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English Language Students' Frequency, Perception and Purpose of Use of MT and CAT Tools

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Abstract

Machine and computer-assisted translation tools have become widely accessible and user-friendly in the modern digital age. English language learners, in particular, stand to gain significantly from utilizing machine translation (MT) or computer-assisted translation (CAT) tools such as Google Translate or Trados. This paper seeks to investigate the frequency of use of these tools by the English language students at the University of Zenica, Bosnia and Herzegovina, outside the classroom, the specific tools utilized, the purposes of their application, and the students' perceptions of these tools, with a focus on features such as translation quality and usability. To gather data, a survey was used consisting of both open-ended and closed-ended questions. The findings indicate a lower frequency of MT and CAT tools usage and reveal notable differences in the students' perception of the features of MT and CAT tools analyzed. The insights derived from this research may contribute to understanding how these tools can be better incorporated into English language instruction and translation studies.

Keywords: machine translation, computer-assisted translation, English language

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1. Introduction

Translation, historically one of the central components of the Grammar Translation Method (Bureković et al., 2023), is broadly defined as the process of transferring text from a source language to a target language (Poibeau, 2017). Over time, rapid technological advancements and increasing demands for global connectivity have driven the development of machine translation (MT) and computer-assisted translation (CAT) tools. These tools aim to provide faster and more accurate translation solutions, reflecting significant shifts in the conceptualization of translation itself. Modern CAT tools, in particular, embody the understanding of translation as "a complex process involving high-level cognitive and linguistic capabilities" (Poibeau, 2017). Their sophistication allows them to address complex linguistic challenges such as "false friends" (Rizvić-Eminović et al., 2020), collocations (Rizvić-Eminović et al., 2015; Rizvić-Eminović et al., 2024), phrasal verbs (Bureković et al., 2024), derived nominals (Rizvić-Eminović, 2023), multiple negatives (Bureković, 2013; Bureković, 2023) and subjunctives (Brdarević et al., 2018).

In the context of globalization and technological developments, the English language stands at the forefront as the preferred language option. Consequently, the use of MT and CAT tools for translation to and from English is often the focus of various research studies. The scope of such studies has been the overview of the tools themselves (Han, 2020; Rivera-Triguero, 2022), as well as the attitudes and perceptions of their end users, be it translation students or professionals, specifically in the context of Chinese (Xu and Wang, 2011), Egyptian (Mahfouz, 2018) or Croatian (Borucinsky et al., 2022). However, similar studies involving Bosnian English language students are lacking.

This research paper aims to investigate the frequency, perception and purpose of use of MT and CAT tools among English language students at the University of Zenica in Bosnia and Herzegovina. These students study to become English language teachers and the use of digital tools in general in teaching is already incorporated in their classes. Thus, the paper explores how frequently these students use MT and CAT tools, such as Google Translate and Trados and for what purpose outside the classroom. Further, it aims to gain an insight into the students' usage patterns and their perceptions regarding the various features of translation tools, such as their quality of translation, ease of use and affordability. The study also examines the students' familiarity with the distinctions between different MT and CAT tools, which can aid in understanding how these tools can be better incorporated into English language instruction and translation study and practice.

The current students are digital natives, who welcome new technologies, platforms and apps (Prensky, 2012). Further, a study revealed that during the Covid-19 pandemic, students at the University of Zenica embraced a variety of language technologies (Bureković et al., 2020). Therefore, it was assumed that English language students at this university, whose proficiency levels range from B2 to C1, would demonstrate a high frequency of use of machine translation tools outside the classroom. The assumption was also made because in the course of their undergraduate studies, the students are tasked with translation of a variety of short texts. Since the students do not have an opportunity to master the use of MT or CAT tools at this level of

their studying, it was also assumed that they would not be substantially familiar with the tools and their features, despite numerous opportunities for informal online education and personal exploration. The results of the study have pedagogical implications. They might indicate how and to what extent MT and CAT tools should be introduced in the EFL teaching curricula at university level in Bosnia and Herzegovina.

