Translanguaging in healthcare websites: Implications for language policy and social cohesion

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Abstract: This study investigates the accessibility of online hospital information for increasingly diverse multilingual populations in Auckland, New Zealand and Hiroshima, Japan. Prior to Covid-19, the number of migrants and international tourists have been steadily rising in these cities, and language support for e-health information remains inconsistent across public health institutions. Few studies (e.g., Gallant et al., 2010) have examined the virtual linguistic landscapes of health care institutions. Our study introduces a framework for analysing the "translanguaging" (Gorter & Cenoz, 2015) environment of public service websites based on three criteria: (a) visual hierarchy (Kress & van Leeuwen, 2006; Scollon & Scollon, 2003), (b) hypertextuality (Adami, 2013: Lemke, 2002), and (c) multilingualism (Backhaus, 2007; Reh, 2004; Sebba, 2012). The decision to integrate languages other than the national de facto language(s) within the same webpage or separate as a translated website raises the issue of social cohesiveness within rapidly changing globalised communities.

Key words: public service, healthcare, translanguaging, virtual linguistic landscape, language policy, New Zealand, Japan

1. Introduction

Prior to the arrival of Covid-19, the rise of global migration and tourism impacted the healthcare industry as demand for its services intensified. Healthcare became a commodity, driven by neoliberalist ideologies (Bell & Green, 2016; McGregor, 2001; Mooney, 2012) and public access to healthcare services has become less egalitarian and more diversified much like the populations they serve. Limited access to healthcare resources (e.g., information, staffing issues, bed shortages, equipment updates) reflect the problems of an increasingly commodified health care industry. Our study focuses on the online health care environment and the issue of whether people have access to their preferred language in these public service websites. Health care institutions need to communicate information to a multilingual general public; as a result, the primary question that is addressed in this study is to discern the extent to which hospitals provide online multilingual support. This study

examines the multilingual services of a virtual linguistic landscape (Ivkovic & Lotherington, 2009) in which the website serves a physical institution and includes hypertext links for specific target languages. An absence of language support in these hospital websites can create a "digital divide" (Morey, 2007; Rains, 2008) and serve to marginalise a growing population of society. Research surveying the linguistic landscape of hospital websites may thus inform public language policies that aim to improve e-health access (Hult, 2018; Shohamy, 2015).

1.1 Linguistic landscapes in the healthcare industry

Since its origins in the analysis of public city signage (Backhaus, 2007; Cenoz & Gorter, 2006; Landry & Bourhis, 1997) research on linguistic landscapes has expanded in scope to investigate how semiotic spaces in specific contexts reflect broader issues of identity and authority (e.g., Blackwood et al., 2016; Blommaert, 2013; Shohamy & Gorter, 2009). These examinations of public language use reveal tensions between the status quo and the needs of emerging communities. Research on the linguistic landscapes of the healthcare industry, or more specifically hospital settings, is particularly limited. Schuster's (2012) study, for example, examined 451 signs at a public hospital in Jerusalem where 55% of the visitors are from minority language groups. Although budget constraints were cited by hospital management, the author reported a lack of awareness of language accessibility issues with an assumption that visitors would be capable of understanding signage in the country's official language. The inconsistencies in translations, insufficient locational placement of multilingual signage, and lack of pictograms served to disengage visitors from any information posted on hospital signage. Schuster suggested that "the improvement in the accessibility of signs must be viewed as part of an overall language management change" (p.322). A follow-up study by Schuster, Elroy and Elmakais (2017) expanded the research scope to include 10 hospitals and an analysis of 2,302 signs. Even though Arabic is an official language and Russian speakers comprise 17% of the population, the authors reported that 60% of the signage was in Hebrew only. The authors indicated that varying organisational levels (i.e., hospital administration, staff within each departmental ward, and external organisations) were responsible for the content in hospital signs. When signage was in the hands of individuals who were distanced from higher administration positions, the signs became more monolingual (e.g., warning signs indicating slippery floors). These studies suggest that having a language policy in place may be insufficient as administrative, resourcing and attitudinal factors intersect with any perceived need to provide multilingual signage. The challenge of ensuring language accessibility appears to be a collective effort

in which responsibility is shared and communicated between various levels of hospital administration.

