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Response-able, collaborative adaptations of multilingual health messaging: a case study from Australia and Hong Kong, SAR

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ABSTRACT

This article explores how citizen adaptors in Australia and Hong Kong (n = 22) work collaboratively with a not-for-profit health organisation (NGO), one another and Generative AI to produce accessible, multilingual public health messages. There is an urgent need for multilingual health communication, given that it is a human right and a social determinant of health, and without it, lives may be put at risk. To address this, a process of translation is often required. Many organisations require these translations to be performed by professionals, making them cost-prohibitive to access. Hence, in this article, we propose the notion of citizen adaptors who collaborate with GenAI as a non-professional option for generating multilingual health communication. We engaged citizen adaptors to adapt three sets of health messages about neurofibromatosis from English to Chinese Mandarin, Cantonese, Indonesian, and Russian. Drawing on Donna Haraway's notion of response-ability (the capacity to respond), we consider the skills, knowledge, and other responses the citizen adaptors highlighted as important for the collaborative adaptation of multilingual health messages. They noted that reciprocity, biliteracy, and affective attachments were phenomena that they were capable of responding to in the context of response-able, collaborative, multilingual adaptations. These findings support calls for more flexible language practices to be incorporated in the process of translation as well as for the role of non-professionals to be more carefully considered. It also cautions against the unscrupulous use of GenAI and provides strategies for response-ably working with the technology.

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Introduction

This study critically considers the response-able, multilingual adaptation of health communications through a collaboration between citizen translators in Australia and Hong Kong, generative AI, and an Australian-based not-for-profit health organisation. This study responds to international and national calls for multilingual health communication, which is a human right and social determinant of health (Zhang, 2023). Moreover, studies in multilingual crisis and health communication have shown that 'language barriers can create life-threatening situations for those who are not competent in the dominant languages used' (Uekusa & Matthewman, 2023, p.2). Other recent literature on multilingual, public health messaging has also highlighted the unreliability of existing machine translation sources to create highly accurate translations when used by non-professionals (Lees, 202), a lack of policy outlining how multilingual translation can be undertaken, especially by non-professionals, as a form of crisis and emergency management (Al-Shehari, 2022; Heinrichs et al., 2022), and the need for more 'bottom-up' approaches leveraging the skills and peripheral languages of community members to challenge monolingual communication (Gu, 2024). Moreover, multilingual health translation research continues to point out that source texts exceed recommended health literacy levels, which tend to hold once a text is translated; this results in complex health texts that are especially difficult for vulnerable, multilingual populations who have

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varying literacy needs, e.g. due to oral language preferences, or limited access to formal schooling (Heinrichs et al., 2023). This also highlights the need for source texts to be prepared in translatable language at the appropriate literacy level and be translated into the target language at the appropriate literacy level (Diget, 2024; Goddard, 2021). Although health literacy checking software is widely used, it is not always reliable or culturally adapted, nor are translations into 'easy' language produced by Artificial Intelligence software (Heinrichs et al., 2023; Maaß, 2024; Rainkie, 2025). In addition, while it is possible for translations to be provided via machine translation or artificial intelligence at low or no cost, policy requirements often mandate the use of highly skilled, professional translators at a cost, making their services inaccessible to not-for-profit organisations or times when rapid translation is required (Heinrichs et al., 2022).