2. Literature Review

The true origins of machine translation, in the form that we know it today, can be traced back to the 1950s and Warren Weaver's publication (1949) on the topic of computer application in the translation process (Craciunescu et al., 2007; Ulitkin, 2011). It is a result of lasting interdisciplinary research and cooperation of computer scientists and linguists (Rizvić-Eminović & Kasumagić-Kafedžić, 2024). In the 1950s, the United States showed great interest in this area with financial support for the various translation projects, most of which included the IBM company along with different universities (Hutchins, 2006). The very first machine translation programs appeared in the form of basically computerized bilingual dictionaries. Their work mechanism was quite simple as it relied on the "transformer" approach by which sentences of one language were directly, as the name itself suggests, transformed to the sentences in the target language (Ulitkin, 2011). Unfortunately, less than twenty years later, the entire process was halted due to the seeming ineffectiveness of machine translation (Hutchins, 1966). While the USA stopped its projects, the development continued elsewhere so, for example, a machine translation system called Systran came into use by the United States military and the European Union Commission and it was followed by a number of other machine translation systems across the world (Poibeau, 2017). On the other hand, computer-assisted translation tools came into use a short time later. In fact, some linguists (Wang, 2024) note that the very concept of computer-assisted translation (CAT) was first proposed by Yehoshua Bar-Hillel (1960), who had one of the leading roles in the development of machine translation as well (Poibeau, 2017). Others (Ulitkin, 2011) tie the CAT origins to Martin Kay, who published a memorandum in 1980 critiquing machine translation and proposing tools that would involve translators more directly. Kay (1980) was the first one to present the two windows approach in the translation process (Montalbán, 2019), and that approach remains in use even in most modern CAT translation tools.

2.1 Characteristics of MT and CAT tools

While both MT and CAT tools share certain characteristics, they are used differently for different purposes. MT strives towards direct, mechanical translation without human involvement. MT represents "a branch of computational linguistics that focuses on the use of e-devices to render a speech or text from an SL to a TL" (Jibreel, 2023: 1148). Therefore, this type of translation is, as Sofer (2006) defines it, a "translation performed by a computer software program as an alternative to human translation, performed by a human translator" (Sofer, 2006: 83). On the other hand, CAT tools serve as added help to assist the translators during the entire translation process. In other words, while the machine translation process is

not complete without the final editing and revising by translators, the computer-assisted translation entails the direct translator's involvement throughout every step of the translation.

While MT tools typically support a wide range of languages, their translation quality and collaboration options, among other features, may be lacking. In addition, in terms of the ethics of translation, data privacy and security, as well as the effects on the translators' job market are just some of the issues that need to be taken into consideration (Moorkens, 2022). However, despite their limitations, MT tools are valued for their speed and ability to handle vast amounts of text, making them useful for quick, large-scale translation projects.

On the other hand, in terms of their characteristics, CAT tools are designed to support and aid human translators by enhancing productivity and consistency in translation projects, which is achieved through one of their primary features, the translation memory databases (Han, 2020). CAT tools typically offer features such as terminology management and quality assurance tools that help in detecting errors and inconsistencies, as there are various types of errors that could potentially arise, such as changes in meaning or usage. Additionally, as CAT tools are designed to facilitate collaboration and because they depend on human input for translation, there is a better guarantee of more ethical use, data security, and confidentiality, along with a more positive impact on translators' work practices. As summarized by Wang (2024), while MT is cheaper and more readily available, easier to use, and faster, the CAT is more precise, offers more language, text formatting and collaboration options, as well as better quality assurance.

The examples of translation tools analysed in this research include Google Translate, Bing Translator, TranslateMe, Yandex.Translate, MateCat, Trados, memoQ, and MemSource. All the aforementioned MT tools are quite similar in the sense that they offer ease of access, simple use, multilingual interface, and good integration with other services. For example, Google Translate shows good integration with other Google services, Bing Translator easily works with different Microsoft services, and Yandex.Translate supports integration with various applications and websites. On the other hand, CAT tools differ more in terms of what they offer. For example, MateCat is an open-source CAT tool relying on a cloud-based translation memory system (Federico et al., 2014). SDL Trados, as probably one of the most commonly employed CAT tools, offers an enormous variety of options, but it is also not open source, so there is a considerable cost for its use.

