśli chcesz dobrego drinka na święta, spróbuj jego Wigilio–politana. | Dziękczy–tini. Pyszny nowy drink mojego autorstwa. (...) Nie próbowałaś jego Gwiazdko–politana. |

The professional translation creates analogous portmanteau words in Polish and successfully conveys the original meaning. As far as the NMT tools are concerned, in the majority of cases, the original English words have been maintained (“baskiceball”, iceketball, Kwanzapolitan”, Thankstini”). While DeepL uses Polish inflectional morphemes in the English words, Google maintains the nominative form. The word “Dziękitini” is the only case of translation of a portmanteau word into Polish in the analysed NMT translation. The LLM-based translation creates corresponding portmanteau words in Example 29. However, the spelling of the proposed neologisms is not fully adapted to the rules of the Polish language, e.g., “Koshokej” proposed by Gemini or “hokeikosz” proposed by ChatGPT. As a final remark, Gemini adapts the names in Example 30 to the Polish culture, since its translation uses equivalents of holidays rooted in the Polish tradition, instead of the original ones, while ChatGPT applies the original English lexemes.

## 5. Conclusions and discussion

The analysis has demonstrated that LLM-based tools (ChatGPT and Gemini) are able to recognise verbal humour mechanisms based on lexical ambiguity, such as homonymy, polysemy, and homophony. Both tools analyse the provided fragments with precision and propose various versions of explanatory translations. However, when prompted to choose one version, they are unable to provide translations that employ verbal humour mechanisms and achieve an analogous humorous effect based on lexical ambiguity in Polish.

The professional translator achieves the desired humorous effect, resorting to various verbal humour mechanisms, not necessarily identical to those used in the source text. Rather than applying the most obvious, literal equivalents of the original lexical items, the professional translation prioritises the humorous effect. Translations provided by AI-driven tools, on the other hand, tend to focus on the explicit meaning of the original fragments. Specifically, the two NMT-based tools (Google Translate and DeepL) and ChatGPT do not convey the double-meaning effect in any of the translations provided. Gemini's translation demonstrates an effort to capture the ambiguity in some cases; however, its translation tends to be flawed by calques from English, errors, or solutions that do not fit the context, which affects the communicative effect. The system does not seem to be able to deal with the complexity of the task of humour rendering, e.g., when additional constraints imposed by the visual dimension of the source text should be included in the translation.

All four tools recognise idioms and apply their Polish functional equivalents; however, they do not succeed in recreating lexical ambiguity through the modification of fixed phrases in order to achieve a comparable humorous effect. Moreover, the analysed NMT tools tend to keep names and less typical linguistic elements (such as neologisms and portmanteau words or childlike expressions, such as “doo-doo”) in English, which affects the communicative effect. LLMs more frequently attempt to create analogous portmanteau words in Polish and translate the atypical names, in order to convey the humorous effect; however, at times, they also employ original words (e.g., “Kwanzapolitan”, “Thankstini”, and “dudu”). What is more, the spelling of the proposed neologisms is not always adapted to the rules of the Polish language (e.g., “Koshokej” proposed by Gemini or “hokeikosz” proposed by ChatGPT). While NMT tools do not recreate rhymes, LLM tools reproduce them partially (ChatGPT creates a rhyme in one out of the three analysed examples, while Gemini recreates them in two examples). On the other hand, all of the analysed AI translation tools capture the style of the original and convey the formal and colloquial tone, which is why they seem to be able to convey humour based on blending of contrastive elements, although both LLM tools use atypical forms in Polish at times. Furthermore, they convey humour based on exaggeration. The hypothesis that models based on LLMs would produce more accurate translation in comparison with the tools based solely on NMT has not been confirmed.

All things considered, AI translation tools are currently incapable of translating verbal humour successfully without human intervention. While tools such as those based on LLMs might provide support to professional translators in analysing the source text, recognising cultural references, and identifying humour mechanisms, they cannot currently replace human professional translators as far as the task of effective humour translation is concerned. These findings are consistent with studies pointing to hybrid techniques, which combine human expertise with AI support, as the likely prevailing model in the future (e.g., Amini et al., 2014), rather than suggesting that translation will become an obsolete profession. The findings respond to the growing concern regarding the future of translation, described in Schilling (2018) Łukasik (2024), or Gutiérrez Rubio (2024).

The knowledge of new technologies in translation is essential for professional translators' career success. It might enhance their productivity and make their services more competitive, and crucially, it allows them to demonstrate their professional value by knowing where MT falls short. The analysis presented in the paper indicates that, at present, a successful translation of verbal humour remains a limitation for MT. These results are in line with the view of some scholars (e.g., Kirov, Malamin, 2022; Tavares et al., 2023) that creative texts are the least likely to be translated successfully by AI-powered tools. The conclusion is limited to English–Polish translation and further studies in different language pairs are encouraged.

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