Few studies have examined the online environment in health care institutions. Gallant, Irizarry, Boone, and Ruiz-Gordon's (2010) study examined the Spanish language website content in US hospitals situated in primarily Hispanic communities. The authors reported that, of the 121 hospitals observed, 44.6% did not contain any Spanish on their websites, 30.6% contained a partial translation of some web pages, and 9.9% included mirrored translations of website content. This implies that a barrier, or a digital divide exists, with the public's equal access to e-health information and services. Other forms of language assistance (i.e., call translation services, translation application link, Spanish health info link) were also visible but its presence in a minority of hospitals broadly reflects each hospital's challenges in addressing the language needs of its culturally diverse communities. Both the offline and online studies on the linguistic landscapes of hospital environments draw attention to the issue of language accessibility, which has been defined as "the degree to which a product, service or environment is available to speakers of minority languages" (Schuster et al., 2017, p.25). As urban centres have become more linguistically and ethnically diverse, our study focuses on the needs of these speakers and their ability to access health information online. An analysis of the linguistic landscape of hospital websites can also reveal the types of social practices and organisational ideologies that lie hidden behind the text and images on a webpage.

1.2 Research methods in virtual linguistic landscapes

Considering the diversity of research aims and contexts within the study of linguistic landscapes, scholars have proposed various frameworks for analysing public language data (e.g., Backhaus, 2007; Barni & Bagna, 2015) and for cyber landscapes (e.g., Adami, 2013; Androutsopolous, 2014; Ivkovic & Lotherington, 2009; Kelly-Holmes, 2015). As our specific focus is on the presence or absence of multilingualism in public service websites, we have identified three primary criteria for our analysis: (a) multilingualism, (b) visual hierarchy, and (c) hypertextuality.

Multilingualism

Earlier research on multilingual public signage (e.g., Backhaus, 2007; Cenoz & Gorter, 2006) initially identified differences between signs that were monolingual or multilingual and analysed the semantic relationship between the languages on display. Three categories have been used in previous studies to describe the language content relationship between

two or more text versions.

1. Equivalent texts (Sebba, 2012): the language translations are near exact or in close approximation in terms of language content (see also Backhaus's (2007) homophonic and Reh's (2004) duplicating)

2. Complementary texts (Reh, 2004): the language versions provide different content but are complementary to each other (see also Backhaus's (2007) polyphonic and Sebba's (2012) disjoint texts)

3. Overlapping texts (Sebba, 2007): the language versions provide some of the same content but also some different content (see also Reh's (2004) fragmentary/ overlapping and Backhaus's (2007) mixed texts)

Visual hierarchy

Online written language is not simply text on a screen. It has been spatially organised in such a way to convey meaning. Visual hierarchy, in our study, refers to the way users show preferences for how text and spaces are arranged in a digital format. Prior research on analysing discourse (Kress & van Leeuwen, 2006; Scollon & Scollon, 2003) has identified how the positioning (i.e., top, left, right), size, colour, textual enhancements (e.g., underline, boldface, italics) reveal a hierarchy of code preferences. In online multilingual discourse, intentional or inadvertent decisions to display text reveal a visual pecking order that conveys powerful messages about the status of particular language groups. Non-linguistic elements (e.g., logos, images, icons) may also signal linguistic and cultural preferences.

Hypertextuality

Interactivity is one of the key features of an online environment since the functionality of links enable users access to a network of other texts (Adami, 2013; Lemke, 2002). Users thus have the option of going beyond the immediate webpage through selecting a menu option, clicking on webpage links, hovering over text or images with a cursor, or using search fields to find specific information. Large public service websites may contain thousands of interlinked webpages; therefore, online information is only useful if the person can find it. Users may encounter difficulties navigating from the home page to the desired information hyperlinked elsewhere. Language accessibility is therefore not just a simple issue of providing language support (e.g., call interpreter services), but is also a matter

of assisting website visitors with intuitively locating this information nested within the hospital's web browser.

