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On the transcreation, format and actionability of healthcare translations

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Abstract: In public-health crises, members of multilingual communities must be able to access, understand, trust and act upon behaviour-change messaging. The role of translators is therefore critical, not only for the relaying of information but also in the transcreation of texts, understood as adaptation to suit the characteristics of an intended audience. Failure to use transcreation may produce messaging that is culturally inappropriate and thus ineffective. This study analyses healthcare resources created by governments in Australia with a view to identifying formatting and other visual features that would benefit from transcreation. A mixed-method approach combined numerical evaluation of four documents using the Patient Education Materials Assessment Tool (PEMAT) and a bottom-up thematic analysis of the way the same texts were discussed by 58 members of a broad range of ethnocultural and linguistic groups in Victoria, Australia. The findings point to a need to go beyond the linguistic aspects of the translation and take into account the discourse organisation, layout, images and cultural appropriateness of health messaging. The implications of applying the PEMAT criteria are not only that start texts will become more accessible and better able to facilitate understanding-based trust relations, but also that translators are well placed to participate in the transcreations that may be required in the various target languages.

Keywords: transcreation; multilingual healthcare communication; PEMAT analysis; readability scores; actionability

1. Introduction

The experience of COVID-19 in superdiverse societies such as Australia has underscored the importance of having multilingual healthcare communication that members of different communities can locate quickly, understand, trust and act upon. In many countries, communication failures have been attributed, among other things, to translations that, although accurate and done by certified professionals, were hard for the target audience to understand, not timely, or otherwise not trusted, leading to ineffective messaging (O'Brien et al., 2021; Hajek et al., 2022; AuYoung et al., 2023; Bouyzourn et al., 2023; Seale et al., 2023). Faced with numerous language demands, changing messages and severe time constraints, governments applied their existing communication policies as best they could in an exceptional pandemic situation. Standard translation practices were nevertheless challenged and were in some cases complemented by a series of alternative co-design and re-narration practices across a range of media. For example, hospital staff were video recorded explaining in their community language why they had been vaccinated, since a first-person voice by a medical professional from within the recipient's language community could gain levels of trust, understanding and actionability that were not accorded to official government communication.

In between accurate, anonymous translation of official government messaging and unofficial re-narration by an identifiable and trusted mediator, there is a range of mediation practices in which professional translators can be involved. The emerging term for those practices is 'transcreation'. There are many ways of construing the concept (see Pedersen, 2014), but here we define transcreation as the part of translating where decisions are made by considering a specific receivership rather than depending on the form of the start text. We do not see it as a set of additions to translation, since that approach unthinkingly reduces translation itself to a literalist mapping process. Transcreation thus includes interventions such as addition, omission, updating, functional adaptation, re-formatting and change of media (e.g., Taibi & Ozolins, 2016; Taibi, 2018; Lesch, 2018), all of which can be conceptualised as translation solutions (Pym, 2016) but fall short of complete re-narration by a new first person. In terms of process, transcreation can embrace "interactive tasks that entail adaptation of meaning to cultural and emotional elements and influencing people", tasks that have been found to be highly automation-resistant (Yilmaz et al., 2023). In theory, failure to use transcreation can result in messaging that is potentially culturally inappropriate and thus ineffective. That general principle nevertheless needs practical examples of such communicative failures if it is to be anything more than a conceptual pirouette coupled to a political claim to agency on the part of translators.

The purpose of this study is thus to analyse the quality of a sample of healthcare resources published by the Australian federal government and the Victorian state government, taken as practical examples of start texts and translations that may require transcreation. Given the indications that accessibility of COVID-19 information was a problem for multicultural communities (e.g., Hajek et al., 2022; Seale et al., 2023), our particular concern here is with the ways in which formatting and presentation can impact on effective communication. To assess these aspects, we use the Patient Education Materials Assessment Tool (PEMAT) (Shoemaker et al., 2014), developed specifically for the analysis of healthcare materials. We also analyse interview data in which community members react to the documents. We then consider how transcreation could help overcome some of the more negative reactions.

2. Previous research

Much of the previous research on healthcare communication has been based on readability metrics, which analyse *language* use rather than *document* use. Here we consider readability scores and how they relate to the PEMAT metric.

Readability formulas estimate how difficult a text is to read. As computational capacity has grown over the years, many weighted quantitative variables have been developed and included. Coh-Metrix, for instance, calculates numerous variables and correlates the findings with previous systems. Coh-MetrixL2 specifically assesses readability for second-language readers. Since 2022, generative AI systems have become available that can rewrite a text for a specified grade level. That means that language-level readability can be assessed with considerable sensitivity (thanks to electronic metrics) and is becoming increasingly attainable (thanks to automatic text generation – which nevertheless may require revision).