3. Methodology

This research utilized an anonymous survey created to investigate the University of Zenica students' frequency, perspectives and purpose of use of MT and CAT tools outside their classrooms. It was distributed electronically via Google Forms. The survey consisted of ten questions, eight closed and two open-ended questions. A total of twenty-seven respondents participated, with an equal number of respondents among first (N=6), second (N=6), and fourth-year students (N=6), and a slightly higher representation of third-year students (N=9). The closed questions included options where respondents were able to select one or more answers, as well as options with a five-point Likert scale ranging from *very frequently, frequently, occasionally, rarely, never*, used to gauge the frequency of use, or from *very satisfied, satisfied nor dissatisfied, dissatisfied, very dissatisfied*, to assess the students' rating

of the features of the tools they used. Incorporating open-ended questions allowed for a deeper understanding of students' knowledge on the topic and, when combined with the analysis of other responses, aimed to identify patterns and gaps in awareness regarding the functionalities and benefits of various MT and CAT systems.

The questions included in the survey were as follows:

1. Do you know the difference between machine translation (MT and computer-assisted translation (CAT)?
2. How frequently do you use machine translation and/or computer assisted translation tools (tools such as websites - Google translate, Trados, etc.)?
3. Have you ever used: Google Translate, Trados, MateCat, Yandex Translate, Translate Me, Bing Translate, MemQ, Memsource?
4. Have you ever used any other websites, applications, software, etc. for machine translation and/or computer-assisted translation?
5. If you have used some other websites, applications, software, etc. for machine translation and/or computer-assisted translation, which ones did you use?
6. How do you use MT and CAT tools when translating? Selecting the correct degree to which the statement applies to you. - I use these tools to translate: words from English; words to English; sentences from English; sentences to English; paragraphs from English; paragraphs to English; entire documents from English; entire documents to English.
7. How frequently and why do you use MT and/or CAT tools? - I use them: as a dictionary; to check pronunciation; to find synonyms; to translate for me; to give me a draft to edit.
8. How would you rate the following features of the specific MT/CAT tools that you used: ease of use; price, availability, languages offered; format options; ethics; translation quality; collaboration.
9. Any additional comments regarding the use of MT and/or CAt tools or any of their features?

The data were analyzed using percentage presentation. The number of occurrences of a particular response option is indicated in brackets and tables as frequency (f). The frequencies of responses to specific question items were combined to get a better insight into the purpose of use of MT and CAT tools by the students, in line with the research assumptions.

4. Results and discussion

Almost two-thirds of the respondents (63%) answered that they did not know the difference between MT and CAT, which immediately leads to assumptions as to the proper use of these tools. Interestingly, among those respondents, 20% are fourth-year students, 16% are both first- and second-year students, and 11% are third-year students, which indicates that younger generations of students at this University are more familiar with the MT and CAT tools.

In terms of the frequency of use of CAT and MT tools, 48.2% of the students (N=13) use these tools occasionally, 33.3% (N=9) frequently, 14.8% (N=4) very frequently and 3.7% (N=1) rarely. There are no students who responded ‘never’. Such results lead to the conclusion that

all students at the University (100%) use MT and CAT tools, the difference only being in the extent of their use, however, the frequency of that use is rather low.

The next question focused on some of the most popular MT and CAT tools. Figure 1 indicates that, while Google Translate is used by all students (100%), other translation tools are less commonly utilized, specifically, Translate Me by 14.8% (N=4), Yandex Translate by 11.1% (N=3), Bing Translate and Memsource by 7.4% (N=2), and Trados and MemoQ by 3.7% (N=1) of the students. MateCat is not used by students at all, although it is an open-source alternative to Trados and similar CAT tools. These results may prove beneficial in terms of long-term planning of translation study practices or the creation of translation tasks for students. Additionally, they indicate a need to introduce CAT tools in translation classes, especially their open-source options, as students do not seem to be familiar with them.

