18

HEALTHCARE INTERPRETING AS A SOCIALLY CONTEXTUALIZED ACTIVITY

Elaine Hsieh and Xiaolu Ma

In this chapter, healthcare interpreting is examined as a locally managed and contextually situated communicative – and ultimately, social – activity. Translators work with written texts, whereas interpreters work with spoken languages as they transfer information from one language to another. Both interpreting and translation are inextricably embedded in contexts, including interpersonal, organizational, socio-cultural, socio-political, and even geopolitical contexts. The contexts are often multilayered and interconnected. Due to the complexities of cross-cultural care and the goal-oriented nature of healthcare delivery (e.g., ensuring quality of care and improving patient outcomes), interpreters need to be sensitive to the structural norms and emergent dynamics of contexts in interpreter-mediated medical encounters.

Historical perspectives: the conduit model

Healthcare interpreting as a specialized area of research and practice emerged in the 1990s from the larger field of interpreting studies (Hsieh 2016). Because the early development of interpreting studies and the professionalization of interpreters are closely tied to legal contexts and international diplomacy (Baigorri-Jalón 2014), the codes of ethics for interpreters have been heavily influenced by the translator-as-conduit model (Dysart-Gale 2005).

The conduit model is not new in the larger fields of communication or Translation and Interpreting Studies. When first proposed, communication scholars imagined communication as a process in which concepts and meanings are transferred through a medium (e.g., language), acting as conduits from the message sender/encoder to the message recipient/decoder (Reddy 1979). To minimize the distortion or misunderstanding of meanings, the precision and consistency of the conduit are critical. As a conduit of communication, interpreters are confined to a very restrictive role because the translator-as-conduit model expects interpreters to be faithful to the original text, choose the correct vocabulary, and be neutral in the communicative process (Loach 2019). The interpreter is conceptualized as an information-transferring device, a *conduit* whose function is simply to render the

 DOI: 10.4324/9781003340843-22

meaning of the source text to the target text as if a perfectly equivalent word, sentence, or meaning exists in both languages. According to the conduit model, other speakers adopt an instrumental approach to interpreters, constructing interpreters as passive tools to be wielded by others – they are nothing more than the voices of others (Hsieh and Kramer 2012b). Rather than treating translation as an activity in which translators *can* and *do* play multiple functions, the conduit model expects interpreters to become invisible (Hsieh 2008).

Contexts also become irrelevant – after all, a perfect tool should always function the same way regardless of the settings or users involved. If the tool users are not able to achieve good and consistent outcomes, they need to find a better tool – a better conduit. Interpreters are also expected to have consistent and precise performance, regardless of their characteristics, clinical contexts, or the locations of the tasks. The interpreter characteristics, interpersonal dynamics, communicative objectives, socio-cultural contexts, or clinical settings were largely ignored in early research on interpreter-mediated medical encounters. The quality of healthcare interpreting was defined through accuracy in matching the source texts with the target texts by identifying errors of omission, addition, and substitution (e.g., Flores et al. 2003).

Researchers have long questioned the myths of invisible, non-interfering translators (Robinson 2001; Venuti 2018). The professionalization of community interpreters has provided valuable data and momentum to this line of research (Hsieh 2003). The conduit model of interpreting assumes that both parties share equal footing, and similar cultural and communicative norms. In addition, the model assumes that all parties are competent speakers who are able to communicate and negotiate their tasks, identities, and relationships.

Such assumptions are often problematic in environments in which interpreters mediate face-to-face interactions between officials and laypersons, meeting for a particular purpose at a public institution (e.g., healthcare settings; Wadensjö 1998). In interpreter-mediated medical encounters, healthcare providers and patients often experience significant differences in medical knowledge, access to resources, and institutional power (Hsieh 2016). In addition, in cross-cultural care, healthcare providers and patients may also share competing, if not conflicting, views of illness ideologies, cultural norms, and speech practices. In a review, Brisset et al. (2013: 131) concluded that 'non-literal translation appears to be a prerequisite for effective and accurate communication' in healthcare interpreting.

In short, a blind adherence to the conduit model in health contexts can inadvertently compromise the quality and equality of care (Hsieh 2016; Schwei et al. 2019). By recognizing the complexity of social and power dynamics in healthcare settings, interpreters and researchers have demonstrated the complexity of interpreter-mediated interactions, challenging the assumptions of and problems entailed by the conduit model (Álvaro Aranda et al. 2021; Benda et al. 2022; Brisset et al. 2013).