This paper draws on *compostist*[1] theorist Donna Haraway's notion of response-able as the 'capacity to respond' (p.16). Despite calls for posthuman-inspired work in public health (Rock, 2017) and multilingual communication (O'Brien, 2023), little attention has been given to posthuman theorising in multilingual, public health communication research. Multilingual public health communication research has focused on translation and interpretation, studies and health literacy research (Chu et al., 2022; Federici & O'Brien, 2019; Lin et al., 2020). This literature is centred on studies that typically employ qualitative analyses or quantitative measures of health literacy scores related to translated materials. These studies focus on the role of professional translators, who, while a vital part of the source of trusted information, are expensive and potentially unavailable in time-sensitive scenarios and dismiss the role of other bilingual sources – both human and non-human. Critical posthuman analyses of multilingual public health messaging are needed to bring forth a strengths-based perspective focusing on improving health equity for marginalised communities and to consider the entanglement of more-than-human phenomena in such processes (Friese & Nuyts, 2017). In line with calls to productively apply posthuman theorising to public health research (Cohn & Lynch, 2017) and to embrace the posthuman turn in linguistics (Pennycook, 2021), we (re)conceptualise the notion of response-able adaptation of multilingual health communications. To develop an understanding of how response-able adaptation might be undertaken, we facilitated a series of co-design workshops drawing on the skills and insights of citizen adaptors, generative AI, and a not-for-profit health organisation. We noted the importance of a capacity to respond to the need for reciprocity, biliteracy, and affective attachments in ways that challenged traditional notions of how translations should be undertaken in favour of more flexible approaches possible for citizen adaptors.

These findings respond to a multifaceted dilemma for research into multilingual, public health communication: How might multilingual health messages be response-ably (re)produced with the help of citizen translators and generative AI? We highlight the intra-action of human and more-than-human capabilities in the production of multilingual health communications and question why these matter for the broader field of health communication, mindful of theoretical, conceptual, practical, ethical, and moral considerations. In a recent article discussing machine translation and GenAI, O'Brien (2023) argued that antagonistic dualisms (e.g. professional vs. non-professional, human vs. machine) must be questioned for 'what this says about our fears and vulnerabilities' (p. 3). O'Brien (2023), citing Haraway's (2016) work, contends that we embrace " kinship' with machines and the translator's ability … [being] amplified by that of the machine' (p. 3). We continue this line of thinking and explore the response-abilities generated in producing multilingual health messaging for citizen adaptors, Gen-AI, and public health practitioners. This article critically considers what a response-able approach to adapting health communications into multiple languages with the assistance of AI might look like and the possibilities and troubles generated. In doing so, it contributes to the growing body of critical, posthuman approaches to public health research (Cohn & Lynch, 2017; Collins, 2023; Lehoux et al., 2017; Rock, 2017) and adds to the dearth of research on the validity of citizen adaptors in multilingual public health communication (Federici & Declercq, 2020).

Adaptation as response-ability in multilingual health communication

Originating in studies from literary translation (Azenha & Moreira, 2012), the idea of adaptation, and even adaptation studies, has been applied in research but is limited to film and cinematic research (Sharma, 2017). Adaptation as an alternative or complement to translation was originally described as 'reductions,

expansions, or inaccurate translations, or still as substitutions' (Azenha & Moreira, 2012, p. 63). This deficit framing of adaptation and condescension as 'the poor cousin' of translation (Milton & Cobelo, 2022, p. 2) has been partially disregarded, with adaptation being more widely recognised as an essential component of intercultural communication. Nevertheless, there remains a greater focus solely on the cultural aspects of adaptation, which may overlook the adaptation required for linguistic clarity (McKown et al., 2020; Wild et al., 2005).

Adaptation is based on changing content to ensure a better fit, often to an alternative or additional context from which a source text is created (Cattrysse, 2020). Adaptation is also referred to as 'free translation', given that there is a lesser degree of fidelity to the source text in language, style, genre, and/or mode (Cattrysse, 2020). Strategies for adaptation, differing from translation, involve creative reworkings of texts that may include written language, multimodal resources, and deeper engagement with local contexts, potentially resulting in alternative versions of a text (Milton & Cobelo, 2022).

The process of adaptation, either as an alternative or complement to translation, was introduced by the World Health Organization (2023) as part of the guidelines for the adaptation and translation of childhood development scales. In these guidelines, the WHO (2023) recognises the potential for adaptation as an alternative to translation for its capacity to 'better suit the local context' (p. 10) but also stresses the need for approval and recommends only minor adaptations for different cultures. However, it should be noted that other local government policies still strongly recommend using professional translators over other bilinguals (NSW Health, 2023) and do not use the term adaptation to describe this process.

