

Language Translation During Disaster: A Comparative Analysis of Five National Approaches

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Abstract

Clear, timely and accurate information is recognised as strategically and operationally critical to disaster response effectiveness. Increasing cultural and linguistic diversity across the globe creates a demand for information to be available in multiple languages. This signifies a need for language translation to be a key element of disaster management. However, language translation is an underdeveloped tool in disaster management and has been a neglected topic in research. We analyse the disaster response approaches for five nations—Ireland, the UK, New Zealand, Japan and the USA—to determine the degree to which language translation is utilised. Taking the right to information as a starting point, we use a 4-A, rights-based analytic framework. Each approach is inspected for standards of Availability, Accessibility, Acceptability and Adaptability. The US has the strongest adherence to these standards while the other approaches are less developed. We suggest several principles for effective practice in providing language access services.

Keywords: translation, interpreting, disasters, 4-A framework, linguistic diversity

Introduction

The strategic and operational importance of communications is recognised widely as central to emergency and disaster management effectiveness (Seeger, 2006; Fischer, 2008; World Health Organisation, 2012; InfoAsAid, 2012; Santos-Hernández and Morrow, 2013; Altay and Labonte, 2014). The importance of improving communication was repeatedly stressed at the first conference on implementing the Sendai Framework for Disaster Risk Reduction 2015–2030 (Aitsi-Selmi et al., 2016). The European Union’s General Guidelines for Operational Priorities on Humanitarian Aid also emphasise the importance of communicating transparently about disasters (European Commission, 2014). When ‘communication’ or ‘information’ related to disaster management is discussed, it is

frequently in general terms and without expressed consideration for the fact that, to be accessible, information often has to be disseminated in multiple languages. Translation—the rendering of the meaning expressed in one language into another language—is therefore required. Yet, the needs of those with limited understanding of the dominant language used during response and recovery operations is often overlooked (Nepal et al., 2012).

This paper examines whether, and how, translation is formally recognised in national-level approaches to disaster response across five countries. We treat ‘translation’ as a broad concept here, including oral translation (interpreting) and written translation. Our assessment of current national practice in this area uses a human rights framework to first examine the right to translation in a disaster context. Language access through translation is not merely normative; effective response operations are dependent on effective communications (Kendra and Wachtendorf, 2003; Kapucu, 2006; Comfort, 2007). Further, improving language access can be viewed as a risk reduction tool, and thus contributes to overall community resilience (Paton and Johnston, 2001; Norris et al., 2008; Alexander, 2013). Using a ‘4-A Standards’ analytical tool (UN CIESCR 1999; Tomaševski, 2001), we assess the degree to which Ireland, the United Kingdom, Japan, New Zealand and the United States address language translation and disasters across the dimensions of accessibility, availability, adaptability and acceptability. To our knowledge, this is the first trans-national comparison focusing on translation during disasters from a 4-A, rights-based, analytic perspective.

Conceptual Framework: The Right to Translation

Article 9 of the United Nation's International Covenant on Civil and Political Rights (United Nations ICCPR, 1966) enshrines the right to freedom of expression as well as the right to seek, receive and impart information. Furthermore, Article 26 lists language as a trait that should not be used for the purpose of discrimination. In his comparative survey of international and national law on freedom of information, Toby Mendel states that "freedom of information" is seen to encompass the "free flow of information in society" rather than just the right to access information held by public bodies (Mendel, 2008, p. 8). Mendel analyses the legal right to information in specific circumstances and highlights a legal case in Italy where it was judged that a failure to provide complainants with essential information on risks and how to proceed in the case of an emergency in a nearby chemical factory was a breach of rights (Mendel, 2008, p. 15). The right to information may be prohibited in some circumstances, such as when national security is potentially compromised, yet in some national legal environments (e.g. Azerbaijan and Kyrgyzstan) exceptions apply to certain types of information including information on disasters (Mendel, 2008, p. 48, p. 77). It is beyond the scope of this article to delve deeper into a discussion of the right to information, but this synopsis suggests that both on an international and some national levels there is increasing recognition of the right to information as a human right and that this certainly applies to information on emergencies and disasters.

This position is further supported in 'The Signal Code: A Human Rights Approach to Information During Crisis', where Greenwood et al. (2017) discuss the important role that information and communication technologies (ICTs) now play in humanitarian responses to

disasters, but note that this development has taken place without an accepted rights-based approach towards humanitarian information activities (HIAs) (2017, p. 4). They define HIAs as activities that:

occur as part of humanitarian action throughout the response cycle and include, but are not limited to, improving situational awareness; disaster preparedness and mitigation; intervention design and evaluation; connecting populations to response activities and to each other; and supporting ongoing operations, including the delivery of assistance (Greenwood et al., 2017, p. 4).

While the focus in The Signal Code is more broadly on ICTs, one specific part of the code—The Right to Information—is highly relevant to our discussion. This right is described as follows:

Access to information during crisis, as well as the means to communicate it, is a basic humanitarian need. Thus, all people and populations have a fundamental right to generate, access, acquire, transmit, and benefit from information during crisis. The right to information during crisis exists at every phase of a crisis, regardless of the geographic location, political, cultural, or operational context or its severity (Greenwood et al., 2017, p. 13).

The authors argue that the right to information is of equal importance to other forms of assistance—such as food and water—and is essential so that affected persons can be agents of their own protection.

Despite this strong stance on the right to information in a disaster, the act of translating from one language to another as an enabler of this right is not given much

attention in The Signal Code and is also absent in Mendel's analysis. In Greenwood et al. (2017) there is only one reference to translation under the topic of realising the right to information, where it is specified that this might entail the removal of certain barriers, including cultural ones, through translation. While it is useful that translation is mentioned, we take the view that it ought to be given greater prominence if the right to information is to be more than an aspiration. We note also Mowbray's (2017) argument that international law supports the development of translation policies on the one hand, but provides for marginalisation of linguistic minorities on the other. She notes that translation is often presented as a 'right' only to the extent necessary to protect other rights (e.g. access to legal services).

These articles help establish a position that those affected by disasters should not be discriminated against on the grounds of language, and set out a basic right to accessible information. Information accessibility, for many, requires translation from one language to another. Further, as we highlight below, accessible information through translation services is fundamentally important to reducing vulnerability and enhancing resilience. With recognition of the importance of translation as our starting position, we utilise a 4-A Standards analytical lens to assess the extent to which the right to translated information is formalised across five national approaches to disaster management. Tomaševski, United Nations special rapporteur on the right to education, proposed the 4-A Standards framework to assess the realisation of the right to education (UN CESCR, 1999; Tomaševski, 2001; HRC, 2010). This framework considers the availability, accessibility, acceptability and adaptability of educational resources. Although Tomaševski focused on education, we apply

the same framework here because the 4-A approach provides a structured and comprehensive way of considering the extent to which these countries approach their obligations to provide information relating to disasters to culturally and linguistically diverse groups.

The 4-A Standards can be summarised as follows:

- Availability—ensuring pathways to a right are available (and affordable)
- Accessibility—eliminating discrimination in relation to accessing a particular right
- Acceptability—focusing on the quality of a right and its conformity to minimum human rights standards
- Adaptability—how well a particular right responds to culturally and linguistically diverse populations.

Using this framework, it is possible to critique how particular rights intersect with practice as, for example, Marlowe and Humpage (2016) did for New Zealand social policy and how it affects refugees' access to education, employment and health. However, it is necessary to tailor the framework to translation in the following way:

- Availability—ensuring translated information is made available; is it recognised as an essential product and service?
- Accessibility—if translation is 'available', is it accessible, i.e. free, delivered on multiple platforms, in multiple modes, in all relevant languages?¹

- Acceptability—ensuring that the provision of translation is acceptable, i.e. provisions are put in place to ensure accuracy and appropriateness of information
- Adaptability—can the provision of translation be adapted to different scenarios, for example, fluid language requirements, literacies, technological demands, new modes of delivery, diverse hazards and movement of peoples?