Several studies have assessed the readability of COVID-19 documents (e.g., Basch et al., 2020; García et al., 2020; Mishra & Dexter, 2020; Szmuda et al., 2020; Worrall et al., 2020; Ferguson et al., 2021). Those that incorporate readability formulas generally find that the difficulty *exceeds* the maximal sixth grade (11 to 12 years old) reading level recommended by bodies such as the American Medical Association and the US Department of Health and Human Services. Studies on resources published by Australian governments have found that the average difficulty score surpasses the recommended eighth-grade level (Mac et al., 2021; Ferguson et al., 2021). Peters et al. (2022) use readability measures including Coh-MetrixL2 to analyse a set of Australian COVID-19 factsheets. They report an average grade level of 10 and a middle-range of difficulty for L2 speakers of English (44 to 48 on the Flesch Reading Ease scale). These studies are important here because they assess the texts used for translation processes. If the original is already hard to read, any completely faithful and accurate translation is likely to be even harder for speakers of other languages, given that general health literacy in Australia tends to be lower among people whose first language is not English (Ethnic Communities' Council of Victoria 2020, p. 4).

There has been less research on the readability of COVID-19 resources for multicultural communities. Khan et al. (2020) report that most healthcare documents for ethnic minorities in Britain also exceed the recommended eighth-grade level. Less than 10% of the online COVID-19 information they looked at contained translated materials and/or graphic information that could facilitate comprehension for those with lower levels of literacy in English.

Readability scores, while useful, are restricted to *written* language content. Most public healthcare documents nevertheless include layout features and graphic material, which also influence reception. In view of this, Shoemaker et al. (2014) developed the Patient Education Materials Assessment Tool (PEMAT) specifically for healthcare materials. This tool focuses on a) understandability (whether users can process and comprehend the information) and b) actionability (whether they can clearly identify the actions they can take). It mainly assesses non-linguistic features such as the use of visual cues and aids, clarity of structure and formatting, simplicity, and clarity with respect to actions. Developed and tested in English, it has also been applied to documents in Spanish (Higashi et al., 2021) and Chinese (Zhang et al., 2022).

Caballero et al. (2020), Kruse et al. (2021) and Mac et al. (2021) have all integrated PEMAT criteria in their analyses of COVID-19 material – as also recommended by the Migrant Council of Australia (2022). All find that actionability tends to be *below* the recommended PEMAT score of at least 70%:

users struggle to identify what actions they have to take. In the United States, Higashi et al. (2021) examined 50 webpages and found that the reading ease scores were lower than the recommended level (a low reading ease score is bad) although the average PEMAT scores were a relatively high 82% (a high PEMAT score is good).

Virtually all these studies look at texts, without testing community-based reception. Yet, if the production of quality of healthcare materials involves evaluation by and consultation with the target readership (Australian Commission on Safety and Quality in Health Care, 2014), reception must also be part of the way quality is tested. Reception analysis can also highlight the cultural appropriateness of healthcare materials (Arora et al., 2012; Seale et al., 2022). The Centre for Culture Ethnicity and Health based in Melbourne, Victoria has correspondingly developed cultural-appropriateness items to add to the PEMAT checklist (Abdi et al., 2020). Interview data in Seale et al. (2022), Hajek et al. (2022) and Karidakis et al. (2022) also point to problems with cultural appropriateness and justify adding this consideration to the PEMAT metric. We therefore look at the community reception of materials, using PEMAT plus interview data on cultural appropriateness.

3. Methodology

Simplifying the previous studies, we hypothesise that high reading difficulty scores will coincide with low PEMAT scores for accessibility and actionability, and low cultural appropriateness as indicated in interviews with community stakeholders. We basically posit that an inadequately produced document will fail on multiple levels: it will be hard to read (a low reading ease score and a high grade level), hard to understand and act upon (a low PEMAT score) and culturally inappropriate (as a purely qualitative, interview-based variable).

We return to four print resources that were partly reported on in Hajek et al. (2022). The documents were originally accessed on 23 August 2021 and were selected because they are different in terms of function and register. We now assess their readability, understandability, actionability and cultural appropriateness. We use a mixed-methods approach combining numerical data on the documents with qualitative data from the interviews. Participant recruitment for the wider study took place between September and December 2021. Relevant community organisations and members were identified through personal networks as well as a COVID-19 WhatsApp group established by the Victorian government to facilitate provision of support services and information to CALD communities. Invitations to participate were sent via email to 128 community organisations and members, using a snowballing approach (see Hajek et al., 2022). Contacts were made and interviews were conducted as reported below.

