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Foreword



The Chartered Institute of Linguists (CIOL) is pleased to have partnered with the University of Bristol on the Uses of AI Translation in UK Public Service Contexts. This groundbreaking research, authored by Dr Lucas Nunes Vieira of the University of Bristol, examines a previously unstudied aspect of our public services: the use of machine translation tools by frontline workers.

The findings presented here are both informative and concerning. They reveal significant use of AI-powered translation tools, including Google Translate and ChatGPT, in healthcare, legal, emergency, and police services - a practice that has largely gone unnoticed and unregulated. The data, from over 2,500 UK professionals, shows that a third of respondents have used machine translation in their work, often in public-facing situations where miscommunication could have serious consequences.

Of particular concern is the lack of institutional awareness and acknowledgement of this practice and the absence of appropriate policy frameworks to protect the public and public service work

Executive Summary



Machine or artificial intelligence (AI) translation tools are used in a range of contexts as a communication aid. These tools can provide helpful assistance in the face of a language barrier. Their benefits may include greater linguistic diversity and increased access to information, but machine translation is also risky. Translation errors are common and may be difficult to identify for users who do not speak both the starting language and the language translated into. Existing research has shown that machine translation is used in contexts where miscommunication can be highly consequential, such as in healthcare and policing. This type of machine translation use has so far tended to go under the radar, with little public discussion and, importantly, little evidence of the extent and nature of the reliance on machine translation tools in these contexts.

This report therefore presents preliminary results of a survey of machine translation use in health and social care, legal and emergency services, and the police. The focus of the survey is on uses of unedited machine translations. A sample of 2,520 UK professionals submitted valid responses to this survey. A total of 33% of them had used machine translation at work, most often in contexts involving direct communication with others in a shared physical space. The professionals were highly satisfied with the tools they used. They were also confident in their ability to use the tools successfully, even though it was uncommon for machine translation to be mentioned in workplace training. Google Translate was by far the tool used most often. The use of generative AI tools such as ChatGPT also ranked highly. The tools were often accessed on personal devices using an openly available browser interface, practices which pose significant risks to privacy and information security.

While the report does not present the full data collected in the study and is not intended to provide detailed guidance or a best practice model, it offers three basic recommendations aimed at greater transparency and awareness-raising:

- 1. At a minimum, organisations need to recognise (in training, staff communication, the organisation's literature) that AI/machine translation exists, and that staff and members of the public may be instinctively inclined to use it.** The potential presence of AI/machine translation in the contexts covered by this report cannot be institutionally ignored.
- 2. The use of AI to overcome language barriers needs to be addressed in policy.** Institutional policies need to be sufficiently flexible to keep up with technological developments while also protecting the community from the risks posed by machine translation. Policies ideally need to involve dedicated language access teams, a mechanism for assessing needs and reviewing the policy, as well as protected budgets for professional language services and information on where these services should be prioritised.
- 3. Organisations need to place more emphasis on education and staff training.** AI and machine translation literacy need to be embedded in the workplace culture to equip workers with the skills necessary to make decisions in what are increasingly challenging and technologized working environments.

Introduction



The University of Bristol has partnered with the Chartered Institute of Linguists to publish a survey of UK professionals on their uses of machine or AI translation in health and social care, legal and emergency services and the police. The focus of the report is on uses of unedited machine translation as a communication tool. The survey was conducted by Dr Lucas Nunes Vieira as part of **Critical Language Barriers**, a project funded by the UK's Arts and Humanities Research Council. The present report summarises key results of this survey. Full details, including analysis of open-text responses, will be available in future publications.

While not all sectors covered by the report are necessarily or directly publicly funded, the term 'public service contexts' is used here to emphasise the sectors' potential to serve and affect all members of society. The sectors' reach and community-facing nature therefore justified their inclusion.

Other important public sectors such as education and government administration are not covered because they were considered either too broad or too different from the selected sectors to be examined in the same investigation.

Although machine translation tools like Google Translate have been available for some time, little is known about the prevalence of these tools in the public service contexts selected for the study. The survey sought to ascertain whether the professionals use machine translation in their work, how they use it, what kind of guidance or training they might have received and, more generally, how they assess the use of these tools. The terms machine and AI translation are used here interchangeably to cover both the output of dedicated translation tools, such as Google Translate, and translations provided by generative AI applications, such as ChatGPT.