Recent studies claiming to apply adaptation in health communication for multilingual populations have described it as the process of altering (usually through translation) existing surveys or scales into additional languages, with or without thoughtful consideration of cultural nuances (Bakırlıoğlu, & Çetinkaya, 2023; Batista et al., 2020; Levic et al. 2022). Rather than explicitly unpack which actors can or should engage in the adaptation of multilingual health communication, why and how, recent studies recommend the following actors undertake translation: local leaders (Feinberg et al., 2021), community members (Heinrichs et al., 2023; Karidakis et al., 2022), linguistic advocates (Davis & Heinrichs, 2023), CALD representatives (Wild et al., 2021), community leaders (Seale et al., 2024), citizen translators (Federici & Cadwell, 2018; Zhang et al., 2023) or even volunteer translators (Rossetti & O'Brien, 2019). This suggests that there is a continued shift towards the inclusion of non-professional translators as capable of adapting health communication. Although discussing volunteer translators, the ethics of engaging with them has also been raised, especially when they contribute to asset-centred corporate models with fee-for-service (albeit discounted) (Piróth & Baker, 2020). Another concern relevant to the adaptation of health communication emerging from translation-based research related to the need to consider the cultural appropriateness of texts has been explored using well-established frameworks such as the Patient Education Materials Assessment Tool (PEMAT) (Sengupta et al., 2024) and in a more tailored framework that considers health literacy indices and cultural nuances called the Patient-Oriented and Cultural-Adapted Model (Heinrichs et al., 2023; Lin & Ji, 2019). Nevertheless, these studies have largely examined materials post-production rather than the process of doing so from the perspective of citizen adaptors. Another often-neglected actor in the art of adaptation is digital technology. Studies have recently noted the role of machine translation (Herrera-Espejel & Rach, 2023; O'Brien, 2023), yet the pace at which Generative AI is developing has resulted in no known studies examining its potential for use by citizen adaptors in the context of multilingual health communication.

Theoretical position

This research explores response-abilities for collaborative adaptation of multilingual health messages when citizen adaptors and GenAI intra-act. We understand response-abilities in this sense from Donna Haraway's work, in which she notes response-ability as the 'capacity to respond' (p.16). Within Haraway's broader body of work linked to posthumanist, new materialist, and feminist technoscience research, response-abilities offer a path for ethically thinking and becoming with human and more-than-human phenomena by considering possibilities and troubles for doing so. Haraway (2016) further theorises this becoming-with by drawing on the biological concept of *sympoeisis* to highlight the interconnected, relational, situated, and fluid ways of becoming-with as we 'require each other in unexpected

Table 1. Binaries in (health) translation and adaptation.

Translation	*Adaptation*
Professional/Certified	Non-professional/uncertified
Human	Non-human (machine translation, GenAI)
Monolingual based on 'native speakers'	Multilingual incl. translation-ese, post-editese
Creative	Uncreative
Fidelity to source text	Freedom to stray from source text
Slow	Fast
Perfectionism	Acceptability
Objective and detached from audience (transcendence)	Subjective, affective/affected and attached to audience (immanence)
Master	Apprentice
Bi- or multilingualism	Bi- or multi-literacy
Tradition	Modernity
Back and forth	Cyclical

collaborations and combinations… We become-with each other or not at all' (p. 4). However, she acknowledges the difficulties in doing so whilst encouraging us to 'stay with the trouble' in the pursuit of uncomfortably making oddkin rather than seeking salvific futures (Haraway, 2016, p.1). As such, Haraway's notion of response-abilities raises questions, such as who/what should respond to the need for multilingual health messaging, how should they/it respond, what counts as a response, and why this matters (Heinrichs, 2021).