The application of the framework to the context of translation in disasters is elaborated further in the section entitled ‘4-A Analysis’. First, we explain the study design and then provide country-specific contexts and their approaches.

Study design

Five national disaster management approaches were selected for this analysis using a purposive sampling logic. The five countries selected offer critical variation in terms of ‘hazardscape’, demographics, governance models, political cultural models and disaster incident experience. Together these factors should, we expect, be reflected in their approaches to crisis or disaster-related language translation. While an even broader analysis may be desirable, comparison of five national approaches is sufficient to produce significant insight regarding how crisis or disaster management varies with respect to language translation. Further, assessing policy and strategy for Ireland, the United Kingdom, Japan, New Zealand and the United States was practicable due to the authors’ experience and knowledge of each of those countries.

Those data essential to permit a comparative assessment are key official disaster management documents for each country, including statutes, emergency planning

documents, other similarly related documents and hazardscape analyses. The purpose of this assessment is to offer an explicit national-level comparison of policy and practice on disaster-relevant translation. It is important to recognise that critical operational responsibilities reside with local and regional political and administrative jurisdictions in most national systems. However, a comparative subnational assessment is a full topic in itself and beyond the scope here; we return to this point in our concluding remarks.

After identifying a consistent set of relevant materials (guiding statutes, national emergency operations plans, and any additional planning materials relevant to translation in this domain) a template was devised for the comparative analysis of the respective national approaches. The comparison of these materials involved analysing key stated objectives, main topics covered, stakeholders mentioned, temporal status, and how the objectives were intended to be realised. Following this initial document analysis, we searched for and recorded the occurrence of keywords relevant to the topic of translation: 'translation', 'translator', 'interpretation', 'interpreter', 'language', 'linguistic', 'culture', 'accessibility' and derivative words in order to understand attention to these issues. A close reading followed for each collection of documents across the five nations in order to identify practices that might contribute to the 4-As in relation to translation, and explicit or implicit good practices were noted.

Country-specific contexts

By presenting information on hazards, demographics and disaster management in tabular form (Table 1), we facilitate a quick comparison of the specific contexts for each country. We acknowledge, however, that hazards are by no means homogeneous at national levels,

for example, the United States has considerable differences between coastal and central states (Alexander, 2016; Glade and Alexander, 2016).

Since 2011, the United Nations Institute of Environment and Human Security in Stuttgart has systematically assessed and reported the vulnerabilities of countries in relation to their exposure to natural hazards; the annual report produces a 'World Risk Index' (Welle and Birkmann, 2015) which is included in the table. The higher the risk, the higher the ranking.

Table 1: Hazards, Demographics and Disaster Response Authorities for each Country

Country	Population	Overseas born citizens and permanent residents	Annual tourists (2016)	Official Languages	Next most common languages	Main Natural hazards	World Risk Index Rank/Percentage Score ²	Principal disaster response authority	Illustrations of National level DRR related documents
Ireland	4.7 million ³	11.6%	8.7 million ⁴	English Irish Irish Sign Language	Polish French Romanian	Flooding Storms	112/4.60%	Department of Defence	Framework for Major Emergency Management (FMEM, 2008) Guide to Preparing a Major Emergency Plan (2010)
United Kingdom	65.6 million ⁵	13% ⁶	37.6 million ⁷	English Welsh	Bengali Polish Turkish	Flooding	131/3.54%	Home Office for terrorist-related emergencies; other emergencies by a Lead Government Department that devolves control to local authorities. ⁸	Civil Contingencies Act (2004)
New Zealand	4.7 million ⁹	25%	3.7 million ¹⁰	Te Reo ¹¹ New Zealand Sign Language	Samoan Hindi	Flooding Earthquake Volcanic eruption Tsunami	56/4.55%	Ministry of Civil Defence and Emergency Management	National Hazardscape Report (2007) National CDEM Plan (2015)

Japan	127 million	1.8%	24 ¹² million	Japanese	Chinese (Simpl.) Korean Tagalog Brazilian Portuguese ¹³	Flooding Earthquake Volcanic eruption Tsunami Cyclones	17/12.99%	Central Disaster Management Council ¹⁴	Disaster Countermeasures Basic Act (1961)
United States	325 million	13% ¹⁵	75.9 million ¹⁶	English (<i>de facto Official Language</i>)	Spanish Chinese Hindi	Earthquakes Hurricanes Tornadoes Wild Fires Flooding, Severe weather	127/3.76%	Federal Emergency Management Agency (Financial Resources) Decentralised emergency management networks	Language Access Plan (2016)

Of primary significance in Table 1, for the assessment here, is the diversity of cultural and linguistic communities in and across each country, which is reported to be on the increase, the number of tourists visiting each country, any of whom could be involved in a disaster, as well as the diversity of hazards faced by those countries.

Ireland

Ireland is not considered to have a particularly hazardous natural environment and this stands in contrast with some of the other countries in this analysis (New Zealand, Japan and the US). Flooding is one of the primary hazards (Jeffers, 2011; Major Emergency Management National Steering Group (MEM.ie), 2011, 2016), along with storms (Webb et al., 2009) and high winds.

Ireland's *Framework for Major Emergency Management* (henceforth, FMEM—Irish Government, 2008) was published in 2008. It is not a statutory document but provides a 100-page, all-hazards approach that offers guidance for agencies involved in emergency management. The primary focus throughout the FMEM is on the 'response' stage. The FMEM is supported by a number of Guidance and Protocol documents.

An assessment of the FMEM reveals that there is only one occurrence of a keyword relevant to our study: 'interpreters'. This occurs in Section 5 ('Response', p. 84) under consideration of vulnerable persons and is in relation to non-national casualties. There is no mention of translation, translators, or linguistically and culturally diverse communities, other than this.

A slightly stronger recognition is given to translators, and language in general, in two of the Guidance documents that accompany the FMEM. In the *Guide to Managing Evacuation and Rest Centres* (Irish Government, 2015, p. 39), there is one mention of 'translators' in the context of the management of Rest Centres: 'provision of translators for

non-English speaking individuals'. Interpreters are not mentioned (although given the context, it is probable that interpreters are what was intended here rather than translators—the two terms are frequently confused). This Guide devotes some attention to general language requirements by recognising that:

there may be a number of people whose first language is not English. They may have no English, or insufficient to manage in an emergency situation. In some households the only English speakers will be children (Irish Government, 2015, p. 23).

Furthermore, for emergency information dissemination it is recommended that warning messages may need to be in 'languages appropriate to the locality and in large print, Braille and on tape' (pp. 23–24). This Guide also draws attention to linguistic and cultural diversity by highlighting that information may need to be in more than one language and that refreshments in Rest Centres should meet people's cultural, religious and medical requirements (Irish Government, 2015, p. 35).

A second germane document that acknowledges the role of translation is the *Guide to Preparing a Major Emergency Plan* (2010). The importance of clear language is emphasised (Irish Government, 2010, p. 13). In addition, the plan should specify arrangements for non-national casualties, "including foreign language communication resources" (p. 24).

In these two complementary documents, the need for translations to be made available is more evident, and there is some allusion to accessibility for disabled communities (Braille, large print) and accessibility for those with literacy challenges or low language competence (clear language). Time seems to play a role with regard to awareness.

There is greater awareness of the need for translation in the 2015 Guidance document on Rest Centres, compared with the 2010 document on *Preparing an Emergency Plan*, and with the FMEM itself, which dates from 2008.