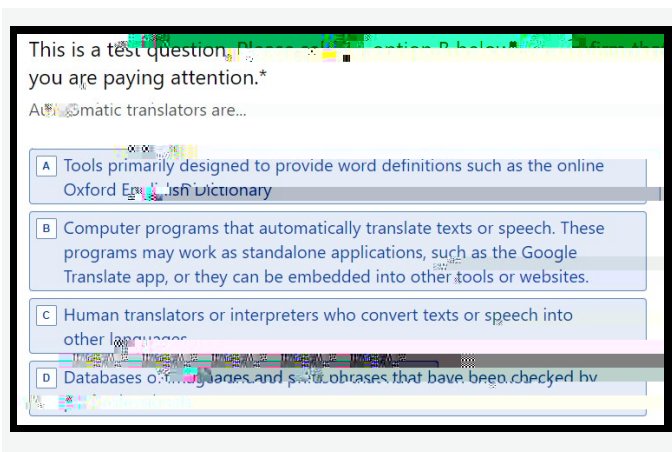
Data collection and methodology

¹ Participants received £1 to complete a short screening questionnaire. Those who progressed to the full study received a further £2. The

To cover a range of machine translation use methods, the definition mentions not only Google Translate, but also AI and the possibility that machine translation can be an embedded service. The questionnaire then adopted the phrase 'automatic translators', a descriptive, non-technical term used effectively in previous work.²

After reading the paragraph above, participants saw a series of options and were told to select the one that confirmed the study's machine translation definition. To avoid making participants feel like they were taking a test, they were told what option to select. This question was therefore an attention (rather than a comprehension) test that served to confirm that participants were reading instructions. The question nevertheless also reinforced the study's definition of machine translation. The options sought to clarify potential confusions with similar technologies or services. The options are presented in Figure 1. Those who failed this attention check were automatically invited to leave the survey without submitting a response.

Figure 1. Attention check



Participants were also asked to confirm their industry when completing the screening questionnaire to ensure that their answer was consistent with the Prolific demographics. Those who selected the option "Other Industry/None of the Above" were excluded.³

In addition, the Prolific demographics were inspected to check participants' employment status. Where inconsistencies were spotted (for example, participants who had selected one of the industry categories above but who were also marked as unemployed or looking for work), the corresponding submissions were disregarded. Where employment status data was unavailable, the responses were retained as long as the participant's industry selection was consistent with the Prolific demographics.

Participants who were timed out were also excluded. Timed-out participants were those who did not confirm their submission on Prolific within a specified time limit. This limit is automatically set based on completion time estimates provided by the researcher. Prolific excludes these participants by default. Most of them took long breaks during the study that were likely to affect data quality (for example, due to poor recall of previous questions).

Lastly, two responses to the main questionnaire indicated that machine translation had not in fact been used in a professional capacity or at all. These responses were excluded. Some other responses raised doubt about whether the participant had understood the study's definition of machine translation. For example, when asked about their opinion on how different the use of automatic translators would be in 20 years' time – a question not analysed in this report – one participant replied, "Hopefully there will be an app so that we can type in what we need translated so we [don't] always have to do it over a phone call". Machine translation apps are already widely available, so this participant was most likely referring to human-mediated services rather than machine translation. Responses where misunderstandings of this nature were apparent were excluded, as were responses that were sufficiently ambiguous to raise doubt

2 Vieira, Lucas N, Carol O'Sullivan, Xiaochun Zhang, and Minako O'Hagan. "Machine Translation in Society: Insights from UK Users." *Language Resources and Evaluation* 57 (2023): 893-914. <https://doi.org/10.1007/s10557-022-00501-1>.

3 One participant who selected "medical/healthcare" was a veterinary surgeon. This participant was less relevant to the study because they did not work in human healthcare. The response was nevertheless retained since it was a single case and there were no inconsistencies with the Prolific demographics despite the unusually broad understanding of the industry category.

Table 13. Machine translation use decision

How has the decision to use an automatic translator come about in your industry? Please select a single answer corresponding to your typical experience.	count	%
I decided to use it	564	68.0
It is the procedure recommended by my employer	124	15.0
Someone I was speaking to started using it and I continued interacting with them in that way	124	15.0
Other	15	1.8
(Missing)	2	0.2

Regarding aspects of technical infrastructure, machine translation was most often used on mobile phones (Table 14). The devices on which it was used were most often provided by employers, although in many cases these were personal devices (Table 15). The most common method of accessing the technology was to use a browser-based interface (Table 16). Google Translate was by far the most used system, although generative AI tools such as ChatGPT also ranked highly and were selected more often than some established tools such as Microsoft Translator (Table 17). ChatGPT had been available for a little over a year at the point the data was collected, so the comparatively high take-up of this type of tool is notable.

Table 14. Device types on which machine translation was used

On what type(s) of device have you used automatic translators in your industry? (Multiple selection)	count	%
Mobile phone	607	73.2
Laptop	353	42.6
Desktop	281	33.9
Tablet	125	15.1
Automatic translator device	30	3.6
Smart speaker	10	1.2
Smartwatch	4	0.5
Other	3	0.4
(Missing)	1	0.1

Table 15. Device ownership

How would you describe the device(s) where you used automatic translators in your industry? (Multiple selection)	count	%
Device(s) provided by my employer	544	65.6
My own personal device(s)	479	57.8
Device(s) that belonged to individual(s) with whom I was communicating	154	18.6
(Missing)	2	0.2
Other	1	0.1

Table 16. Machine translation use methods

How did you access the automatic translation(s) you used in your industry? (Multiple selection)	count	%
I used an openly available tool via a browser (for example, https://translate.google.co.uk/)	636	76.7
I used an app or tool that is publicly available for download (for example, in the Apple App Store or Google Play Store)	244	29.4
The automatic translator was available by default on the device I used	93	11.2
I asked a chat bot like ChatGPT to provide translations ¹²	74	8.9
It was a specialised automatic translator provided by my employer and which is not publicly available	74	8.9
Other	7	0.8
(Missing)	2	0.2

12 This option overlaps with using an openly available tool via a browser, which likely explains the small difference in the number of those who selected ChatGPT in this question (74) and those who selected it in the question displayed in Table 17 (84).