We further draw upon posthumanist problematising of the binary categories that construct phenomena as normal and others as deviant (Ringrose, 2015) and question how this manifests concerning collaborative adaptations of multilingual health messaging. This point has recently been touched on by O'Brien (2023), who asks, in the context of translation, 'Is there anything to be gained from adopting a less binary stance?' (p. 2) urged on by Haraway's call for 'pleasure in the confusion of boundaries and for responsibility in their construction?' (1985, p. 8). Hence, our theoretical framing is attentive to antagonistic dualisms and binaries that shape collaborative adaptation (see Table 1) while attempting to resist the urge to maintain such dichotomies in favour of exploring complexity and 'staying with the trouble' (Haraway, 2016, p.1).

We explored two aspects of response-abilities for collaborative adaptation of multilingual health messages: possibilities that offer insights and potential for working with(in) the aforementioned complex and contradictory dualisms and troubles that raise further questions about our human and non-human ethical responses in this process in the context of public health communication. In agreement with the posthuman (and Haraway's compostist) theory, we acknowledge that these possibilities and troubles may intra-act in and through collaborative adaptation.

Data and methods

This research was conducted with citizen adaptors (CAs) in Australia and Hong Kong (n = 22) and one non-governmental health organisation (NGO) in Australia (n = 1). Both Australia and Hong Kong are highly diverse. Australia's sociolinguistic profile is characterised by over 60,000 years of Indigenous languages and the imposition of colonial languages since the 1800s. These have predominantly included English (now the nation's de facto official language), German, Italian, Greek, French, and Spanish. Although a number of Asian languages have been present in Australia since the late 1800s-early 1900s due to the Gold Rush, waves of migration opening up places for both humanitarian and economic migrants from the 1970s onwards have seen significant growth in the number of speakers of Chinese Mandarin, Cantonese, Vietnamese, Indonesian, Japanese, Korean, Thai, Hindi, and Urdu among many others. Over 300 languages are used in Australia, and speakers come from various countries and hold different religious beliefs (Australian Bureau of Statistics [ABS], 2016). However, the primary language used is English, and most Australians have British ancestry (ABS, 2016). Similarly, Hong Kong is highly diverse although the majority of people hold Chinese ancestry due to its historical significance as an outpost of the Qing dynasty. From 1840 to 1997, Hong Kong was under British rule, which influenced the linguistic profile by introducing English. Presently, Hong Kong has returned to China, and most Chinese-speaking people speak Cantonese. Unlike Australia, which has been described as functioning with a monolingual mindset (Clyne, 2004) whereby English acts as the de facto official language for

education, law and health, Hong Kong has an official policy of 'biliteracy and trilingualism… in the dominant local Cantonese variety of Chinese, Putonghua or standard Mandarin Chinese, and spoken English' (Gu, 2022, p. 41).

The citizen adaptors in this study were university students aged between 18 and 25 years at the University of Hong Kong and Griffith University, Australia. The students were enrolled in various disciplines, including education, linguistics, biomedical sciences, IT, and engineering. The research project consisted of 5 x 2-hour workshops detailed in Table 2. The workshops stepped citizen adaptors and the NGO partner through strategies for maximising translatability, considering health literacy demands, responding to cultural understandings, and utilising Generative AI. The citizen adaptors were tasked with applying their learning from the workshops to adapt a set of three information packs (a checklist, a glossary, and an introductory information sheet Children's Tumour Foundation, 2024) into the language of their choice in groups of 3-5. There were six groups in total, with four groups adapting the texts to Chinese, one to Indonesian, and one to Russian. In each group, all CAs were proficient in English and the target language, although they may have had less frequent exposure to and use of the target language. In Russian and Indonesian groups, not all group members spoke or used the target language, although at least one group member did. These groups were instructed to collaboratively decide which aspects of the adaptation different members would undertake, for example, adapting the English text to maximise translatability and adapting to the target language. Citizen adaptors regularly reflected on their practice and were invited to participate in a 60-minute semi-structured focus group upon completing the 5-week program. Sixteen citizen adaptors participated in one of four focus groups. 22 citizen adaptors also contributed written reflections and AI-generated images in which the prompt encouraged them to respond metaphorically and by considering their affective and embodied sensations throughout the workshop program. CAs were permitted to use any free GenAI software of their choice but predominately used free versions of ChatGPT 3.5 for written texts and Midjourney for images. The study was conducted in compliance with the Helsinki Declaration. Ethical clearance for the research was granted by the University of Hong Kong Human Research Ethics Committee (EA240021) and Griffith University Ethics Committee (No. 2024/015). All participants were assigned pseudonyms to maintain their anonymity and provided written consent.