United Kingdom

The *National Risk Register of Civil Emergencies* (Cabinet Office, UK, 2015) summarises the UK natural hazards and highlights flooding as the predominant risk. The statutory document that establishes a framework for managing emergencies is the *Civil Contingencies Act* of 2004 (Civil Contingencies Act, 2004). Two complementary Guidance documents establish the overarching principles underpinning emergency plans: The *Emergency Preparedness. Guidance on Part 1 of the Civil Contingencies Act 2004, its associated regulations and non-statutory arrangements* (Cabinet Office, UK, 2012—chapters published between 2011 and 2012, henceforth EPG 2012) and the *Emergency Response and Recovery Non-Statutory Guidance Accompanying the Civil Contingencies Act 2004* (henceforth ERR, HM Government 2013).

In the EPG, the term ‘interpreter(s)’ occurs twice, ‘translators’ once, ‘language’ (as in different, foreign languages) occurs seven times. In the ERR, ‘interpreter(s)’ occurs three times, ‘translators’ once, and ‘language’ twice. The EPG is a 19-chapter document¹⁷ in which each chapter focuses on a specific aspect of preparedness. Here we focus on the most relevant chapters.

Chapter 7, ‘Communicating with the Public’, acknowledges that language needs must be considered in emergencies. The document asserts how:

the needs of vulnerable people will be evident in some areas ... where there may be significant numbers who speak a minority ethnic language (EPG, 2012, ch7, p. 34).

It also states:

7.77. People who have difficulty understanding the message because they use a different language may require pre-prepared print or broadcast messages in their own language (EPG, 2012, ch7. p. 36).

Annex 7D to this chapter is entitled *Duty to Communicate with the Public: The Ten Step Cycle* (initially published in 2007). Annex 7D (p. 4) stresses how emergency planners ought to conduct local risk assessments bearing in mind whether their communities may have large international populations for whom English may not be the first language. The Local Resilience Forums (LRFs—Cabinet Office, 2013) are responsible, according to Step 2, for identifying their communities' needs. However, the 2013 LRF document does not mention different languages, translation, or interpretation as part of the definition of their roles, not even when it focuses on communication (Cabinet Office, 2013, pp. 47, 50).

Chapter 14, 'The Role of the Voluntary Sector' is where direct references to interpreters and translators are found. Focused on preparedness, the EPG discusses translators and interpreters as part of the voluntary sector. The second mention of 'interpreters' and the only one of 'translator' occurs in Annex 14A 'Examples of Voluntary Sector Activities and Services in Support of Responding Organisations', which include them as support to communications.

The 233-page *Emergency Response and Recovery Non-Statutory Guidance Accompanying the Civil Contingencies Act 2004* document is specifically designed to

complement the Emergency Preparedness document. In a parallel structure to the EPG document, Chapter 7 of the ERR also mentions the role of language in effective communication. Section 7.7.7 states the formal concerns in these terms:

Some people may have language difficulties: help from translators and interpreters may therefore be needed.

However, the ERR offers simplistic and out-of-date advice when it comes to procedural approaches to deploying interpreters (or in distinguishing translators from interpreters). The document confuses interpreting with translation, and refers to outsourcing procedures that create a weakness in communicating with the very groups identified as ‘vulnerable’. For example, the ERR states that ‘practical assistance with foreign languages is available in the simple to use British Red Cross Multi-lingual Phrasebooks’ (7.7.7) or delegated to ‘representatives of faith communities’ or ‘suitably trained staff from voluntary organizations’ (7.4.4). It states that ‘where this can be reasonably anticipated, suitable arrangements should be built into plans’ (7.7.6), yet no coordinator to activate such arrangements is identified. This weakness played out in the waiting time for interpreters (in some cases not provided up to 10 days after the fire, see Marsh 2017) and for translations into 18 languages after the 2017 Grenfell Tower fire (carried out by volunteers in a project initiated by musicians, 27 days after the fire, see Allen and Duckworth 2017).

In the broader constellation of related documents, the *Identifying People Who Are Vulnerable in a Crisis* document (henceforth IPV, 2008—Cabinet Office, United Kingdom 2008), presents 12 occurrences of ‘interpreters’ and four of ‘translators’ but these are repeated within two tables. The document categorises non-English speakers as vulnerable

during emergencies and specifies ways of addressing their needs in Annex 2d (pp. 27–29).

One further document complements the EPG and ERR documents: the more recent 66-page *Human Aspects in Emergency Management*, which considers people whose native or main language is not English as vulnerable sectors of the population (Cabinet Office, United Kingdom 2016, p. 4).

New Zealand

New Zealand is a country that has a relatively significant hazardscape and a rapidly changing demographic, particularly as it relates to cultural and linguistic diversity (see Table 1). The *National Civil Defence Emergency Management Plan* (NCDEM—New Zealand Government, 2015a) provides the guiding principles, roles and responsibilities for Civil Defence and Emergency Management (CDEM) at the national level.

An initial assessment of the NCDEM Plan reveals that the keywords we are interested in ('translation', 'interpreting', 'language') do not occur. 'Linguistically diverse communities' are mentioned twice throughout the 100 pages, both under the heading 'Emergency Information Management'. In the first instance (p. 82), linguistically diverse communities are mentioned as being one of the target audiences for public information. They are also mentioned in relation to one of the principles underlying the broadcast of emergency information:

... use a wide range of channels and media to reach as many people as possible, including culturally and linguistically diverse communities and people with disabilities. (p. 82)

The importance of the cultural and demographic makeup of those who may be affected by emergencies is alluded to under the section dealing with Welfare Services (p. 43).

The NCDEM Plan explicitly references another 325-page document, called the *Guide to the National CDEM Plan* (henceforth The Guide—New Zealand Government, 2015b). The Guide includes the actual text of the NCDEM, but also incorporates operational information and references to other guidelines (for example, the Support Plan called the *Tsunami Advisory and Warning Plan*—New Zealand Government, 2017a). The Guide is presented as a ‘living document’, but not a statutory instrument. An invitation is issued for comments and suggestions on the material in the Guide.

In contrast with the NCDEM Plan, the keywords ‘translator’ and ‘interpreter’ occur once each in the Guide under Section 28 which deals with Public Information Management and, specifically, accessibility of information (section 28.5.2) where translators and interpreters (including those for New Zealand Sign Language) may be required.

Within the Guide, there are seven occurrences of the term ‘linguistic’. One substantive mention occurs under the sub-heading of ‘Spontaneous Volunteers’. Here it is acknowledged that such volunteers can emerge from pre-existing community groups such as: ‘marae, iwi, or culturally and linguistically diverse (CALD) community networks’ (Section 4, p. 3). CALD groups are listed again (Section 14, p. 17) as one external support group for psycho-social support.

The Guide, in turn, references some support plans such as the *Wellington Earthquake National Initial Response Plan 2017* (New Zealand Government, 2017b). Under Guiding Principles [sic], Section (a), the Wellington Plan states that:

Agencies will take all reasonable steps to make information accessible (i.e. translation of materials into multiple languages, use of NZSL interpreters/captioning where possible) clear, concise and consistent (New Zealand Government, 2017b, p. 14).

Notably, the keywords 'language', 'linguistic' and 'culture' and 'diverse' do not appear in the Wellington Plan.

Japan

In spite of Japan's capacity to cope with disaster and despite its sophisticated system for applying lessons learned to its disaster management policies, Japan periodically experiences great loss of life and significant economic losses as a direct result of large-scale disasters.

The number of foreign nationals residing in Japan reached a record high in 2016.

Concurrently, the number of foreign visitors to Japan in 2016 also reached a record high (see Table 1).

The legislative instrument structuring Japan's disaster management system is the 1961 *Disaster Countermeasures Basic Act* (Director General for Disaster Management, 2017). The Act defines the basic concepts that guide disaster management in Japan, clarifies the mechanisms for declaring a state of emergency, and sets out a basis in legislation and budgeting for the high-level responsibilities that each stakeholder of disaster management in the State should take. One of the Act's most significant measures is that it legally establishes the Central Disaster Management Council and defines the Council's

responsibilities to formulate the *Basic Disaster Management Plan* (BDMP—Director General for Disaster Management, 2017). This Plan is updated regularly; the current version dates from April 2017.