The steps we undertook for this new study are as follows:

- *Readability Analysis:* Each text was copied and pasted into Microsoft Word and the Flesch-Kincaid Grade Level and Flesch Reading Ease scores were recorded.
- *PEMAT Analysis:* Two researchers independently assessed the documents by applying the PEMAT criteria for understandability and actionability. Any disagreements were discussed, and a final score was agreed upon.
- *Semi-structured interviews:* Semi-structured online interviews were conducted with 58 community leaders and members, representing a

range of geographical, ethnocultural and linguistic groups: African, Indian Subcontinent, Afghan, Pasifika, Myanmar and Arabic-speaking communities. A wide range of languages were spoken by participants across these six groups. They included languages such as Dinka, Somali and Oromo (African); Hindi, Tamil and Bengali (Indian Subcontinent); Dari and Hazaragi (Afghan); Bauan Fijian (Pasifika); Hakha Chin, Zomi and Burmese (Myanmar); and Arabic. Two Chinese-speaking frontline medical experts were also interviewed. The interviewees were not given the full PEMAT criteria or readability scores: they were simply asked for feedback on the layout, visuals, and readability of the documents – either in the original English or in an appropriate translation when available. They were also asked to provide feedback on the translation quality when applicable. Their feedback gave us qualitative data on effectiveness and appropriateness of imagery, layout and understandability. A rigorous thematic analysis enabled the identification, organisation, description, cross-data comparison and reporting of the issues that emerged (Nowell, Norris, White, & Moules, 2017; as applied in Hajek et al., 2022).

The resulting negative values are assumed to indicate the desirability of transcreation of some kind. The aim of our analysis is therefore to identify where transcreation is called for, either in the English-language documents or in the translations. Our approach is not intended to criticise the important work done by public health authorities during an unusually challenging time (particularly the case in Victoria – within a broader Australian context), but to understand better how target audiences might evaluate different styles of visual and written communication, and how transcreation could help improve future communication.

4. Results

The scores for the various tests are shown in Table 1. The "pass" scores (in green) should be above 70 for Flesch Reading Ease, below Grade 8 for Flesch-Kincaid readability, above 70 for PEMAT understandability and above 70 again for PEMAT actionability. The ranking of the documents is the same on all tests (justifying our initial hypothesis) except for document B, which does well on the Reading Ease metric but poorly on the PEMAT scores.

Table 1: Quantitative scores for four documents

Text	Flesch Reading Ease	Flesch-Kincaid Grade	PEMAT Understandability	PEMAT Actionability
A. After your Pfizer	43	10.1	31	60
B. How do I check in?	82	4.1	54	60
C. Before vaccination	62	7.9	87	100
D. Cover your cough	79	4.5	100	100

The more meaningful comparisons come from analysing the interviewees' comments on the documents. Here we present the documents in order of increasing understandability, which enables us to show the PEMAT criteria as we go.

4.1. "After your Pfizer (COMIRNATY) vaccine"

This three-page factsheet (Australian Department of Health, 2021a) gives information about the potential side effects of the vaccine and the timing of a second dose. The document presents information that is required for legal reasons – in case of serious negative side effects, a lawyer is able to say the information was made available to the recipient. It begins with many short sentences using the active voice. However, it then becomes more complex, employing technical terms that are not explained. Here is an example where we have added bold for examples of technical language and italics for scientific names for diseases and medications:

> If you experience pain at the **injection site** or fever, headaches or body aches after **vaccination**, you can take *paracetamol* or *ibuprofen*. These help to reduce some of the above **symptoms** (you do not need to take *paracetamol* or *ibuprofen* before vaccination). If there is swelling at the **injection site**, you can use a **cold compress**.
>
> Rare side effects that have been reported after *Comirnaty* are:
>
> - severe **allergic reaction** (*anaphylaxis*)
> - *myocarditis* and *pericarditis*. Most reported **cases** have been mild, **self-limiting** and recovered quickly, although longer-term follow-up of these cases is ongoing. Cases have been reported predominantly after the **second dose** and predominantly in younger males (aged < 30 years).

The reading difficulty score is very high: almost 13 years of schooling are required. The actionability score is a moderate 60 but the understandability score is a very low 31.

4.1.1. Translation quality

We invited participants to provide feedback on the translations into Hindi, Punjabi, Tamil, Arabic, Farsi, Hazaragi, Assyrian, Dinka, Oromo, Somali, Tigrinya and Burmese. Our interviewees affirmed that the difficulty of the English text was generally maintained in those languages. This suggests the translations conformed to the criterion of "accuracy" as explained in the AUSIT Code of Ethics (AUSIT, 2012, Article 5): "optimal and complete message transfer into the target language preserving the content and intent of the source message or text without omission or distortion". There was no noticeable transcreation. Many of the technical terms were simply kept in English, without explanation or transcription. The Chinese translations, for instance, mostly maintained the English syntax and did not give the Chinese version of 'Pfizer', which is commonly known as 輝瑞 (*fai seoi* in Cantonese, imitating the sound of the English name). Such problems were widely noted:

> So now the explanation … see how many English terms are used here. ...They are not understandable either in English or in the LOTE [language other than English]. So this has to be something in plain language, free of English terms or technical terms. (AfgInt33 1:04:50 – 1:05:27)[1]

> Because that word should have been explained properly in Dinka and they leave the English … and they explain Dinka and highlight the part and use the

[1] The interview material is referenced by the broad ethnocultural or linguistic group of the interviewee (Afghanistan), interview number (Int33) and the timestamps of the excerpt.