Our analysis draws on Braun and Clarke's (2019) reflexive thematic analysis, described as engaging with the researcher's experiences and opinions in an organic and recursive process to code the data while carefully reflecting on coding choices. As such, we engaged with data' and sought to generate '(initial) themes to emphasise that themes are not ' 'in' the data, pre-existing analysis, awaiting retrieval' (p. 593) but instead are generated through our discussions and reflections with one another and theory. In doing so, we sought 'patterns of shared meaning' (Braun & Clarke, 2019, p. 593) through ongoing discussion amongst the research team, reflection, and imagination about the data, which was guided by our theoretical framing of response-ability (Haraway, 2016). Thus, we have attempted to highlight examples of dynamic themes rather than determined, static ones and engage with our subjectivities to (re)imagine the possibilities for a response-able adaptation of multilingual health messaging. As such, our process for reflexive thematic analysis is not easily limited to deductive or inductive approaches but rather a recursive, generative, theoretically, and subjectively influenced analysis in line with a research ethic committed to 'adding versions to understand versions' (Haraway, 2016, p.128).

Table 2. Program of workshops.

#	Topic	Activity
1	Real-world communication problem	Audience Profile Analysis
2	Maximising Translatability, Health Literacy and Cultural Responsiveness in Health Messaging	Analysis of Source Texts
3	GenAI for Text Adaptation	Preparation and Adaptation of Source Texts using AI
4	Collaborative Adaptation in Groups	Repeated Adaptation, Analysis and Reflection
5	Presentations and Feedback	Showcasing Adaptations of Source Texts and Sharing Insights

Note: After the workshop program, certified translators were subjected to adaptations to a checking report to certify the accuracy of the information. Additional community members who used the target language were consulted to confirm the adaptations' clarity, acceptability and trustworthiness.

Early response-abilities for collaborative adaptations of multilingual messaging

Possibilities

Reciprocity

Adaptation has been described as 'the poor cousin' (Milton & Cobelo, 2022, p.2) of translation, which is exacerbated when GenAI is drawn on, partly because it is seen as a threat to the translating profession (Kirov & Malamin, 2022) and untrustworthy (Tavares et al., 2023). This establishes a binary in which translation is positioned as the traditional and trustworthy master, compared to adaptation as a separate, reliant, yet modern option. During the focus groups, the CAs explained that their processes for collaboratively adapting multilingual health messages aided by AI involved a reciprocal approach to teaching and (un)learning how adaptation might be undertaken. As Jamil stated:

> For the AI, this is deep learning. So, we have to flag to it that there are some issues, and we have to report it to the AI bot to teach the AI to amend it and to do the better work next time.

Similarly, Paul emphasised his capacity as a CA to provide feedback to produce collaborative adaptations of multilingual health messaging, noting:

> When translating the health information, sometimes the GenAI gives you Cantonese. Other times, it gives you traditional Chinese characters, which is very confusing. The consistency is really difficult to get. One solution is to give feedback to the AI. Like, after generating something, you press like or dislike and then it'll be input into the AI, and you know that the previous answer might not be what you want it. GenAI will make slight alterations so that the more you feedback, the more accurate it will be.