Translanguaging, (Gorter & Cenoz, 2015; Pennycook, 2017), does not simply refer to the presence of separate identifiable languages but more comprehensively as a holistic combination of various linguistic and non-linguistic elements. This suggests that a collection of individual signs or webpages could be analysed on their own but from a broader perspective, they convey a collective message about what is said and for whom. Our investigation into the language accessibility of hospital webpages thus combines a micro-analysis of their visual hierarchy, hypertextuality and semantic relationship between multiple languages with a macro-interpretation of how these various signs and modalities shape the environment of each institutional website.

2. Research context and sites

The two research contexts, Auckland, New Zealand and Hiroshima, Japan have relatively similar populations with current estimates approximating 1.5 million and 1.2 million respectively. A major difference between the two cities is the percentage of residents born overseas reflected by Auckland's 39.1% (Statistics New Zealand, 2014a) and Hiroshima's 1.4% (Hiroshima City, 2018). Auckland's ethnic diversity, however, represents a much broader mix of 59.3% Europeans, 23.1% Asians, 14.6% Pasifika and 10.7% Māori (Statistics New Zealand, 2014b), with Samoan being the next most common spoken language after English (Statistics New Zealand, 2014b). In contrast, Hiroshima's primary ethnic groups are predominantly from Asian countries (i.e., Korea, China, Philippines and Vietnam) with Korean as the most widely spoken language after Japanese.

Differences between each country's healthcare system are reflected in the number of hospitals in each city. In Auckland, hospitals, specialist clinics, and other facilities typically share one website under the management of a District Health Board (DHB). Within the three DHBs in the Auckland region, four primary websites serve approximately seven main hospitals and eight specialist health clinics and surgery centres. In Hiroshima, residents can access one of 13 general (i.e., 100 beds or more) or 24 regular (20 beds or more) public hospitals, each with their own website.

In our previous study (Takagaki & Ishii, 2019), we identified a lack of accessibility to languages other than the national de facto language of Japanese in Hiroshima's hospitals (i.e., 6 out 37 hospitals contained a language other than Japanese). The current study investigates the four Auckland regional healthcare websites and six Hiroshima-based

hospital websites in further detail to uncover the extent to which language is accessible within their virtual linguistic landscapes.

2.1 Data coding and analysis

This study is a bottom-up analysis of a top-down constructed website. In other words, we are inquiring into how hospital websites convey health information from the perspective of a website visitor needing assistance (bottom-up) in order to further understand wider language accessibility issues that have been intentionally or unintentionally manifested by its website creators (top-down). Our study's research methodology adapts the approaches used from previous research that aimed to document the visual hierarchy and multilingual nature of publicly visible signage. Table 1 below shows how our study aims to examine individual signs (e.g., institution name, headings, text, etc.) that may be represented in one or more languages (Criterion 1: Multilingualism). If other languages are present, the position, size, colour and other visual enhancements may indicate the status of each language (Criterion 2: Visual Hierarchy). These signs do not exist in isolation but may be hyperlinked to other webpages (Criterion 3: Hypertextuality) that provide further information for the website user.

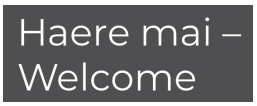
Table 1: Three criteria for analysing signs in hospital websites

SIGN	Criterion 1: **MULTILINGUALISM**	Criterion 2: **VISUAL HIERARCHY**	Criterion 3: **HYPERTEXTUALITY**
Language content	Are there other languages visible? What is the semantic relationship (equivalent, complementary, overlapping) between the texts?	If other languages are visible, what is their visual relationship (position, size, colour, textual enhancement, images)?	Is it hyperlinked? Is the information hyperlinked far from the home page (e.g., 3 or 4 clicks away) ?

The home page of one hospital website will be used as an example of how the signs were analysed using the three criteria (see Table 2 below). The institution name (sign 1) is displayed in two languages on the hospital's main home page, thus English and Māori are identified as the visible languages under criterion 1 (Multilingualism). A complementary semantic relationship exists as the Māori name for the institution has a symbolic meaning. In general, if the webpage did not provide a translation, then a native speaker of the language was consulted to confirm whether the texts were equivalent, complementary or overlapping. Moving on to criterion 2 (Visual Hierarchy), the relationship between the two languages in

terms of position, size, colour, textual enhancement and imagery was noted. This enabled us to determine if the status of a language was reflected in its visual presentation. Finally, for criterion 3, the institution name is not hyperlinked. This criterion may not seem relevant, however in nested webpages that are three to four clicks away from the home page, the broader issue of accessibility to e-health information becomes important.