> equivalent. Because it would not be one single word but would be a description of the word in Dinka. (AfrInt43 00:34:41 – 00:35:02)

In some cases, translated expressions were not used in everyday speech:

> It is too formal. "praksha prabha" [side effects] is something I really have to get inspected by a Hindi expert. To make this understand to a common man, I would not use that word… (IndSInt17 00:48:05 – 00:48:16)

One community leader from the Indian subcontinent commented on the use of 'Comirnaty', the official name of the Pfizer vaccine:

> What is Comirnaty, what does that mean? […] I would take that other word [Comirnaty] off because that's really confusing. Nobody would use that word. (IndSInt13 00:22:23 – 00:22:39)

In Australia, COVID-19 vaccines are usually referred to by the name of their manufacturer (e.g., Pfizer, AstraZeneca, Moderna), including by government spokespeople and health experts. The choice to include the term 'Comirnaty' would probably have done little to assuage fears about the vaccine.

4.1.2. Understandability and actionability

Of the 13 applicable PEMAT criteria for understandability of print texts, our two evaluators agreed that the English-language start text fails on the nine in italics:

1. *The material makes its purpose completely evident.*
2. *The material does not include information or content that distracts from its purpose.*
3. *The material uses common, everyday language.*
4. *Medical terms are used only to familiarise audience with the terms.*
5. The material uses the active voice.
6. *Numbers appearing in the material are clear and easy to understand.*
7. The material does not expect the user to perform calculations.
8. The material breaks or "chunks" information into short sections.
9. The material's sections have informative headers.
10. *The material presents information in a logical sequence.*
11. *The material provides a summary.*
12. *The material uses visual cues to draw attention to key points.*
13. *The material uses visual aids whenever they could make content more easily understood.*

It also fails on two of the five applicable actionability criteria:

1. The material clearly identifies at least one action the user can take.
2. The material addresses the user directly when describing actions.
3. The material breaks down any action into manageable, explicit steps.
4. *The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action.*
5. *The material uses visual aids whenever they could make it easier to act on the instructions.*

The overwhelming majority of participants found the resource difficult to understand because of medical terminology such as 'SARS-CoV-2',

'myocarditis' or 'pericarditis', both in the English start text and the translations. They pointed out that the language was problematic for community members, especially those with limited formal education. An Afghan community leader had intentionally *not* shared the document with their community:

> We did not share this because the information would be confusing for the community I think, because first here is there's too much uh, too much technical terminology is used about SARS-CoV-2 and spike and Pfizer and the Comirnaty. (AfgInt35 01:01:51 – 01:02:17)

An Arabic-speaking community leader had problems with an apparently innocuous term:

> Even insomnia struggling to sleep? No, let's not use it. That's not common. Like would..., my parents would never say, "Oh, I'm suffering from insomnia". You're like, "Oh, I didn't have a great sleep last night". "I'm struggling to sleep". (AraSInt32 00:51:34 – 00:51:51)

The length of the document and the density of information were also criticised by interviewees as being inappropriate for their community members:

> Yeah, it looks like to me, too many texts and congested. No one is going to read all these things. So to be simplified only the main points should be written. (AfrInt54 00:40:44 – 00:40:56)

4.1.3. Layout

The text-heavy nature of the document and the scant use of bullet points were criticised by interviewees as making it unsuitable for transmission on social media such as WhatsApp and Facebook:

> This is very important information, but then again, if you're sharing it through the mode of communication that we normally communicate through, it is not going to be accessed. It's not as accessible. So maybe having... this information and sharing the… you know… some dot points of this on a flyer and then asking people to click the link to get further information would help. (IndSInt7 00:41:46 – 00:42:13)

In addition to shortening and re-structuring, participants stressed the need to add visual elements:

> If you could include some pictures and a bit more brightness, maybe there would be… attract people more to read through that and maybe reduce the text and put some pictures in, there might be helpful. (IndSInt24 00:32:07 – 00:32:20)

4.2. "How do I check in?"

The print resource "How do I check in?" looks simple enough. It has a question, a two-step answer and arrows and images to help the reader (See Figure 1 below). The Flesch-Kincaid score is Grade 4.101, which is quite acceptable. On the other hand, the PEMAT analysis gives just 54% for understandability and 60% for actionability – both below the desirable 70%. In this case, readability scores are not telling the whole story.

Figure 1. How do I check in? (Victorian Government, 2021)

4.2.1. Translation quality

We asked participants for feedback on the translations into Hindi, Punjabi, Urdu, Arabic, Farsi, Hazaragi, Dinka, Oromo, Somali and Burmese. The reported quality depended on the language. The Hazaragi and Hindi translations were generally well received, whereas readers in other languages noted issues with naturalness (for example, word order in the Dinka translation for "telephone number") or minor spelling and grammatical mistakes. Literalism and culturally inappropriate expressions were reported by an Oromo community member:

> Directly translates this topic… it lacks some kind of cultural conveying message to the community, it is direct translation…It lacks some kind of target-language culture… so the perceiver may be or the person who reads this information maybe understand in different ways, in different things. (AfrInt44 00:42:44 – 00:43:41)

The translation of the heading was commented on by a few interviewees. The Chinese translation was considered unidiomatic, while the Farsi and Arabic translations were criticised as not being understandable. The omission of the term COVID in the text was also mentioned by a couple of interviewees. There is also no indication of what the QR codes are for.