Table 17. Machine translation systems or system interfaces

What specific automatic translator(s) have you used in your industry? (Multiple selection)	count	%
Google Translate	797	96.1
The default ¹³ automatic translator in my web browser	85	10.3
I asked a chat bot like ChatGPT to provide translations	84	10.1
The default automatic translator available on my smartphone	42	5.1
The default automatic translator in a text editor such as Microsoft Word	37	4.5
The default automatic translator available in a meeting tool, for example Zoom, Skype or Microsoft Teams	34	4.1
Apple's Translate app	33	3.9
Bing or Microsoft Translator	27	3.3
Other	26	3.1
The default automatic translator available on a social media platform, for example Facebook or Twitter	20	2.4
iTranslate	15	1.8
DeepL	12	1.4
Speak and Translate	12	1.4
SayHi Translate	9	1.1
Translate Now	7	0.8
Reverso	6	0.7
Systran	3	0.4
(Missing)	2	0.2
Yandex	1	0.1
PROMT	0	0.0

As mentioned, many participants used machine translation at the same time as other communication methods (Table 18). Common types of additional language support included other individuals who spoke the relevant language, web searching, and printouts with images and set phrases (Table 19).

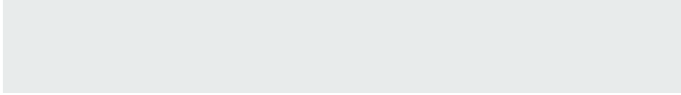
13 While some of these options may overlap in terms of the underlying system (for example, Microsoft Translator is the default system in the Microsoft Edge browser), these options helped to capture the type of tool used even if users were not aware of what the underlying system was.

Table 18. Whether machine translation was used together with other communication methods

In your typical experience in your industry, did you use automatic translators at the same time as other methods of communicating or accessing information?	count	%
Yes	440	53.1
No	372	44.9
(Missing)	17	2.0

Table 19. Other communication methods used together with machine translation. Base = 440 (those who had used other methods).

the sam@ebn-02(NoSQ 1 0 0 1 304.7243 489.6556 cm0 0 m171.4(4.0005



had never received workplace training may suggest a perception that best practices or expectations are not clearly communicated.

Table 20. Whether machine translation featured in workplace training

Were automatic translators ever mentioned in any workplace training you received in your industry?	count	%
No	599	72.2
Yes	93	11.2
Not sure or I don't remember	71	8.6
I never received any workplace training	63	7.6
(Missing)	3	0.4

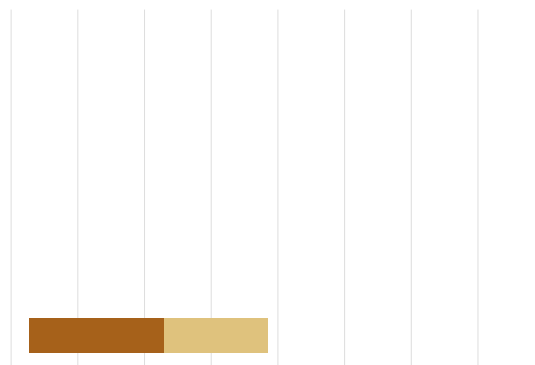
Participants' levels of satisfaction with machine translation were extremely high. They were asked to rate the extent to which they agreed or disagreed with six statements about the potential usefulness of machine translation in their work. The statements are presented in Figure 2 together with participants' ratings.¹⁴ The ratings ranged between 1 (strongly disagree) and 5 (strongly agree).

Some of the statements expressed positive assessments of machine translation (for example, "Automatic translators allowed me to achieve my objective"). Others expressed negative assessments albeit without using grammatical negation to avoid confusion (for example, "Automatic translators involved more risks than benefits"). As can be seen, most participants agreed with the statements that favoured machine translation and disagreed with the ones that disfavoured it. The level of consensus among participants was also high, for example with 89% disagreement with the statement "Automatic translators made my work more difficult".

Table 21. Confidence in own ability to use machine translation successfully

How confident do you feel in your ability to overcome language barriers using automatic translators in your industry?	count	%
1 = Not at all confident	15	1.8
2	71	8.6
3 = Somewhat confident	303	36.5
4	331	39.9
5 = Very confident	101	12.2
(Missing)	8	1.0

When asked about their levels of confidence in their ability to overcome language barriers using machine translation, most participants were at least somewhat confident (Table 21). Only 1.8% of them selected the option "Not at all confident".



¹⁴ The internal consistency of participants' ratings was high, with a Cronbach's Alpha of 0.85 across all six statements.