Table 2: Application of the three criteria to signs on one hospital webpage

SIGN	Criterion 1: **MULTILINGUALISM**	Criterion 2: **VISUAL HIERARCHY**	Criterion 3: **HYPERTEXTUALITY**
Sign 1 --- Institution name 	Māori and English Semantic relationship: Complementary (*Te Toka Tumai* has a symbolic meaning - rock standing firm in the sea)	Position: English on top Size: English is Colour: same Enhanced: English is boldfaced, Māori is italicised Images: institution icon	Not hyperlinked
Sign 2 --- Menu bar 	English		Hyperlinked
Sign 3 --- Welcome message 	Māori and English Semantic relationship: Equivalent	Position: Māori on top Size: same Colour: same Enhanced: same Images: none	Not hyperlinked
Sign 4 --- Heading 	Māori		Not hyperlinked
Sign 5 --- Search bar 	English		Hyperlinked

In Table 2 above, signs that contained more than one language (signs 1 and 3), had languages other than the country's dominant spoken language (sign 4) or hyperlinks to information that might potentially include e-health information in other languages (signs 2 and 5) were included in our analysis. Selected hyperlinks (hospital services, on-site services,

patients and visitors, visitor information, etc.) related to language support services (health information in specific languages, translation and interpretation) were investigated. With the vast number of webpages that exist in a single hospital website, analyses of other links (for health professionals, careers, research, etc.) were not included in this study. A second type of hyperlink was separately explored by typing in keywords (e.g., translation, interpreter, Samoan) into the homepage's search field. If a patient or visitor needed help in a language other than ones represented on the website, we wanted to find out if using the search bar would lead to information about the hospital's language support services. In summary, we used a targeted approach starting from the home page, exploring selected menu links and using the search field to gain an insight into website visitors' access to information in other languages. Our methodological approach not only examines each individual sign but aims to look at the amalgamative effect of these signs and how they contribute to the overall linguistic landscape of hospital websites.

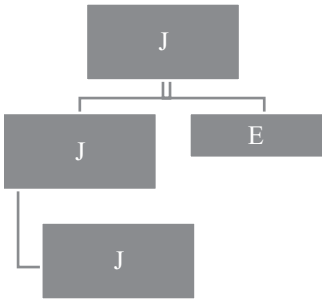
3. Findings

Although New Zealand English was omnipresent across all Auckland regional healthcare websites, the home pages often contained headings or hyperlinks in Māori and Polynesian languages thus recognising the country's deep cultural and historical ties (see examples in Table 2 above). Te reo Māori was sometimes placed above or before English headings expressing a visual hierarchy and acknowledgment of New Zealand's indigenous language. Texts in other languages were not always translations of English content but were complementary in serving its diverse linguistic communities. Familiar words or phrases that the general population have been exposed to in everyday contexts were either translated or non-translated (e.g., *Haere mai* or Welcome); however, many non-translated phrases were symbolic in meaning (e.g., Auckland District Health Board, *Te Toka Tumai* = Rock standing firm in the sea) or represented names of departments (e.g., *Te Whare Karaka*, *Whenua Pupuke*, *He Kamaka Waiora*). Other minority languages (e.g., Mandarin, Hindi) tended to be buried deeper within the institutional network of webpage hyperlinks. As a result, the patchwork of languages in these websites reflected a language hierarchy with English in tier 1, Māori and Polynesian languages in tier 2 and other minority languages in tier 3. Visitors to the New Zealand's hospitals, who may not have proficiency in English may be aware of Ezispeak, (Ministry of Business, Innovation & Employment, 2020), a phone interpreting service that provides access to over 180+ languages, 24 hours a day, 7 days a week. Since visitors may not know who to call or contact when in need of language assistance, we inquired into the accessibility of language information. We found, in general,

typing in the words “translator” or “interpreter” in the search bar was more likely to lead to useful contact numbers rather than simply typing in the names of specific languages; however, when misspellings of words were inputted, no search results were found.