By recognizing interpreting as a communicative activity involving multiple parties with diverging identities, relationships, and tasks, researchers and practitioners have opened the possibilities and intervention points to address the quality of interpreter-mediated interactions (Angelelli 2020; Hsieh 2017). The goal-oriented nature of healthcare delivery (e.g., improving patient satisfaction, optimizing health outcomes, and ensuring the quality of care) allowed healthcare interpreters to reexamine their roles and functions beyond the texts uttered by other speakers. Consequently, new possibilities emerged:

> When all parties are viewed as active participants in the medical encounter, a new world is opened to researchers of bilingual health care. A wide variety of contextual factors […] become relevant to the process of interpreter-mediated interactions. […] Interpreters, along with their interpersonal relationships, diverse functions, emotions, and job-related hazards, become legitimate issues to be explored.
>
> (Hsieh 2016: 273)

Critical issues and current research

Participant characteristics and interpersonal dynamics

When healthcare interpreting is conceptualized as a communicative activity coordinated between multiple parties, the analytical focus shifts from the comparisons of texts to the co-construction of communicative frames. Several reviews have identified professional interpreters' positive impact on interpreter-mediated interactions (Heath et al. 2023; Karliner et al. 2007). Nevertheless, healthcare providers continue to rely on untrained interpreters despite mandatory interpreter legislation, an institutional preference for professional interpreters, and the availability of professional interpreters (Phelan 2018; Taira et al. 2020). This is because interpreters' professionalism is not the only criterion influencing healthcare providers' choice of interpreters.

Healthcare providers do not simply view interpreters as a single category but have developed a nuanced understanding and strategic use of different types of interpreters (e.g., professional interpreters, family interpreters, and bilingual medical staff) and interpreting modalities (i.e., the means for the delivery of interpreting; e.g., face-to-face, telephone, video, and artificial intelligence (AI)-assisted interpreting) to meet their objectives (Hsieh 2015). Different types of interpreters and interpreting modalities have unique impacts on the interactional dynamics of medical encounters. In fact, healthcare providers have been observed to adopt different communicative patterns when working with different types of interpreters (Leanza et al. 2010).

Communicative proxemics, patient trust, and therapeutic objectives, in addition to professional training, all shape healthcare providers' preferences when choosing interpreters and interpreting modalities (Hsieh 2015). For example, when disclosing a poor prognosis, a provider may choose a family interpreter who the patient trusts or an untrained, on-site interpreter who can provide emotional support rather than professional telephone interpreters who may be inadequate for responding to a patient's emotional needs (Hadziabdic et al. 2014). Family interpreters' dual role nature (e.g., caregiver) provides them with insights (e.g., patient's medical history), functions (e.g., advocacy), and relationships (e.g., trust) that can facilitate patient empowerment and healthcare delivery (Heath et al. 2023).

Researchers have also begun to examine how participants' *demographic characteristics* can impact provider-patient interactions. An emerging area of research is the impacts of *demographic concordance* in interpreter-mediated medical encounters. Minority patients rated their physicians, medical care, and overall satisfaction higher when they shared the same race as their physicians (LaVeist and Nuru-Jeter 2002). A review concluded that the effect of provider-patient gender concordance in medical encounters was real but 'typically small in magnitude' (Street 2002: 205).

Interpreters' gender, nationality, religion, and political beliefs may also impact their interpreting strategies. For example, because some cultures are sensitive to gender roles, it is possible that participants' *gender* may impact the interactional dynamics and quality of care. Bischoff et al. (2008) found that the presence of a professional interpreter may reduce gender-related communication barriers in healthcare settings. Acosta Vicente (2023) noted that cultural norms may shape patient expectations and communication dynamics in response to interpreters' gender or provider-patient-interpreter gender concordance. Similarly, interpreters' *political beliefs* may impact their interpreting strategies. People who share the same language may not share the same political beliefs and linguistic norms. For example, Mandarin-speaking interpreters from China may have different interpreting strategies, in addition to linguistic norms, from Mandarin-speaking interpreters from Taiwan, not to mention the potential tensions when working with patients who hold opposing political views (Chang 2021). Recently, researchers have examined how *activist interpreting* (i.e., interpreting in contexts in support of political agendas and struggles, e.g., assisting patients in abortion clinics or refugees who experienced political persecution) may shape interpreters' communicative strategies, impacting the interpersonal dynamics of specific interactions and the contour of social justice at the societal level (Boéri 2023; Gould and Tahmasebian 2020).