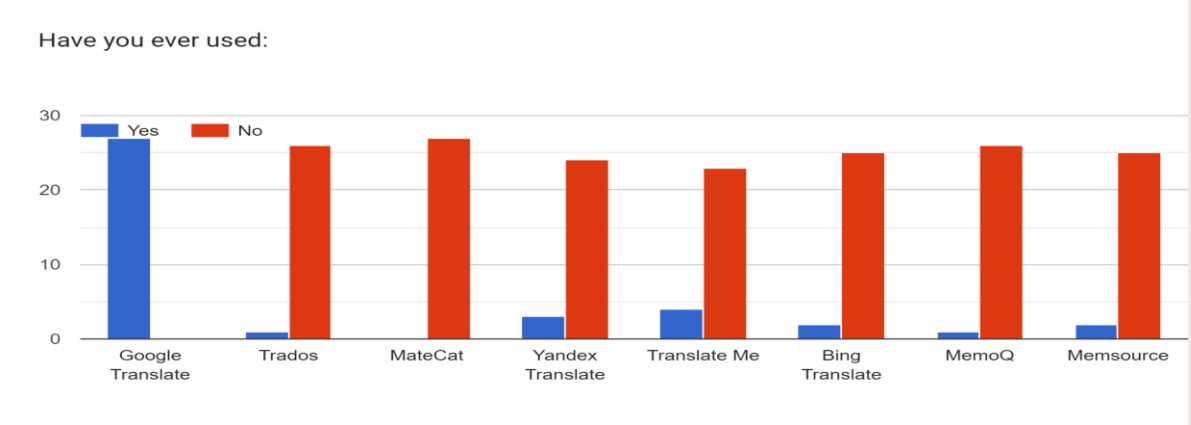

Figure 1. Types of MT and CAT tools used.

Apart from the offered choices of translation tools, another point of interest were any other possible MT, CAT, or similar translation tools that the students rely on and use on their own. 74.1% of the students answered that they had never used any other tools apart from the aforementioned ones, while 25.9% of them did use other translation tools, specifically, GlosBe and ChatGPT, a multilingual dictionary and an artificial intelligence assistant, respectively.

The next set of questions focused on the purpose of the students' use of translation tools.

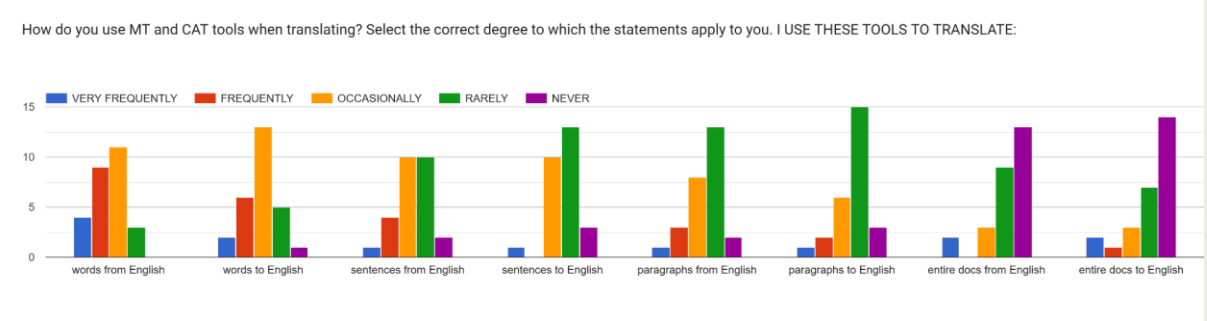

Figure 2. Frequency of use of MT and CAT tools for specific tasks.

As illustrated in Figure 2, students are more likely to use MT and CAT tools for less complex tasks, such as translating individual words or sentences, and less likely to rely on them for more complex translations, such as full paragraphs or documents. When it comes to the average

frequencies MT and CAT tools are used by the students for any type of translation offered - translation of words, sentences, paragraphs or entire documents, they are as follows:

Response	Frequency (f)	Percentage
very frequently	16	7.4%
frequently	25	11.6%
occasionally	64	29.6%
rarely	75	34.7%
never	38	16.7%

Table 1. Average frequency of use of MT and CAT tools for translation

A total of 83.3% of the students use MT and CAT tools for translation tasks ranging from words to entire documents, although with varying degrees of frequency of use, while 16.7% of the students never use MT or CAT tools for translation.