In contrast to the approaches in New Zealand, Ireland and the UK, the BDMP acknowledges the need for those managing and those affected by a disaster in Japan to engage with languages other than Japanese. References to diverse language needs are, however, predominantly implicit. An analysis of the 315-page document revealed no use of operational equivalents in Japanese for the keywords ‘language’, ‘linguistic’, ‘translator’, ‘translation’, ‘interpreter’, or ‘interpreting’. Searching for use of equivalents for ‘foreign’, ‘accessible’, and ‘volunteer’ though, revealed interesting stances relevant to translation in disasters.

Page five of the document sets down the principle that the State and its organs should proceed from the basis that the behaviour and informational needs of foreign residents and foreign visitors may be different, but that a system for timely and accurate information transmission needs to be put in place to support both groups (Central Disaster Management Council, 2017, p. 5). Communication with foreign nationals by particular stakeholders in Japan is focused on in the Plan especially in terms of disaster training and education (Central Disaster Management Council, 2017, p. 15), evacuation procedures (pp. 31–32), communicating disaster-related information to evacuees (p. 71), and communicating with foreign counterparts and governments overseas (pp. 18, 37, 43).

The most explicit reference to translation is found when we examine the BDMP within its broader legislative context and analyse recent White Papers on Disaster

Management in Japan. From this analysis, we begin to see the way in which crisis translation approaches can be developed through the annual reporting system. Specifically, in the 2016 White Paper, reference is made to a ¥1.26 billion (ca. US\$11 million) budget commitment by Japan's Ministry of Internal Affairs and Communications to commission research into the development of automated translation applications that could be applied to disaster contexts (Cabinet Office, Government of Japan, 2016, p. 211). Then, the 2017 White Paper describes disaster simulation drills in which multilingual apps for mobile phones, multilingual digital signage, and megaphones equipped with automated speech-to-speech translation technology for Japanese, English, Chinese, and Korean were tested and used to support foreign participants in the training (Cabinet Office, Government of Japan, 2017, p. 97). These developments point toward a growing interest in automated language solutions in disaster approaches in Japan.

United States

The United States frequently experiences large-scale emergencies and natural disasters in the form of wild fires, earthquakes, hurricanes and tornadoes, among others, with significant subnational variation in hazard vulnerability profiles (Cutter, 2002). The scale of disasters and their impact has been increasing significantly over the last several decades (Gall et al., 2011). In addition to a complex hazards environment and the associated complexity of emergency management across a politically diverse federal governance system, the United States also has a linguistically and culturally diverse population (see Table 1). According to the US Census Bureau, over 60 million US residents speak a language other than English at home and this number has been growing since the 1970s.

Several key features of the American system of emergency management and community preparedness for disruption are important to recognise. Historically, the federal system of government equated to rather loosely arranged, decentralised emergency management networks with a high degree of variability relative to capacity and commitment in managing risk and establishing effective response systems (see Burby, 1998). The September 11, 2001 terror attacks in New York City and Washington DC were transformative; a major restructuring of emergency response and preparedness doctrine occurred, with particular emphasis on establishing consistency and uniformity in emergency operations across all subnational units of government (Harrald, 2012). Hurricane Katrina similarly had a dramatic effect on policy and practice as that disaster revealed a number of serious deficiencies in the national response to large-scale disasters, especially when the effects on vulnerable populations were considered (Gall and Cutter, 2005). The Stafford Act of 1988 established the framework for federal assistance during emergencies and the Post-Katrina Emergency Management Reform Act of 2006 amended this to include all community needs. Within that context of rapid change and readjustment over the 15 years, the US Federal Emergency Management Agency (FEMA) has sought to establish a 'whole community' strategic approach to national, and individual community, preparedness for emergencies and disaster (FEMA, 2011). Efforts to establish consistency of operational practice following the 9/11 terror attacks, and the recognition of limits of existing readiness to meet the needs of especially vulnerable subgroups of the population following the Katrina disaster provide context for understanding disaster language access planning in the US.

The document we wish to highlight here is not a broad-ranging policy document on emergency management, but rather a very specific planning document that immediately goes to the heart of the issue we are concerned with: language access in disasters. The document is called *The Language Access Plan* (henceforth, LAP) and is published by the US Department of Homeland Security's Federal Emergency Management Agency (FEMA, 2016¹⁸). The Plan is presented as a contribution to FEMA's mission to:

... interact with the public and be committed to providing equal access to all persons affected by an event or hazard and ensuring diverse audiences receive critical, accessible and understandable disaster assistance communications, regardless of English language proficiency or accessible communication needs (FEMA, 2016, p. 2).

Thus, the availability of translation in a disaster is immediately addressed.

The LAP references the Department of Homeland Security's (DHS) policy on language access and declares that it adheres to the latter. A reference is also made to Section 616 of the Post-Katrina Emergency Management Reform Act, which resulted in FEMA identifying priority languages for emergency response.¹⁹ The FEMA Office for Equal Rights is identified as having direct enforcement authority for compliance with policies regarding governmental interactions with LEP communities (FEMA, 2016, p.5). The FEMA LAP notes specifically their authority in this area is derived from 'Section 601 of Title VI of the Civil Rights Act of 1964, 42 U.S.C. section 2000d' which states that:

[n]o person in the United States shall on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Of all the approaches we have analysed here, this FEMA plan in the United States is the only document that presents language access in a disaster in rights-based terms.

Given the title of the LAP, it is not surprising that keywords relevant to our study occur relatively frequently, especially when compared with the other documents reviewed here. For example, ‘translation’ occurs 29 times, ‘translator’ five times, ‘interpreting’ once, ‘interpretation’ 22 times, and ‘interpreter’ on 30 occasions. In its explanation of ‘key terms’, the LAP differentiates adequately between the two activities of interpreting and translation, but the focus throughout the document leans more towards interpreting than translation.

4-A Analysis

As stated earlier, we tailor Tomaševki’s (HRC, 2010) 4-A framework to perform a rights-based 4-A analysis of the position of translation in the five national approaches outlined. The first ‘A’—*Availability*—considers whether there are provisions within the national approaches for translation as a service and product. *Accessibility* is considered from two perspectives—general accessibility of translated content (spoken or written)—is it free, made available on multiple platforms (radio, TV, social media, posters, pamphlets, etc.), and in all languages that might be required. The second perspective relates to accessibility for special needs, for example, provision of content in simplified language for those with limited language proficiency, and for those with sensory impairments (translation into sign language and Braille). *Acceptability* concerns whether and how translated content is rendered acceptable, i.e. what provisions are in place to ensure accuracy and cultural

appropriateness? The final 'A'—*Adaptability*—focuses on whether the provision of translation in a disaster is adaptable, for example, languages that were not catered for previously can be included, technology is being deployed appropriately to assist with translation provision, new modes of delivery are possible, if required, or alternative modes of delivery are easily accessed (for example, multilingual radio announcements if internet service is disrupted), and diversity of hazards and movement of peoples over time can be dealt with. Against this customised version of the framework, we assess the national approaches described earlier.

Availability

In the disaster management approaches as indicated in the official documents of Ireland, the UK and New Zealand, there is some recognition of the needs for non-native speakers of the dominant language of those countries. Needs are more explicitly recognised and elaborated in documents that accompany those describing the official emergency response approach and awareness is greater in more recent documents. This suggests an evolving awareness. However, while multilingual and multicultural needs are briefly recognised, the content is cursory and there are no details on how translated information would be made available, or by whom.