On the other hand, Minny shared a possible response-ability for the GenAI to seek its feedback in the process of collaborative adaptations:

> They need to rethink the way the AI makes assumptions.? ' It could come back with questions to clarify its assumptions. It could send us questions and say, 'Do you want this done with the lexical phrases?' or 'Do you want this literally translated?' or 'Do you want this done in a simplified English version? I think it would remove all of these unseen things in the background. GenAI should also have the ability for it to explain what it did.

Biliteracy skills

CAs explained that while bilingualism was important for collaborative adaptation, biliteracy skills meant 'even if you don't really speak the language you're adapting into or you're not a native speaker, you should at least be able to tell when the GenAI hasn't given you output in the intended language, e.g. in Japanese or Korean when you asked for Chinese' (Charlie). Ferdinand elaborated on the importance of biliteracy, going too far as to incorporate AI literacy in the collaborative adaptation of health messages. He stated:

> It's very important for CAs to have basic knowledge about how the target and source language work in terms of grammar and all that. I would also add that AI literacy, even though AI, is still very easy for us to pick up. But then the grammar skills, idioms and all these kinds of interesting things within the language itself require a strong knowledge of the cultural background of the language. These things can't be learned in one day or two. It takes a much longer time to do that …. So, it shows that there is a lot of human input required.

Paul also highlighted the response-ability to develop sound grammatical awareness and reiterated

> Language skills, especially grammatical knowledge, are important for collaborative adaptation because when you're adapting the text or when you're like judging how well it's been adapted, you really need to understand the language and understand the ambiguity that one sentence may convey. To understand the ambiguity, you really need to understand all the grammar that is happening in the sentences, such as 'Oh, so this is a verb, so this is this calls for an action', or you need to understand the relationships between the words.

Audience attachment

In one focus group, Charlie pointed out how the relational aspect of the project, whereby the health non-government organisation partner had shared a story of a family who required the adapted

documents, spurred his capacity to respond. This challenges the hierarchical ordering of objective translation as superior to subjective adaptation by allowing one's affective response to motivate the adaptation. As Charlie explained, 'Knowing that this translation would go to actual families exerted some kind of pressure on us. We felt we really needed to ensure that the quality was there, and the families would be able to understand'. In a similar comment during a focus group, Arabella explained the significance of carefully considering her audience as part of collaborative adaptation:

> During one of the workshops, we had to think of the audience profiles, and it really stayed with me. I've never really thought of that before when I have been reading a document. I have never really considered, 'Oh, people with a lower education level might not understand this health information'. That process added some perspective as to how I should approach the adaptation.

Troubles

Tricky terms

Throughout the focus groups, CAs shared terminology that did not seem to be easily adapted into English from other languages despite CAs' best efforts to identify troublesome terms, put them through health literacy checker software, and draw on the capabilities of GenAI. Examples include translating little ones and people with a disability into Indonesian or referral into Chinese. However, pertinent response-abilities regarding the collaborative adaptation of terminology were highlighted through the CAs' attempts to implement the multiple steps required to prepare texts for adaptation involving GenAI.

Skin

One CA, Minny, explained in her focus group a particular trouble in collaboratively adapting a text when her assigned task was to back-translate information to check for accuracy and maintain fidelity to the source text rather than concentrate on building connections across texts. She believed the error, initially, to be the fault of GenAI's lack of understanding of the Russian language and the health context from which the information was drawn:

> It's an eternal challenge. If I wanted to understand the accuracy of an adaptation, I would try and translate it back, and then it's that's where the adaptation got a bit muddled up. I couldn't actually understand if I'd made a mistake, as I don't know Russian. My Russian-speaking teammate told me there are fewer words for things, and I didn't know that. So, when I back-translated some information using the word 'skin,' I got back 'leather. 'And I thought 'Okay, the GenAI has misunderstood that there'. So, I went on my way and started typing, trying to fix that up. But it's this understanding that leather, skin - it's all the same word in Russian. So, I didn't make a mistake, but I didn't understand that as I don't know Russian.