Interestingly, although the Hindi translation was received positively, one community leader noted that the closely related Urdu translation could have been "simplified and made more relevant". In cases where there are many varieties of a language and various generations of speakers have different kinds of contact with the language used outside of Australia, it is difficult to know what sounds "natural".

4.2.2. Understandability and actionability

Our two evaluators agreed that the English start text fails on six PEMAT understandability criteria:

- It does not make its purpose completely evident.
- The information is not presented in a logical sequence.
- There are no visual aids to make content more easily understood
- The visual aids distract from rather than reinforce the content.
- The visual aids do not have clear titles or captions.
- The illustrations are not clear and uncluttered.

It also fails on two actionability criteria:

- It does not break down any action into manageable, explicit steps.
- It uses no visual aids that could make it easier to act on instructions.

Some of these criteria were also pointed to by participants in our interviews. Feedback on the understandability of the text was mixed. Although many found it easy to follow, others noted that the document would need to be supplemented with other resources. In particular, a clearer focus was needed on *where* to get further assistance, given the technological demands and unfamiliarity of the concept of 'checking in' and associated terminology such as 'download', especially for more senior community members.

Although the inclusion of visuals was noted as a positive feature, the importance of using *relevant* visual aids was also underscored. In this case, there are attractive colours and cartoon characters covering a range of ages, races and genders, but one critical image is missing: an example of a QR code. If a reader does not know what a QR code is, this document is unlikely to be helpful. And yet the resource is intended precisely for people who are unable to check in by themselves. This was pointed out by many interviewees.

At the same time, some of the visual elements that *are* included proved to be confusing or had no communicative function. A member of an Australian Chinese organisation commented:

> Yeah, I don't like this one as much because some of the like the clouds are just distracting. What's the, I don't see the purpose of having the clouds apart from being distracting. (ChSInt45 00:34:54 – 00:35:05)

The clouds might have suggested that the information was being held online, "in the cloud". But no such reference was picked up by our interviewees.

The nuances of cultural appropriateness were underscored by a Pasifika community leader who noted that community members would have preferred photographs rather than cartoons:

> Cartoons don't really appeal to us, you know, and the animation, it's more about having a real face in there. (PasInt37 00:54:43 – 00:54:50)

The general tenor of the feedback was thus very much in line with the failed PEMAT criteria regarding the use of effective visual aids.

4.2.3. Layout

There was mixed feedback on the clarity of the layout, especially the sequencing of instructions. Some found the two numbered steps easy to understand, while others commented that the sequence could have been clearer. One interviewee noted that having the steps below one another rather than one

on each side could make the resource easier to follow. Others commented that the mixture of numbers and arrows could be confusing – bearing in mind that a major intended readership here comprises senior community members. A Somali community leader commented on the challenge this could pose for senior members:

> This one shows to where because there's an arrow coming from the person going down, so they have to follow that arrow and that arrow goes to another place again and then, you know, arrows they have to follow. You know, elders might be having a difficult. It's better to have just one, two, three something like that. But generally, the young people can. It's easy for them because they've studied well (AfrInt18 00:47:11 – 00:47:35)

A few interviewees did mention that the arrows were problematic for another reason: for many users, downloading the app (which is named as an aside with an arrow and in small font) should have come first. Figure 1 above shows that there is indeed a smiling face *between* numbers one and two (so which step is the face performing?) and that face has an arrow that goes to something that has no number. The technologically literate will understand that you may have to download an app to get from one to two. But for anyone who really needs this document and does not have the app, number one should probably have been to obtain the app.

These issues with the layout and sequencing were underscored by the PEMAT analysis: the resource failed to "present information in a logical sequence" and "break down actions into manageable, explicit steps".

Some interviewees also remarked negatively on the font size, which becomes quite small in the very place where an elderly receiver is visually invited to read it. The elderly are likely in this case to appreciate much bigger print.

One interviewee noted that removing the unnecessary visual elements and making the relevant text larger would have improved the overall resource. Another commented that a step-by-step process like a QR check-in would be better explained in audiovisual format:

> I'd actually do it as a video. I would do it as a person walking to a QR code, scanning it, having the app there, showing exactly what it looks like, because you know how many people in our community take photos, like I would still take a photo if I didn't know how to use a QR code. I still take a photo of the code as opposed to clicking on the link and getting through. And the hardest part about this …., if we're using this example, is there's a few steps in it. And so unless you know that you need to press check in and press done, you have to see it. This is this is not an effective way of showing that. You have to actually see it from start to end, actually implement, and the only way I can say that working is in a video. (AraSInt1 01:00:54 – 01:01:34)

In other words, most people need to see what a QR code looks like and what they have to do with their phone. Such things could be shown visually, without much need for linguistic information.