Japan's approach is relatively explicit in comparison. The BDMP states that local governments shall devise an accessible information communication system that takes into account people requiring special consideration, including foreign nationals. Those responsible for ensuring the delivery of accessible content are specified. Japan allows for

dynamic changes to its disaster preparedness documentation which could, in theory, allow for increased provision for translation in disaster management. This 'living document' approach is also adopted by New Zealand. References to volunteering are found throughout the BDMP. Indeed, it is in relation to volunteering that an explicit reference to language ability and communication with foreign nationals can be found:

... effective use of volunteer skills such as elderly nursing care or ability to converse with foreign nationals shall be taken into consideration, and bases for volunteer activity shall be provided as needed. (Central Disaster Management Council, 2017: p. 77, our own translation and emphasis).

Thus, harnessing the potential of volunteers for making translation available is acknowledged, but this should not be taken as a sole solution, thereby absolving authorities from their responsibilities. The potential for contribution from volunteers is also recognised in other national approaches (Ireland, the US and NZ). By harnessing the capabilities of volunteers, emergency responders could increase the availability of translation, but this does not come without professional and ethical concerns (on this topic see, for example, McDonough Dolmaya, 2011 and Sutherlin, 2013).

The U.S.'s LAP is the only document that explicitly addresses making translation available for disaster communication. None of the other cases has specific, stand-alone, national-level plans pertaining to language access in disaster response. Language Line is a telephone service for use by LEP communities in the US during emergencies. According to

the LAP, assistance is available in 50 languages. Furthermore, FEMA maintains a library of previously translated and accessible materials relating to disaster information as well as multilingual web pages. 'Ready.gov', for example, is designed to educate and empower Americans to prepare for and respond to emergencies, with information available in 12 languages. 'Disasterassistance.gov' is a website that facilitates the application of post-disaster assistance, and support is provided for LEP communities. Likewise, New Zealand's NCDEM addresses the notion of 'clusters' (agencies that work to achieve common outcomes such as the provision of public emergency information). In principle, the UK Local Resilience Forums, tasked with considering the specificity of their locales including the cultural and linguistic profiles of their geographical areas, address the same provision. Two objectives related to this are to share resources and avoid duplication. This sentiment can also be applied to translation for disaster situations. For example, citizen translator networks, multilingual glossaries and translation memories (databases of previously translated material) could be shared across the various agencies who need to supply public information in emergencies.

Accessibility

With such limited evidence for the provision of translation in the majority of the national crisis or disaster management approaches, it is unsurprising that there is less evidence for the other three 'A's'. If translation services are not explicitly foreseen, they cannot be assessed for accessibility, acceptability, etc. There are some aspects worth noting, nonetheless.

Accessibility in general

Regarding accessibility in general in the sense provided above, the provision of translation in *both* written and spoken form is lacking consideration. Indeed, as noted earlier, in some documents confusion exists between translation (of written text) and interpreting (spoken). In a professional context, translators and interpreters see themselves as performing very different tasks and their training programmes are often separate. But in a disaster it may very well be the case that a language mediator of necessity performs both translation and interpreting. Both forms of 'translation' might contribute to different stages of a disaster and both ought to be accessible. In the US LAP, the focus is primarily on the response stage and interpreting, which could reduce access to other forms of translation in other stages of a disaster.

With regard to making translated content 'freely' accessible, there are no explicit mentions of cost in the approaches examined, though one cannot imagine that there would be a charge for this service. Cost and time are sometimes presented as an explanation for a lack of provision of translated content in commercial settings and we expect that this may also be a factor in official emergency response units where resources are most likely limited.

Some of the documents examined (for example, Ireland's FMEM) mention the need for diverse channels of communication such as local press, local radio, TV, Internet and leaflet drops. Consideration of diverse and evolving language requirements is weak; it is mostly acknowledged that other, or foreign, language requirements may exist. The LAP mentions Spanish specifically, understandably given the size of that US language

community. Apart from this, how authorities might deal with evolving language requirements is not directly mentioned.

Accessibility for special needs

The needs of those with visual and auditory impairments, and the elderly are mentioned, again in a mostly cursory manner, in all approaches examined. For example, Ireland's *Guide to Preparing a Major Emergency Plan* mentions that communications should be available in Braille, large print and clear language. The US's LAP also acknowledges the needs of these communities.

Acceptability

An awareness of the importance of quality in translation and interpreting is demonstrated throughout the LAP, as is an awareness of the importance of training. For instance, the LAP underlines the importance of qualifications and training for interpreters and cautions about the use of unqualified bilingual staff. Continuous evaluation of interpreters and translators is performed (although no detail is provided on how this is achieved). Considerable attention is also given to the topic of training for FEMA staff and others. Training for staff is divided into training that targets bilingual FEMA staff and 'reservists', who frontline with LEP communities. This training focuses on translation and interpreting competence, and awareness building, in particular around working with interpreters.

Chapter 7 of the UK's *Emergency Response and Recovery* document recognises two important principles linked with acceptability. Firstly:

... any interpreters used should be aware of the principles of responding to and recovering from emergencies (and will need appropriate support afterwards).

To make linguists aware of the operational difficulties in an emergency means including them in training to equip them for deployment and so speaks to the standard of acceptability. However, this valid principle is contradicted by the notion that their training be provided by the voluntary sector. Secondly, the same statement focuses on a crucial lacuna, which is the support of linguists involved in emergencies.

Adaptability

The strongest evidence for adaptability emerges from the Japanese approach, where technologies such as machine (or computer-automated) translation (known as MT), speech-to-text, text-to-speech, etc., are in development for potential disastrous events. Such investment would enable adaptive provision of alerts and similar information during disaster responses. Importantly though, there are numerous challenges associated with these technologies, such as low or no availability of data resources for creating systems in the first instance, low quality of translated output, and dependence on power and the internet, as detailed by Lewis (2010) and Lewis, Munro, and Vogel (2011). Therefore, these cannot be seen as complete solutions to the provision of translation, just as the use of volunteers cannot offer a complete solution.

Discussion: Approaches to ensuring the right to translation in disasters

Our comparative analysis of five national approaches to crisis or disaster management reveals varying degrees of recognition of the right to translated information as well as levels

of adherence to the standards of availability, accessibility, acceptability, and adaptability. In some cases (Ireland, the UK, New Zealand), the availability of translation is touched on superficially in formal preparedness or operations documents. In the other two examples (Japan and the US), availability and accessibility of translated information enjoy higher levels of recognition. Adaptability was hardly recognised, except in the case of Japan where the role of translation technology is acknowledged. The US's LAP was the strongest in terms of meeting the 4-A Standards and presenting translated information as a 'right'. However, it makes no mention of the possibilities afforded by translation technology.

National-level approaches provide a guide to direct decisions and actions that relate to the provision of assistance during disasters. It is important to recognise that policy goal statements and commitments are only part of the picture; implementation is a central challenge, of course. Furthermore, presenting language access as a right may not go far enough to prove efficacious where first response and emergency management agencies face practical resource constraints. If accurate, timely and effective communication is essential for effective disaster-risk reduction and response, then language translation is an essential component for such effectiveness. In short, appropriate language access needs to be seen not just as a right, but as a disaster risk reduction tool that increases individual and aggregate community-level resilience.