However, when asked about the difficulty of adapting the term 'skin' in a separate focus group, her Russian-speaking teammate, Carmen, added:

> Actually, there was no mistake in our adaptation. It's just that when my teammate translated it back to check it was correct it seemed like there was. She then thought the GenAI was wrong because leather and skin are the same in Russian. So, it was skin originally in our GenAI adapted text, then it кожа in Russian, and then кожа turns leather when back-translated to English, so she thought there was a mistake, but actually there wasn't. This is an example of how, if you're not a native speaker, it's hard to really understand if the adaptation is right or wrong.

The capacity of back-and-forth adaptation and checking to produce accurate language was challenged. While back-translation is often recommended as a strategy for ensuring accurate translations, this resulted in the opposite being assumed by Minny due to her lack of familiarity with Russian and required triple-checking by her Russian-speaking teammate. In addition, this process showcased the initial accuracy of the GenAI, which was mistrusted due to its back translation into another word. While this seems to challenge the back-and-forth nature of adaptation, it also provides a case study on the potential redundancy of cyclical processes in which the initial output could have been trusted and raises questions about how to better cater to monolingual CAs (or simply those who do not speak or use the target language).

Temporality

Slowing down

CAs also challenged the assumption that AI-aided adaptation is quicker than manual translation. At the same time, one CA, Carmen, also pointed out that adaptation of multilingual health materials was only one of many competing priorities, meaning that further consideration needs to be given to how much time could or should be invested in the adaptations and

> I think working on this project having it at the same time as a lot of my school subjects and assignments kind of taught me not to be too perfectionistic. If we try to make it too good with AI, it's kind of impossible. We could just continue asking to, like, make it better, better, better. But you have to stop at a certain point. And just be more realistic about how much time you have.

Here, Carmen not only highlights the importance of balancing the time spent on adaptation tasks with her schoolwork but also unveils how much time adaptation can take, even with assistance from AI. Although this is a known issue for professional translators working in precarious professions that often require them to take on more than one job, it is also important to consider the impact of volunteer citizen adaptation on the time, energy, and well-being of CAs to avoid burnout. As Carmen suggests, moving away from perfectionism may be a potential approach for responding to these needs.

Discussion

This study explores the response-abilities of citizen adaptors in the context of multilingual health communication. Prior work has shown that translation as a profession and theoretical approach is resistant to change (Cadwell et al., 2018) and sceptical of the quality and reliability of citizen or volunteer translators. Adaptation has also been considered an inferior alternative to translation with concerns it is not trustworthy due to the use of ono-professionals, technology, and its potential to produce results with less fidelity to the source text using multimodal resources. This study has attempted to rupture some of the binary thinking that construes translation and adaptation as incongruent opposites by exploring CAs' reflections on their response-abilities to engage in adaptation with the assistance of GenAI. Our analysis suggests that CAs using GenAI to adapt multilingual health communication can respond to the need for reciprocity, biliteracy, and affective attachments, especially to their intended audience, because of their more flexible and unregulated positions. On the other hand, tricky to translate terms that require a delicate balance of not only principles for maximising translatability beyond established approaches (such as Plain English or Easy-to-read English coupled with health literacy checking software) and the need to balance CA tasks with competing tasks such as schoolwork troubled the possibility for timely and perfected adaptations. Thus, the experiences and reflections of CAs ruptured several binaries between translations and adaptation while also indicating the overlapping and fluid nature of expectations related to each practice.