4.3. "Before your vaccination"

This is a six-page factsheet from the Australian Department of Health (2021b). Despite its length, it scored 100% for actionability and 87% for understandability. It was produced as an easy-to-read resource. The readability score is 6.0, requiring 7.9 years of schooling, just below the 8 years that is the recommended maximum. Effort has been put into providing information in an accessible way.

4.3.1. Translation quality

We invited participants to comment on this document as it was translated in Hindi, Tamil, Arabic, Farsi, Hazaragi, Dinka, Somali, Tigrinya and Burmese. Although the Hindi, Arabic, Somali and Burmese translations were generally well received, interviewees noted issues with the clarity of translations (Tigrinya), English words left untranslated (Dinka) and with the naturalness of the translation (Hazaragi, Farsi). A speaker of Hazaragi noted:

> This is, doesn't sound natural […] It's not very fluid […] The sequence of the words sometimes you know, it's just misplaced words. (AfgInt36 01:03:05 – 01:03:22)

4.3.2. Understandability and actionability

The document fails on two PEMAT criteria for understandability:

- Its purpose was not completely evident.
- No summary was included.

Our interviewees generally found it easy to understand, although some said it was too long, especially considering the communication channels typically used to share COVID-19 information with community members:

> Yeah, the shorter the resource, the better it is, especially given we have so much information out there… a lot of my community receives information on WhatsApp. We share it on Whatsapp. It's not, it's not possible to share this. I can share a link to this. But not many people are going to look past one or two pages. (IndSInt7 00:40:43 – 00:41:07)

4.3.3. Layout

Although this document only has 400 words, it seems quite long because it uses bullet points and mixes text with photos and drawings:

You need to tell the person doing your vaccination:

- who your doctor is
- if you see any specialist doctors.

You also need to tell them if you have:

- any health problems, such as allergies
- had any other COVID-19 vaccines
- had a reaction to other vaccines in the past, such as the flu vaccine.

Figure 2. Extract from the "Before your vaccination" factsheet (Australian Government, 2021)

The mixture of visual elements and bullet points was generally well received. Some interviewees responded positively to the diversity in the photos,

while others suggested the document could be better tailored for their community members:

> Yeah, I like the use of really simple visuals as part of this particular campaign and a really diverse set of people represented. (AraSInt1 00:58:04 – 00:58:12)

> It'd be good if we had like a [Pasifika] community leader or someone a member […] actually getting the shot. (PasInt6 00:44:05 – 00:44:11)

That said, not all participants found the visual aids necessary or effective. One commented that a photograph of an actual Medicare card would have been more effective than a cartoon. Some also noted that the layout could be improved by more visual cues such as bold font or different colours to highlight key points, as well as a dot-point summary, as also picked up in the PEMAT analysis.

4.4. "Cover your cough and sneeze"

This one-page poster was created prior to the COVID-19 pandemic as an easy-to-read resource. It scores very well for readability, requiring just 4.5 years of schooling. It also scores 100% for both understandability and actionability, making this a model PEMAT resource.

4.4.1. Translation quality

Participants commented on the translations of this document in Hindi, Tamil, Arabic, Farsi, Hazaragi, Assyrian, Dinka, Oromo, Nuer, Somali, Tigrinya and Zomi. The translation quality was generally considered good, although some participants mentioned spelling mistakes (Tigrinya), literalist translation and the retention of unfamiliar and untranslated English words (Zomi):

> And you know, the number four, he or she reviews paper towel. And some parents [do] not know what is "paper towel" and then "dryer". (MyaInt19 00:44:46 – 00:45:05)

4.4.2. Understandability and actionability

Most of the interviewees found the document easy to understand, and the language was generally accessible. One participant noted that the instruction "dry thoroughly with a disposable paper towel" could have been simplified.

4.4.3. Layout

The first two instructions are as follows, with the important messages in bold, capitals and one word each:

Figure 3. Extract from the "Cover your cough and sneeze" poster (State of Victoria, 2018)

Participants generally found this layout easy to follow. They commented that the colourful images were useful, making the message accessible even to those who had limited print literacy:

> You can walk past and you can understand it straight away rather than having to stop and read the fine text. (ChSInt45 00:34:33 – 00:34:38)

There was nevertheless mixed feedback on the appropriateness of cartoon drawings, once again. One Arabic-speaking leader remarked that community members would prefer photographs:

> But usually, you know, for community members, they prefer something it should be, you know, like a true photo. (AraSInt20 01:12:34 – 01:12:40)

5. Discussion 1: The lack of testing

Our findings show that documents to be translated are sometimes linguistically complex, concurring with previous research (e.g., Basch et al., 2020; García et al., 2020; Mishra & Dexter, 2020; Szmuda et al., 2020; Worrall et al., 2020; Ferguson et al., 2021; Khan et al., 2020). Accurate translations that do not involve transcreation can therefore be hard to understand for multicultural communities. Further, the shortcomings picked up through the PEMAT criteria almost always corresponded to problems commented on by our interviewees, who had not been given the full PEMAT criteria.