When it comes to the issue of whether the students use MT and CAT tools more for translating from English to their native language or *vice versa*, the results are the following:

Response	from English		to English	
	Frequency (f)	Percentage	Frequency (f)	Percentage
very frequently	8	7.4%	6	5.6%
frequently	16	14.8%	9	8.3%
occasionally	32	29.6%	32	29.6%
rarely	35	32.4%	40	37%
never	17	15.8%	21	19.5%

Table 2. Average frequency of use MT and CAT tools for translation from and to English

As indicated in Table 2, 22.2% of the students use the said tools for translation from English to Bosnian very frequently and frequently combined, as opposed to 13.9% of them who use these tools very frequently and frequently to translate to English. Such a low percentage of use of the MT and CAT tools for translation might be attributed to the fact that the students use these tools the most to understand the meaning of words rather than to translate documents, which may be related to their lower English language proficiency. Significantly, with regard to the average percentage of students who never use MT or CAT tools for translating from English to their native language and *vice versa*, it amounts to 15.8% and 19.5% respectively. The latter might seem surprising given that CAT tools abound significantly more in glossaries, terminology databases and translation memories in English than in the Bosnian language.

Question number 8 examines the frequency of use of MT and CAT tools to accomplish specific tasks - look up a word, check pronunciation, find a synonym, translate something or provide a draft translation for editing.

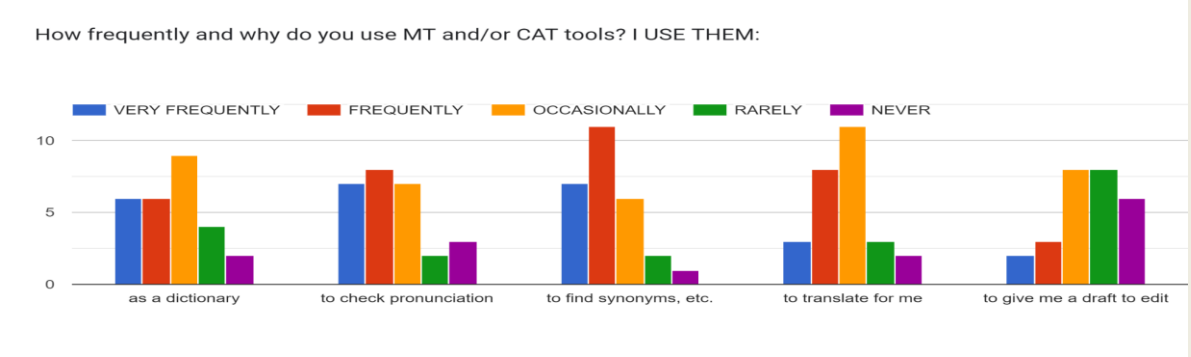

Figure 3. Frequency of use of MT and CAT tools for specific purposes.

As indicated in Figure 3, a total of 93% (f=25) of the students use MT and CAT tools as dictionaries, while 96% (f=26) of them use the tools as a thesaurus, even pronunciation checkers, 89% (f=24), although with a varying degree of frequency of use. Most did respond that they occasionally used them for translation purposes as well, but what is interesting is that more students used them as a thesaurus (96%) rather than a translation tool (93%; f=25). Further, more students seemed to be using these tools for final translation (96%) than for drafting an editable version to work on (78%; f=21). The student responses to question number 8 can be classified into two segments - the first three items revealing how often the students use MT and CAT tools to serve the purpose of common dictionaries (to look up a word, check pronunciation or find a synonym), and the remaining two items indicating again how often these tools are used for translation or draft translations. When combined in this way, the results reveal that a total of 78% (f=21) of the students use MT and CAT tools as common dictionaries, with varying frequency - 24.7% (f=20) very frequently, 30.6% (f=25) frequently, 27% (f=22) occasionally, and 9.8% (f=8) rarely, while 7.4% (f=6) never use these tools as dictionaries. Further, a total of 85.2% (f=19) of the students use these tools for translating or obtaining a draft translation, out of which only 9% (f=5) very frequently, 20% (f=11) frequently, 35% (f=19) occasionally, and 20% (f=11) rarely. Interestingly, 15% (N=8) of the students do not use MT or CAT tools for either translating or obtaining a draft translation.