In line with previous studies (Kirov & Malamin, 2022; O'Brien, 2023), (re)imagining the possibilities for citizen adaptors requires an open but careful approach to the use of Generative AI. O'Brien (2023) concludes that this also involves recognising one's vulnerabilities as the CAs did about their, at times, limited biliteracy skills, which made it challenging to identify the inclusion of different but similar language scripts or issues with back-translation. Unlike Kirov and Malamin (2022), who found that professional translators were confident that Generative AI would save time, our CAs emphasise the need to not only slow down, especially when paying attention to tricky translations, but also recognise the practical time constraints that might limit their efforts and input to consider what is 'good enough' while maintaining the safety and fidelity of their messaging. Some specific strategies for slowing down might related to the careful prompt engineering following an example such as Lo's (2023) CLEAR Framework for enhancing information literacy through prompt engineering. Another common recommendation for translators that our CAs challenged was the need to remain detached, impartial, and unemotional to effectively complete the work (Duman, 2021); instead, our CAs reiterated the motivation and response-ability that was generated through the relationality to and with their audience who they felt they did not want to let down. Therefore, we encourage NGOs

and other organisations to provide citizen adaptors with opportunities to get to know the communities and audiences they translate for through more in-depth conversations or video stories of their experiences.

These points suggest the need to further support CAs by developing specific literacy skills, such as health literacy, AI literacy, biliteracy (rather than bilingualism alone), and collaboration skills between human-to-human and human-to-non-human. These are needed for current and future public health challenges, especially those often overlooked, such as heat waves despite being the deadliest natural hazard. One promising avenue is the Minimal Languages approach developed by Goddard (2021), which builds on decades of natural semantic metalanguage research to painstakingly map the translatability of words, with more recent public health research successfully applying this approach to improve multilingual communication (Diget, 2024). Although the principles of Minimal Languages were taught as part of this research, CAs misunderstood their limited input into Generative AI, highlighting an additional opportunity for future research and for NGOs to learn about as an alternative to only Plain Language, Easy Language or Simple Language. The Minimal Languages approach also has the potential to inform glossaries and databases for a wide range of public health issues and provide simplified, translatable definitions and explanations. Building such glossaries for pandemics, health-related impacts of natural hazards such as heatwaves, and emergency departments could significantly reduce the cost and time associated with producing multilingual information during crisis points. As such, we see the potential for Generative AI to respond to the need to adapt multilingual public health messaging if specific bots or prompt engineering guidelines are developed that encourage two-way communication and feedback loops (e.g. clarifying the type of language needed and feeding on specialised glossaries). Another related response could be to consider the capacity of the audience (here, families) to respond to adapted multilingual public health messaging. Our CAs generated monolingual texts that shifted from English to Russian/Mandarin or Indonesian. However, bilingual versions of information that clearly communicate which terms are related and draw on visuals may offer the possibility of building resilience in multilingual families.

Nevertheless, the capacity for these shifts towards non-professional, Generative AI-aided adaptations requires support at the policy level. Moorkens and Guerberof Arenas (2024) suggest the notion of tiered translations as a solution, whereby the sensitivity and risk of the content are considered before engaging CAs. Therefore, NGOs could develop internal classification systems for their health information and/or redact anything deemed too sensitive. Nevertheless, long-term planning within national education systems is needed to build a pipeline of biliterate citizens capable of training from an early age in not only traditional topics of language acquisition but also specialised terminology is also needed.

Note

1. Although Haraway is often associated with posthuman thinking, she calls herself a compostist stating "I am a compostist, not a posthumanist: we are all compost, not posthuman" (Haraway, 2016, p. 101) to highlight the cyclical, interconnectedness of both the human and more-than-human as in composting.

Author contributions

Danielle H. Heinrichs, Michael Camit and Jack Tsao were involved in the conceptualisation and design of the study. Danielle H. Heinrichs, Michael Camit and Jack Tsao completed data collection and analysis, wrote the original draft manuscript, and contributed to review and editing, along with project administration. Danielle H. Heinrichs, Michael Camit and Jack Tsao provide approval for the final version to be published and agree to be accountable for all aspects of the work.

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Data availability statement

Supporting data are available from the corresponding author upon reasonable request.

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