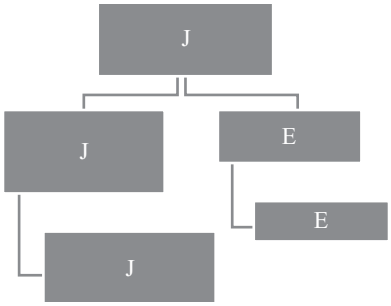
The Hiroshima hospital websites, in contrast, displayed minimal instances of languages other than Japanese on the same web page. The websites were predominantly in Japanese with very few references to English (e.g., TEL = telephone numbers.) that appeared to represent pictograms that are widely understood by the general public. Translations of Japanese language content were typically provided through a hyperlink to a separate English language webpage. Two types of mirrored websites were found as shown in Figures 1 and 2 below.

Figure 1: Partial and omitted translation



In Figure 1 above, Japanese language content (J), is presented on three hyperlinked webpages in three levels whereas the translated content not only appears in a single English webpage (E), but is both a partial and omitted translation. In other words, much of the content has been abbreviated or completely absent in the English translation. This is similar to the second type of mirrored webpages as seen in Figure 2 below.

Figure 2: Partial translation



In Figure 2, the hyperlinked English websites provide only a partial translation and do not include the entirety of the mirrored Japanese website content. The Japanese language content appears across three levels but is translated into English in two webpages. What is more important to point out is the fact that English is the only other visible language. Given the slow and steady rise of migrants and tourists from neighbouring Pacific nations, it is unclear which language communities this information serves. In terms of the three criteria that we set out to examine, Table 3 below provides a summary of our study's findings.

Table 3: Multilingualism, visual hierarchy and hypertextuality in Auckland and Hiroshima healthcare websites

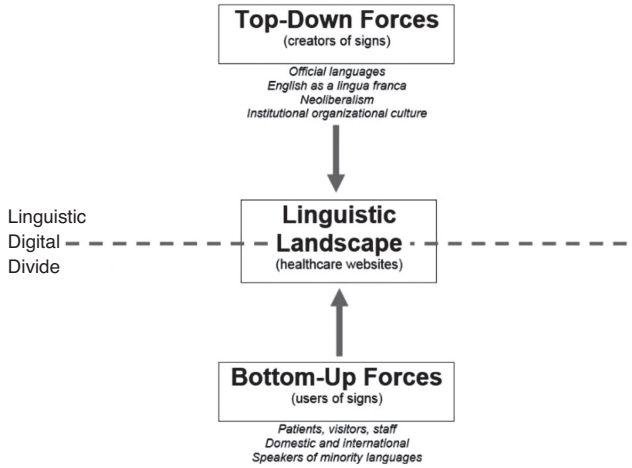
	Auckland hospitals	Hiroshima hospitals
Multilingualism Question: What languages are represented in the website? How many are there?	English, Māori, Polynesian languages, and other languages with links to resources in other languages.The number varies from 3-100.	Japanese and English
Visual Hierarchy If more than one language is presented on the webpage, is there a visual hierarchy? How would you describe this hierarchy?	The content is primarily in English; however, specific information (welcome message, references to Māori or Polynesian links or departments) show the other language first, on top, or alone. Each hospital website shows individual variation in how languages are presented hierarchically with each other.	In general, no visual hierarchy exists as English, the only other language, is on a mirrored website. The Japanese website contains some borrowed English words as a replacement for some Japanese words (e.g., Tel).
Hypertextuality Question: Is it hard to find information in another language?	One website uses a mirrored link to access all hospital information in another language. The other websites display a translanguaging of English, Māori and Polynesian languages to convey information where necessary. Links to other languages are much harder to access, more randomly distributed, and are not easily found through search keywords. Broken links or confusing search results were not helpful.	It may be challenging to find information if your first language is not Japanese or English. Even if English is your first language information, the mirrored link contains limited information (i.e., partial not full translations).