Vaccination messaging is a particularly crucial case of behaviour-change communication. The vaccines are voluntary, since they entail risks, so a critical aim of the communication must be to win the *trust* of the reader. If there is no trust, people will not accept the vaccines. One could perhaps argue that the first of our documents, "After your Pfizer (COMIRNATY) vaccine", necessarily comes *after* the reader has decided to trust the vaccination message, so there is no need to worry about our criteria. Trust, however, is a social phenomenon, since we tend to trust people who are trusted by those around us. If difficult language becomes a scare factor and leads to distrust ("Why didn't you tell me this prior to the jab?"), the effects can ripple through the community (cf. Pym & Hu, 2022). Trust comes both before and after the specific action sought by the behaviour-change communication. And then, if the vaccine information document were clearer, the action at stake would be to get the booster jabs, to encourage others to do so and to adopt reasoned caution with respect to side effects. The document does little to make such actions clear.

As the documents gain better scores on the readability metrics and PEMAT criteria, they also fare better among our interviewees. More thought has clearly been put into their design. As a general tendency, the simpler the language, the better the translations and the greater the actionability. The clear exception is the deceptively simple resource "How do I check in?", which makes fundamental errors with respect to understandability and actionability. Is that document worth trying to save through transcreation? It would require at least the following PEMAT-related interventions:

- Check everyday language
- Remove distracting images
- Add explanations and images where necessary
- Change the order of elements to suit particular groups of receivers
- Give advice on cultural and age appropriateness.

Here we step back and ask why those potential solutions are missing. What went wrong? Clearly the documents should have been *tested* on a sample of targeted users prior to being released. In fact, when we invited community representatives to comment on these documents, we were doing something like the testing that should have been done before the release of the translations. Of course, corners are likely to be cut in situations of extreme urgency, as Victoria in particular experienced during the pandemic, when there are also numerous languages to work with and testing is time-consuming, laborious and possibly expensive. That is why, for instance, the one English-language text could be assumed appropriate to all cultures and cartoons are used instead of culturally varied photos: they are cheaper, quicker and avoid issues of privacy. Those decisions make sense in an economy of time. Checks are thus skipped, and the result might be a document that is unable to address the problem properly.

For most of the shortcomings we have been detailing, causes are to be sought not particularly among authors or literalist translators, but in the design of workflows for multilingual communication. At the beginning of the pandemic, workflows ensued from the official policy for accurate translations. In the case of Victoria, where these documents were used, that policy can be summarised as follows: translation is needed "where essential information needs to be communicated to inform decision making" and translators and interpreters must be certified by the national accreditation authority (Victoria, Department of Premier and Cabinet, 2019, pp. 7, 10). The need to employ certified professionals in turn implies that those translators must follow the code of ethics that is part and parcel of their certification and professional practice: they will translate accurately what is in the text and, as noted, they will focus on message transfer and not "engage in other tasks such as advocacy, guidance or advice" (AUSIT, 2012, Articles 5 and 6). In these documents, translators have tended towards literalism, a strategy perhaps reinforced by the fact that the originals look like descriptive medical texts (cf. Jensen, 2013, p. 255) when they are in fact behaviour-change communications. That is, translators have been unable or reluctant to take on the risks of transcreation.

The point to make here is that, when urgency dictates that full-blown testing is not feasible, one source of informed in-culture advice is readily available in the figure of the translator, who could point to the need for transcreation if such an act did not transgress translation policy and the official code of ethics. This argument can be traced back to Holz-Mänttäri (1984), who insisted that translators are experts in intercultural communication, working alongside experts in other fields. The claim has been picked up in various forms. Taibi (2018, p. 20) notes that translators should be able to "determine the most appropriate form of translation or transcreation in each situation". An extended argument is advanced by Taibi and Ozolins (2016, p. 49):

> And here emerges the necessity for the community translator to be proactive in advising text producers on *the suitability of texts and of medium of communication*. In other words, the community translator will at times need to *act as a cultural or community advisor*, especially in those situations where no other professionals or organizations are able to perform this role. Rather than waste time and resources on a translation that would be inaccessible or inappropriate, it would be more useful to advise the relevant authorities or parties of alternative ways to communicate. (Italics ours)

We hope to have provided practical examples of where this should have happened.