The assessment presented here indicates that these five national disaster management approaches are not yet sufficiently developed to adequately protect the right to translated information during disaster response and recovery. It would seem that much work is required to have translation recognised as a right in disaster situations, and

subsequently enshrined in policy documents. Prior disaster research suggests that community preparedness tends to be associated with underlying demand, local hazards' vulnerability and the corresponding administrative capacity to meet needs (see Gerber et al. 2005; Gerber and Robinson, 2009). In the case of language-access services during disaster, it seems likely that solutions to such problems might arise from the bottom up. For instance, the Japanese documents mandate this through the use of the phrase 'Local public authorities will...' (our translation). Examples exist of local groups reacting to experience with disaster and creating their own recommendations for provision of information for culturally and linguistically diverse communities, such as the 'Community Language Information Network Group' (CLING—Wiley, 2012) that grew out of the Canterbury earthquakes in New Zealand. This group has published an extensive set of recommendations²⁰, which were beyond the scope of our current analysis, but are certainly noteworthy. A second example at the sub-national level is Tokyo Metropolitan Government's 'Disaster Linguistic Volunteers' programme, which trains linguistic volunteers in translation and interpreting and involves CALD communities in emergency drills. Similarly, Gerber, Zhang and Xiang (2018) have found in a study of county-level emergency operations plans (EOPs) in the United States that about 20% of those plans contain explicit provisions for responsible parties to manage language access issues during an emergency. At the same time, another 38% of those EOPs at least noted the issue, or noted a process for addressing language access needs in the community. These are just a few examples of growing good practice on local or provincial levels, which are worthy of further analysis. Bottom-up and

top-down approaches that are in conversation with each other are necessary for policy development, and are important to note in assessment of this policy area.

Conclusion

Our assessment here sheds light on how the right to translated information is not generally foregrounded in national approaches to disaster management. The limitations of current practice in this domain are important because the efficacy of strategic and operational elements across the phases of disaster management are affected by the cultural and linguistic diversity of disaster-affected communities, as has been confirmed by frontline responders (e.g. Pyle 2018). Provision of language access services functions as a risk-reduction tool, as discussed above. This paper provides a framework to consider the ways in which information can be disseminated through the lenses of availability, accessibility, adaptability and acceptability in language translation. It sheds light on an increasingly important concern for disaster management and what that implies for effective practices that help reduce risk and enhance resilience.

One of the aspirations articulated by Greenwood et al. (2017, p. 6) is that it would enable the creation of obligations and minimum ethical and technical standards for Humanitarian Information Activities (HIA). Assessing language access services during disaster response and recovery contributes to such an imperative by treating translation as a core element of HIA. In attempting to understand current practice on translation services in disaster contexts our interpretation is that those elements are essential to improved disaster management where linguistic diversity increasingly makes all phases and

operational elements complex. Dealing with those elements is key to effective performance. Thus, four principles follow from the assessment presented here.

First, incorporating formally the right to translated information across all management phases of disasters includes ensuring correct differentiation between written translation and oral interpretation and when each is appropriate. Operationally, this means public response and emergency management agencies should identify who is responsible for making translation available. Second, ensuring free and readily available translation in locally relevant languages, on multiple platforms, through diverse dissemination modes is necessary for effective risk reduction and resilience promotion. This also means that taking levels of literacy, cultural appropriateness and disabilities into account is a key feature. Third, implementing necessary actions to guarantee acceptability of translated information might include, but is not limited to: use of professional translators and interpreters as a first port of call; training of translators and interpreters for emergencies; and ongoing ratification and training for all (including linguistic volunteers and agents who must rely on them). Likewise, given the likelihood that many communities will rely on the voluntary, non-profit sector to provide assistance, volunteer management strategies in this domain are critical. Lastly, as in any other area of hazards management and disaster preparedness, community needs on language access issues are not static. This means, in practice, that the right to translated information as a part of managing disasters must be a part of 'living policy and planning documents' that guide public agency actions to ensure that the potential fluidity of language requirements in a disaster can be met. Ideally, as local authorities seek to meet the needs of their residents (and resources are available), they will seek to improve their

disaster preparedness by investing in flexible and appropriate technologies that can assist rapid and accurate translation and will continuously consider new modes of dissemination. Given the practical realities and demands of increasing linguistic diversity in many communities across the globe, including large urban areas or ‘mega cities’, attention to the provision of language access services in disaster or other crisis situations will be an increasingly common aspect of emergency and disaster management. The 4-A, rights based framework serves as a useful tool to guide effective practices in meeting community needs.

Endnotes

¹ It is important to note that there are at least two levels of ‘Accessibility’ to consider—accessibility in general to all who need and can read or hear the translated information and accessibility for special needs, for example, for those who are blind or deaf or otherwise incapacitated.

² Welle and Birkmann (2015); The Annual Report is available at <http://weltrisikobericht.de/>. Last accessed 10 November 2017.

³ <http://www.cso.ie/en/media/csoie/census/census2016/pr/COPprelim2016.pdf>

⁴ http://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/3_Research_Insights/3_General_SurveysReports/Tourism-Facts-2016.pdf?ext=.pdf

⁵ Office for National Statistics (ONS)

⁶ <https://www.brookings.edu/blog/brookings-now/2013/10/03/what-percentage-of-u-s-population-is-foreign-born/>

⁷ <https://www.visitbritain.org/2016-snapshot>

⁸ Cabinet Office, UK. 2010/2013. Responding to Emergencies. The UK Central Government Response. Concept of Operations. Crown, London. Sections 2.6-2.15.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192425/C_ONOPs_incl_revised_chapter_24_Apr-13.pdf.

⁹ http://www.stats.govt.nz/browse_for_stats/snapshots-of-nz/top-statistics.aspx (last accessed 11 October 2017)

¹⁰ <http://www.mbie.govt.nz/info-services/sectors-industries/tourism/tourism-research-data/international-travel/international-visitor-arrivals-commentary>

¹¹ At the time of writing, English was not an official language in New Zealand, but a bill was being proposed in the New Zealand parliament to make it one.

¹² Statistics Bureau of Japan (2017, p. 100)

¹³ Languages assumed from statistics on numbers of foreign national residents by nationality: <http://www.stat.go.jp/english/data/nenkan/66nenkan/1431-02.htm> (last accessed on 7 December 2017).

¹⁴ Director General for Disaster Management (2017).

¹⁵ The most recent data retrieved was a report by the United States Census Bureau from a survey in 2010: <https://www.census.gov/prod/2012pubs/acs-19.pdf> (last accessed 24 January 2018).

¹⁶ https://travel.trade.gov/outreachpages/download_data_table/Fast_Facts_2016.pdf

¹⁷ Each chapter is paginated from 1, so references to the EPG indicate the chapter (ch) and the page within it.

¹⁸ Although the document is dated 2016, much of the content appears to date back to 2014–2015.

¹⁹ Those languages are Spanish, Arabic, Cambodian, Chinese, Haitian-Creole, French, Hindi, Italian, Japanese, Korean, Laotian, Russian, Tagalog, Urdu, Vietnamese, Greek, Polish, Thai and Portuguese and American Sign Language.

²⁰ See <https://www.civildefence.govt.nz/cdem-sector/cdem-framework/guidelines/including-culturally-and-linguistically-diverse-cald-communities/>

References

Aitsi-Selmi, A., V. Murray, C. Wannous, C. Dickinson, D. Johnston, A. Kawasaki, A. Stevance, and T. Yeing (2016) 'Reflections on a science and technology agenda for 21st century disaster risk reduction: based on the scientific content of the 2016 *UNISDR Science and Technology Conference on the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030*'. *International Journal of Disaster Risk Science*. 7(1). pp. 1–29.

Alexander, D. (2013) 'Resilience and disaster risk reduction: an etymological journey'. *Natural Hazards and Earth System Sciences*. 13(11). pp. 2707–2716.

Alexander, D. (2016) *How to Write an Emergency Plan*. Dunedin Academic Press, Edinburgh.

Allen, L., S. Duckworth (2017) 'Speak to Grenfell survivors in language they can understand Translation services are crucial if those left homeless are to get the help they sorely need'. *The Guardian* 16 July 2017. <https://www.theguardian.com/commentisfree/2017/jul/15/speak-to-grenfell-survivors-in-a-language-they-understand> (last accessed 21 June 2018).

Altay, N. and M. Labonte (2014) 'Challenges in humanitarian information management and exchange: evidence from Haiti'. *Disasters*. 38(S1). pp. S50–S52.