4. Discussion

Translanguaging (Gorter & Cenoz, 2015), refers to the collective message portrayed by the inclusion of language(s), images and other non-linguistic signs. Providing hospital content information in multiple languages acknowledges the diversity of people, culture and languages that exist in local communities. With each healthcare website, a decision is made whether to include a separate hyperlink to a language translation or provide content in a patchwork of various languages on the same webpage. Each has their own advantages and limitations. Hyperlinks to translated web content may enable visitors to access more information in their own preferred language; however, as in the case of Hiroshima hospital websites, visitors may not have access to equivalent texts (Sebba, 2012) and be faced with non-equivalent texts (Schuster, 2012), in which incorrect, partial or omitted translations can be found. In contrast, the presence of multiple languages on a webpage fosters a sense of social and linguistic inclusiveness but as in the case of the Auckland healthcare websites, a hierarchy of texts appears with central and peripheral languages sharing the same online space. Although healthcare websites provide information for the general public, we argue that a social responsibility exists beyond serving patients, families and other visitors. Translanguaging in public service websites has an impact on strengthening national identity, promoting mutual understanding between cultural groups, and driving changes that foster social cohesiveness (Spoonley et al., 2005). Our case examples illustrate the challenges that lie ahead for public service institutions to convey online content that is both functionally accessible and socially inclusive.

Our focus on translanguaging in healthcare websites has drawn our attention to Backhaus's (2007) notion that linguistic landscapes can be divided into "by whom" and "for whom". Website content is continually being shaped by the needs of both top down forces (by whom) and bottom up forces (for whom) (see Figure 3 below).

Figure 3: Top down and bottom up forces in healthcare websites



Language is a historically situated practice (Pavlenko & Mullen, 2015) and it is not surprising that both the Auckland and Hiroshima websites are influenced by its official languages and historical ties with other nations. As migrant populations with languages other than the official languages continue to rise, our concern is that a [linguistic] digital divide (Morey, 2007; Rains, 2008) may exist between the creators and users of online content in hospital websites. Our study thus reiterates Gallant et al.'s (2010) query whether or not healthcare institutions provide adequate and accessible healthcare information for the communities that they serve. Multilingual content is not always created for patients and visitors but is, in part, predetermined by top down forces that reflect scales of authority including national policies and institutional practices.

Each of the healthcare providers in our study had control over how their websites look, what languages were used, and how visitors have access to information. Depending on where you live, visitors may have unequal access to a preferred language. A question then arises, "Is a national language policy for public service websites necessary?" No evidence could be found on any of the healthcare websites of a clear and substantive language policy; however, considering all the challenges that healthcare institutions face, especially in the current Covid-19 environment, a national language policy is not likely a priority. One of Berezkina's (2018) informants noted in her study that, "language is a costly and complicating factor" (p. 65). The New Zealand government has recently announced the disestablishment of its independently governed District Health Board (DHB) organisational structure. Instituting a nationally regulated health system may, in the future, lead to the development of a language policy that provides patients and visitors equitable access to their

preferred languages.

5. Conclusion

Language accessibility to online healthcare information is more than just providing translations of text into other languages. This study aimed to highlight the issues surrounding how national languages coexist with other minority languages in a public service website. Translanguaging is not a simple matter of including information in multiple languages. How it is conveyed and accessed in an online linguistic landscape impacts perceptions of social inclusiveness and a potential need for a standardised language policy. As communities and nations have changed, it is clear that the health care institutions in our study have shown an emerging awareness of the need to improve the language accessibility of their website content for the diverse communities that they serve. We hope that multilingualism does not reside on the periphery (Pietikäinen & Kelly-Holmes, 2013), but is part of a unified, socially inclusive approach to providing healthcare information.

Although this study examined the multilingual content, visual hierarchy and hypertextuality of hospital websites, this methodological approach was limited by its sole focus on online data. Virtual ethnographic methods (Kelly-Holmes, 2015; Mdukula, 2020) that may have included interviews and observations with patients, healthcare staff and administrators would have provided a deeper insight into the issues raised in our study. Our investigation was initiated prior to the Covid-19 pandemic and we understand that the priority of hospitals was understandably focused on saving lives, and issues related to translanguaging would not be at the forefront of their concerns.

Hospitals and healthcare in general are emotionally stressful environments. Providing information in a preferred language not only serves a semantic purpose of conveying accurate information, but also imparts a welcoming feeling and reduces tension (Schuster, 2012). As a public service, it seems socially responsible for our healthcare institutions to enact changes that recognise and serve the needs of a rapidly changing global society.

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