Question number 9 was used to inquire into the students' satisfaction with specific features of MT and CAT tools - their ease of use, price, availability, languages offered, format options, ethics, translation quality, and collaboration. The results are presented in Table 3. below:

Feature	**Very satisfied**		**Satisfied**		**Neither satisfied nor dissatisfied**		**Dissatisfied**		**Very dissatisfied**	
	f	%	f	%	f	%	f	%	f	%
Ease of use	4	14 .8%	14	51.9%	9	33.3%	0	0	0	0
Price	9	33.3%	7	26.0%	9	33.3%	2	7.4%	0	0

Availability	13	48.1%	9	33.3%	5	18.6%	0	0	0	0
Languages offered	9	33.3%	10	37.1%	8	29.6%	0	0	0	0
Format options	5	18.5%	9	33.3%	11	40.8%	2	7.4%	0	0
Ethics	4	14 .8%	9	33.3%	9	33.3%	4	14 .8%	1	3.7%
Translation quality	1	3.7%	7	26.0%	15	55.6%	3	11.0%	1	3.7%
Collaboration	3	11.0%	7	26.0%	15	55.6%	1	3.7%	1	3.7%
Total frequency (f)	48	**22.2%**	72	**33.3%**	81	**37.5%**	12	**5.6%**	3	**1.4%**

Table 3. Student satisfaction with MT and CAT tools' features.

Only a small percentage of students were overall dissatisfied or very dissatisfied with the features of MT and CAT tools, 5.6% and 1.4% respectively. Interestingly, 37.5% of the students are on average neither satisfied nor dissatisfied with all of the features investigated, particularly so with the translation quality and collaboration, suggesting that they are not familiar with all the options these tools offer. The students expressed the highest level of satisfaction with the availability of MT and CAT tools (48.1% are very satisfied and 33.3% are satisfied), as well as with the ease of use (51.9% are satisfied). Further, 37.1% of them are satisfied with the languages offered and 33.3% with format options and ethics, and only 26% of them are satisfied with the translation quality and collaboration.

The last, open-ended question asking the students to provide any comments related to MT and CAT tools they used, reveals that students have a somewhat critical view of their use. They say that these tools "should be used only as a helping tool not as a means to replace humans and their jobs", or that these tools "are not very helpful when it comes to translating sentences from the Bosnian language because they lose the original meaning and are grammatically very incorrect". Further, "they have a good use for synonyms, transcription, and various meanings a word can have giving examples with different context".

5. Conclusion

This paper aimed to investigate the frequency, perception, and purpose of the use of MT and CAT tools in the translation process among English major students at the University of Zenica to gain a better understanding of their use of these tools. Although the students are generally familiar with digital technologies (Prensky, 2012) and they have embraced a variety of digital tools (Bureković et al., 2020), this research shows that students do not use MT and CAT tools that often. Only 18.5% of the students use these tools very frequently and frequently, while only 19% of them do so for translation purposes, a finding contrary to the initial assumption that undergraduate English language students frequently use MT and CAT tools. Even when they do use these tools for translation, first of all, they resort to the most popular ones, such as Google Translate (100% of them), to a lesser extent ChatGpt and Glosbe and secondly, they rely on them for less complex tasks - predominantly for translating words from English to

Bosnian. Combined with the findings that 78% of the students uses MT and CAT tools as dictionaries, that 16.7% of them never use these tools for translation, and that 37.5% of them are neither satisfied nor dissatisfied with the tools, the results may lead to the conclusion that students are insufficiently familiar with the features and the potential these tools have in performing translation tasks. At the same time, the study also highlights a lack of the students' awareness of the distinctions between MT and CAT tools. The answers point to the need to provide students with a much better understanding and knowledge of MT and CAT tools and to instruct them about the proper use of their full potential. The results also provide valuable insights into the students' translation process habits, as they reveal a very low number of students who actually use these tools for drafting and then editing translation drafts, to create their own final versions. Consequently, this suggests that the students should potentially be encouraged to view these tools as more powerful helping tools rather than quick solutions for easy problems.

Although the survey was conducted among a relatively small number of students, the results highlight a need for improved education and instruction in terms of use of both MT and CAT tools. Additionally, they indicate the necessity for a long-term planning of translation study practices and the creation of translation tasks for students, as well as a need to introduce CAT tools in translation classes, especially their open-source options, as students do not seem to be familiar with them. By promoting the use of these tools in a more strategic manner, students can enhance their translation quality and overall learning experience. Encouraging better translation practices and helping students see these technologies as useful tools at their disposal could be achieved by providing a more knowledgeable and deliberate approach to using these tools to their true potential.

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