Burby, R.J. (ed.) (1998) *Cooperating with Nature: Confronting Natural Hazards with Land-Use Planning for Sustainable Communities*. Joseph Henry Press, Washington DC.

Cabinet Office, United Kingdom (2008) *Identifying People Who Are Vulnerable in a Crisis. Guidance for Emergency Planners and Responders*. Crown, London.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/61228/vulnerable_guidance.pdf (last accessed on 28 November 2017).

Cabinet Office, United Kingdom (2010/2013) *Responding to Emergencies. The UK Central Government Response. Concept of Operations*. London Crown.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192425/CONOPs_incl_revised_chapter_24_Apr-13.pdf (last accessed on 28 November 2017).

Cabinet Office, United Kingdom (2012) *Emergency Preparedness. Guidance on Part 1 of the Civil Contingencies Act 2004, its Associated Regulations and Non-Statutory Arrangements*. Crown, London. <https://www.gov.uk/government/publications/emergency-preparedness> (last accessed on 28 November 2017).

Cabinet Office, United Kingdom (2013) *The Role of Local Resilience Forums: A Reference Document*. Crown, London.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/62277/The_role_of_Local_Resilience_Forums- A_reference_document_v2_July_2013.pdf (last accessed on 28 November 2017).

Cabinet Office, United Kingdom (2015) *National Risk Register of Civil Emergencies*. 2015 Edition. Crown, London.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/419549/20150331_2015-NRR-WA_Final.pdf (last accessed on 28 November 2017).

Cabinet Office, United Kingdom (2016) *Human Aspects in Emergency Management. Guidance on Supporting Individuals Affected by Emergencies*. London: Crown.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/564306/human_aspects_guidance_2016_final.pdf (last accessed on 28 November 2017).

Cabinet Office, Government of Japan (2016) *White Paper Disaster Management in Japan 2016*. http://www.bousai.go.jp/kyoiku/panf/pdf/WP2016_DM_Full_Version.pdf (last accessed 7 November 2017).

Cabinet Office, Government of Japan (2017) *White Paper Disaster Management in Japan 2017*. http://www.bousai.go.jp/kyoiku/panf/pdf/WP2017_DM_Full_Version.pdf (last accessed on 7 November 2017).

Central Disaster Management Council (2017) *Bōsai kihon keikaku*.
http://www.bousai.go.jp/taisaku/keikaku/pdf/kihon_basic_plan170411.pdf (last accessed on 7 November 2017).

Civil Contingencies Act (2004) c.36.
<https://www.legislation.gov.uk/ukpga/2004/36/contents> (last accessed on 19 December 2017).

Comfort, L. K. (2007) 'Crisis management in hindsight: cognition, communication, coordination, and control'. *Public Administration Review*. 67(s1). pp. 189–197.

Cutter, S. L. (ed.) (2002) *American Hazardscapes: The Regionalization of Hazards and Disasters*. Joseph Henry Press, Washington DC.

Director General for Disaster Management (2017) *Disaster Management Plan*.
http://www.bousai.go.jp/en/documentation/reports/disaster_management_plan.html (last accessed on 7 November 2017).

European Commission (2014) *General Guidelines for Operational Priorities on Humanitarian Aid in 2015*. http://ec.europa.eu/echo/files/policies/strategy/strategy_2015_en.pdf (last accessed on 22 January 2018).

FEMA (2011) *Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action*. FDOC 104-008-1 2011, Federal Emergency Management Agency.
https://www.fema.gov/media-library-data/20130726-1813-25045-0649/whole_community_dec2011_2.pdf (last accessed on 19 December 2017).

FEMA (2016) *Language Access Plan*. Federal Emergency Management Agency.
<https://www.dhs.gov/sites/default/files/publications/FEMA%20Language%20Access%20Plan.pdf> (last accessed on 22 January 2018).

Fischer, H. (2008) *Response to Disaster: Fact versus Fiction and Its Perpetuation: The Sociology of Disaster*. 3rd ed. University Press of America, Lanham, MD.

Gall, M., K.A. Borden, C.T. Emrich, and S.L. Cutter (2011) 'The Unsustainable Trend of Natural Hazard Losses in the United States'. *Sustainability*. 3(11). pp. 2157–2181.

Gall, M. and S.L. Cutter (2005) 'Events and outcomes: Hurricane Katrina and beyond'. In C.B. Rubin (ed.) *Emergency Management: The American Experience 1900–2010*. 2nd ed. Public Entity Risk Institute, Fairfax, VA. pp. 191–212.

Gerber, B.J., D.B. Cohen, B. Cannon, D. Patterson, and K. Stewart (2005) 'On the front line: American cities and the challenge of homeland security preparedness'. *Urban Affairs Review*. 40(5). pp. 1–29.

Gerber, B.J. and S.E. Robinson (2009). 'Local government performance and the challenges of regional preparedness for disasters'. *Public Performance and Management Review*. 32(3). pp. 345–371.

Gerber, B.J., F. Zhang and T. Xiang (2018). 'Disaster management and the 'Whole Community' strategic approach: Assessing planning and preparedness efficacy for language access services.' Presentation at the *Midwest Political Science Association Conference*, Chicago, IL, April 2018.

Glade, T. and D. Alexander (2016) 'Classification of natural disasters'. In P.T. Borrowsky (ed.) *Encyclopedia of Natural Hazards*. Springer, Berlin. pp. 78–82.

Greenwood, F., C. Howarth, D. Escudero Poole, N.A. Raymond, and D.P. Scarnecchia (2017) 'The signal code: a human rights approach to information during crisis'. *Harvard Humanitarian Initiative*. <https://hhi.harvard.edu/publications/signal-code-human-rights-approach-information-during-crisis> (last accessed on 15 January 2018).

Harrald, J.R. (2012) Emergency management restructured: intended and unintended outcomes of actions taken since 9/11. In C.B. Rubin (ed.) *Emergency Management: The American Experience 1900–2010*. 2nd ed. Public Entity Risk Institute, Fairfax, VA. pp 167–190.

HM Government (2013) *Emergency Response and Recovery. Non-Statutory Guidance Accompanying the Civil Contingencies Act 2004*. Crown, London.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253488/Emergency_Response_and_Recovery_5th_edition_October_2013.pdf
(last accessed on 19 December 2017).

HRC (Human Rights Commission) (2010) *Human Rights in New Zealand*.
<https://www.hrc.co.nz/your-rights/human-rights/our-work/human-rights-new-zealand-2010/> (last accessed on 9 December 2017).

InfoAsAid/ActionAid Isiolo (2012) *A Learning Review of the Pilot Communications Project*.
<http://www.cdacnetwork.org/contentAsset/raw-data/0abadcd6-f55a-459e-9b0e-3bcb9051c3ba/attachedFile> (last accessed on 22 January 2018).

Irish Government (2008) *A Framework for Major Emergency Management*.
<https://drive.google.com/drive/u/1/folders/0B4GIYgYjI1D3UVBzOUVGR1FNVmM> (last accessed on 4 July 2017).

Irish Government (2010) *A Framework for Major Emergency Management – Guidance Document 2: A Guide to Preparing a Major Emergency Plan*. http://mem.ie/wp-content/uploads/2017/03/Revised-Guide-No-2-Preparing-Major-Emergency-Plan- March-10_DHPCLG-1.pdf (last accessed on 4 July 2017).

Irish Government (2015) *A Framework for Major Emergency Management – Guidance Document 6: A Guide to Managing Evacuation & Rest Centres*. Version 2. http://mem.ie/wp-content/uploads/2016/01/A_Guide_to_Evacuation_20151.pdf (last accessed on 4 July 2017).

Jeffers, J. (2011) 'The Cork city flood of November 2009: lessons for flood risk management and climate change adaptation at the urban scale'. *Irish Geography*. 44(1). pp. 61–80.