6. Discussion 2: An interface with marketing

We close with a brief comparison with a case where, following the immediate, unexpected pressure of a pandemic that required governments' urgent and immediate response, the constraints of time, budget and official policy were then visibly relaxed. The *Better Practice Guide for Multicultural Communications* (Victorian Government, 2023) encapsulates many of the positive lessons learned in Victoria through the experience of COVID, offering a virtual "do it yourself" course for multicultural organisations that want to produce effective community messaging. Intriguingly, the title of the publication refers to "better practice", without saying what it is better than. It could be an expression of humility (we do not presume to have "the best" practice). But it might also be read as seeking a practice that is better than the official translations previously produced by government departments in Australia. And that better practice would seem to welcome many transcreative elements.

One of the showcase examples presented in the guide is from a campaign called "Keep your family safe". Like the documents we have been considering here, it concerns vaccination. Figure 4 below shows the resource in Arabic and Chinese (Traditional), two of 14 different versions (Arabic, Assyrian, Bosnian, Chaldean, Chinese, Farsi, Hindi, Karen, Nepali, Nuer, Punjabi, Turkish, Urdu, Vietnamese) and with eleven different photographs. In this case, the messaging has been adapted to address the groups that most distrusted vaccination information in Australia: they tend to be males aged between 18 and 25 who have lower education levels and speak a language other than English at home (Pickles et al., 2021). We thus have younger men prominently depicted in the messaging in Arabic. In the Chinese community, on the other hand, the basis for non-vaccination is possibly quite different, as the very different photo would suggest.

In this case, some significant testing seems to have been done: "Market research indicated that multicultural communities would be more receptive to public health advice if it was framed as being a way to keep their family and broader community safe from COVID" (Victorian Government 2023, p. 26). We thus find images of mixed generations and the keywords "safe" and "family", repeated in all the slogans. The people are smiling; the message is positive. There is no further text: the images are left to speak to emotions, with some success.[2] The role of straight, accurate language translation is reduced.

Can translators be called upon to do all that? Probably not. But translation services are certainly being diversified in that direction. At least two of Victoria's main translation companies, Ethnolink and The LOTE Agency, now offer "multicultural research" to help tailor information for specific target groups. We also note that only about a third of the graduates trained as translators find long-term work as translators. Some find jobs in areas where their skills are used in conjunction with more creative forms of communication (Hao & Pym, 2023).

[2] We read as a welcome positive outcome that this campaign "successfully reduced average time-to-test in targeted areas" (Victorian Government, 2023, p. 26).

Figure 4. Extracts in Arabic and Chinese from the "Keep your family safe" brochure (reproduced in Victorian Government, 2023)

7. Conclusions for future transcreations

Our general point is that behaviour-change communication concerns more than readability scores and accurate translation. There are whole dimensions of discourse organisation and images that need to be considered in assessments of understandability, actionability and cultural appropriateness. We have explored a range of examples, going from complete indifference to certain text features right through to the emotive use of images, where translation occupies a secondary place. Along the way, we have seen problems with cultural appropriateness, including the well-meaning but potentially negative interpretation of cartoon figures. So, what is to be done?

As indicated, possible solutions lie in modifications of the workflow by which translations are produced. In all our examples, it seems the original has been produced in English and then each translation has come in as a later add-on, undoubtedly and understandably in a context of significant time and social pressure. In multilingual companies, for instance, current localisation models

insist that translation be incorporated into the process from the beginning, such that the original document leaves placeholders for the elements that must be adapted for each readership (Pym, 2023, 160-164). A clear example would be the choice of photographs in the "Keep your family safe" campaign, although perhaps not the slogans (the Arabic and Chinese translations are fairly literalist). More generally, that kind of planning seems not to happen in healthcare communication in multilingual communities (Crezee & Soon, 2023). In part, this is understandable. In emergency situations such as the peak of the COVID-19 pandemic, no one can insist that full professional marketing surveys be carried out prior to every public document; no one can require that every language version be tested on prospective users prior to release. When urgency is a factor, such measures can become impractical. Yet with post-COVID hindsight, one might now usefully insist that the basic PEMAT criteria for formatting, accessibility and sequencing should be observed when producing healthcare documents. Any undue haste that skips those basic criteria may ultimately be counterproductive. Information sheets on the possible negative effects of the vaccine "After your Pfizer (COMIRNATY) vaccine" (the first of our examples above) not only risk having the information misunderstood or not relayed to the community but might also erode trust relations.

As noted by various scholars, translators should be able to note problems concerning the cultural appropriateness of messaging (e.g., Taibi & Ozolins, 2016; Taibi, 2018; Crezee & Wong Soon, 2023). Of course, any community representative could also give feedback, but translators tend to be close to the background communication patterns. Further, they are trusted as translators, so they might also be trusted as cultural informants. And then, when there are features that require modifications beyond the constraints of accurate linguistic translation, translators should be encouraged to at least make proposals as to the kinds of transcreation required. That is, translators should be invited to do more than translate; and they should consequently be trained to do more than translate. If that means going beyond the official codes of ethics with respect to accuracy (adding or deleting information) and role boundaries (giving advice on cultural appropriateness), then the codes could be considered non-applicable in those cases.

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