Kapucu, N. (2006) 'Interagency Communication networks during emergencies: boundary spanners in multiagency coordination'. *The American Review of Public Administration*. 36(2). pp. 207–225.

Kendra, J.M. and T. Wachtendorf (2003) 'Elements of resilience after the World Trade Center disaster: Reconstituting New York City's Emergency Operations Centre'. *Disasters*. 27(1). pp. 37–53.

Lewis, W. (2010) 'Haitian Creole: How to build and ship an MT engine from scratch in 4 days, 17 hours, & 30 minutes'. In *Proceedings of the 14th annual conference of the European Association for Machine Translation*, 27–28 May 2010. Saint-Raphaël, France. No page numbers.

Lewis, W., R. Munro, and S. Vogel (2011) 'Crisis MT: Developing a cookbook for MT in crisis situations'. In *Proceedings of the 6th Workshop on Statistical Machine Translation*. Edinburgh, Scotland, UK. 30–31 July. pp. 501–511.

Major Emergency Management National Steering Group (2011) *A Guide to Flood Emergencies*. http://mem.ie/wp-content/uploads/2017/05/A-Guide-to-Flood-Emergencies-Ver2-11-July-2013_DHPCLG.pdf (last accessed on 18 October 2017).

Major Emergency Management National Steering Group (2016) *A Protocol for Multi-Agency Response to Flood Emergencies*. <http://mem.ie/wp-content/uploads/2016/11/Protocol-for-Multi-agency-response-to-Flood-Emergencies-18Nov-16.pdf> (last accessed on 18 October 2017).

Marlowe, J. and L. Humpage (2016) 'Policy responses to refugees in New Zealand: a rights-based analysis. In J. Maidment and E. Beddoe (eds.) *New Zealand Social Policy for Social Work and Human Services: Diverse Perspectives*. Canterbury University Press, Christchurch. pp. 150–163.

Marsh, S. (2017) 'Grenfell Tower survivors evicted from hotel accommodation.' *The Guardian*, 24 June 2017. <https://www.theguardian.com/uk-news/2017/jun/24/grenfell-tower-fire-survivors-told-to-leave-emergency-hotel-accommodation-kensington-london> (last accessed 21 June 2018).

Mendel, T. (2008) *Freedom of information: A comparative legal survey*. Second edition. Paris: UNESCO.

McDonough Dolmaya, J. (2011) 'The ethics of crowdsourcing'. *Linguistica Antverpiensia*. 10. pp. 97–110.

Mowbray, J. (2017) 'Translation as marginalisation? International law, translation and the status of linguistic minorities'. In G. González Núñez and R. Meylaerts (eds.) *Translation and Public Policy: Interdisciplinary Perspectives and Case Studies*. Routledge, London. pp. 32–57.

Nepal, V., D. Banerjee, M. Perry, and D. Scott (2012) 'Disaster preparedness of linguistically isolated populations: practical issues for planners'. *Health Promotion Practice*. 13(2). pp. 265–271.

New Zealand Government (2015a) *National Civil Defence Emergency Management Plan*. LI 2015/140. <https://www.civildefence.govt.nz/cdem-sector/cdem-framework/national-civil-defence-emergency-management-plan/> (last accessed on 4 July 2017).

New Zealand Government (2015b) *The Guide to the National Civil Defence Management Plan*. <https://www.civildefence.govt.nz/assets/guide-to-the-national-cdem-plan/Guide-to-the-National-CDEM-Plan-2015.pdf> (last accessed on 4 July 2017).

New Zealand Government (2017a) *Tsunami Advisory and Warning Plan*. SP 01/17. <https://www.civildefence.govt.nz/assets/Uploads/publications/National-Tsunami-Advisory-and-Warning-Plan/National-Tsunami-Advisory-and-Warning-Plan-SP-0117-revised-November-2017.pdf> (last accessed on 4 July 2017).

New Zealand Government (2017b) *Wellington Earthquake National Initial Response Plan*. SP 02/17. <https://www.civildefence.govt.nz/assets/Uploads/publications/WENIRP/WENIRP-v1.1-May-2017.pdf> (last accessed on 4 July 2017).

Norris, F.H., S.P. Stevens, B. Pfefferbaum, K.F. Wyche, and R.L. Pfefferbaum (2008) 'Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness'. *American Journal of Community Psychology*. 41(1–2). pp. 127–150.

Paton, D. and D. Johnston (2001) 'Disasters and communities: vulnerability, resilience and preparedness'. *Disaster Prevention and Management: An International Journal*. 10(4). pp. 270–277.

Pyle, A.S. (2018) 'Intercultural crisis communication: examining the experiences of crisis sojourners.' *Journal of Applied Communication Research*. 46(3). pp. 388-407.

Santos-Hernández, J.M. and H.B. Morrow (2013) 'Language and literacy'. In D.S.K. Thomas, B.D. Phillips, W.E. Lovekamp, and A. Fothergill (eds.) *Social Vulnerability to Disasters*. 2nd ed. CRC Press, Boca Raton, London and New York. pp. 265-280.

Seeger, M.W. (2006) 'Best practices in crisis communication: an expert panel process.' *Journal of Applied Communication Research*. 34(3). pp. 232-244.

Statistics Bureau of Japan (2017) *Statistical Handbook of Japan 2017*. Nihontōkeikyōkai, Tokyo.

Sutherland, G. (2013) 'A voice in the crowd: broader implications for crowdsourcing translation during crisis'. *Journal of Information Science*. 39(3). pp. 397-409.

Tomaševski, K. (2001) 'Human rights obligations: making education available, accessible, acceptable and adaptable'. Right to education primers, no. 3. Swedish International Development Cooperation Agency (SIDA). Gothenburg. http://www.right-to-education.org/sites/right-to-education.org/files/resource-attachments/Tomasevski_Primer%203.pdf (last accessed 9 June 2018).

United Nations Committee on Economic, Social and Cultural Rights (CESCR) (1999) 'General comment no. 13: The right to education (article 13)'. United Nations Committee on Economic, Social and Cultural Rights at the Twenty-first Session, E/C.12/1999/10, 8 December 1999). [http://www.ohchr.org/EN/Issues/Education/Training/Compilation/Pages/d\)GeneralCommentNo13Therighttoeducation\(article13\)\(1999\).aspx](http://www.ohchr.org/EN/Issues/Education/Training/Compilation/Pages/d)GeneralCommentNo13Therighttoeducation(article13)(1999).aspx) (last accessed 9 June 2018).

United Nations (1966) 'International Covenant on Civil and Political Rights.' United Nations Treaty Series, vol. 999. <https://www.ohchr.org/Documents/ProfessionalInterest/ccpr.pdf> (last accessed 21 June 2018).

Webb, J.D.C, D.M. Elsom, and G.T. Meaden (2009) 'Severe hailstorms in Britain and Ireland, a climatological survey and hazard assessment'. *Atmospheric Research*. 93(1-3). pp. 587-606.

Welle, T. and J. Birkmann (2015) 'The World Risk Index. An approach to assess risk and vulnerability on a global scale'. *Journal of Extreme Events*. 2(1). 1550003 [34 pages].

Wiley, S. (2012) *Best Practice Guidelines: Engaging with Culturally and Linguistically Diverse (CALD) Communities in Times of Disaster, Final Report*. Christchurch City Council and Partnership on behalf of the Community Language Information Network Group (CLING). 44

<https://ccc.govt.nz/assets/Documents/Services/Civil-Defence/BestPracticeGuidelinesofDiverseCommunitiesDisasterMarch2012.pdf> (last accessed on 19 December 2017).

World Health Organisation (2012) *Toolkit for Assessing Health—System Capacity for Crisis Management—Part 1. User Manual*. WHO Regional Office for Europe, Copenhagen.
http://www.euro.who.int/_data/assets/pdf_file/0008/157886/e96187.pdf?ua=1 (last accessed on 22 January 2018).