By recognizing interpreters as active participants rather than passive tools in provider-patient interactions, interpreters are humanized with their unique characteristics, perspectives, and needs. As researchers investigate how interpreters can impact (and can be impacted by) healthcare delivery, one of the growing areas of research is the emotional work and functions interpreters serve in community settings (Hsieh and Nicodemus 2015; Theys et al. 2019). Interpreters' emotion work can impact not only the interpersonal dynamics of provider-patient interactions but also the quality of care (Krystallidou et al. 2018; Theys et al. 2022). Gutierrez et al. (2019: 898) noted that interpreters adopted specific strategies (e.g., contextualization, encouragement, checking comprehension, endearment, and softening) to provide empathic communication and 'situate the clinicians' statement within the contexts of the larger interaction and make communication of results more accessible, personalized, and supportive for families.'

Interpreters can be impacted by the interpersonal dynamics of provider-patient interactions. The recent investigations on interpreters' distress when working with refugees and patients who have traumatic experiences (Green et al. 2012; Splevins et al. 2010) demonstrated the interactive and interdependent nature of interpreter-mediated medical encounters. Interpreters are particularly vulnerable to vicarious trauma and distress due to their use of the first-person interpreting style (e.g., saying, 'I was raped,' rather than 'the patient said she was raped'), their shared life experiences (e.g., experiences as refugees and immigrants), and their low status within the institutional hierarchy (Darroch and Dempsey 2016; Lim et al. 2022). However, interpreters also have reported a sense of resilience and empowerment after experiencing distress when interpreting refugee trauma narratives (Simms et al. 2021). In short, interpreters are not passive tools in medical encounters but active participants who integrate meanings through social interactions.

Healthcare settings as a system-level structure

Another context that researchers have just begun to explore is how *clinical specialties* and contexts may require different types of interpreting strategies. When looking at the codes of

ethics for healthcare interpreters, one may assume that good healthcare interpreting looks the same and relies on the same set of practices and skills. However, different clinical specialties often require healthcare providers to adopt different roles and relationships with their patients to achieve short-term tasks and long-term goals (Hsieh 2015; Hsieh and Terui 2015). For example, emergency physicians may be more concerned about the speed of information solicited for medical decision-making rather than maintaining a trusting, supportive relationship with the patient (Cox and Lázaro Gutiérrez 2016; Taira et al. 2020). By contrast, a mental healthcare provider may view provider-patient trust as a necessary element to achieve all therapeutic objectives (Chang et al. 2021). An obstetrician may shift from a casual, comforting chat during a check-up to an all-hands-on-deck emergency based on a sudden change in the fetal heartbeat. As a result, successful interpreting is dependent on interpreters' ability to respond to the emergent shifts in healthcare providers' and patients' communicative goals by adopting different roles, functions, and strategies in interpreter-mediated encounters (Hsieh and Kramer 2012a; Suarez et al. 2021).

Two issues are particularly important here. First, studies have demonstrated that healthcare providers, regardless of their clinical specialties, share some universal expectations for healthcare interpreters (René de Cotret et al. 2020). On the one hand, all healthcare providers expect interpreters to act as trained, independent professionals (i.e., capable of making unbiased decisions and interventions; Hsieh et al. 2013). On the other hand, they also expect interpreters to act as their proxy, assisting them in their communicative goals (Hsieh et al. 2013). However, healthcare providers' communicative goals are not necessarily limited to their therapeutic objectives. Healthcare providers' goals can include identity goals (e.g., being a caring expert) and relational goals (e.g., developing a strong bond with the patient) as well. For example, an obstetrician explained, 'If I walk in [to the room] and I like my patient's shoes, I'd say, "OH, I LOVE your shoes! They are so cute [high cheery tone]." […] Some of [the interpreters] go like, "Yeah, haha." I'm like, "NO! Tell her! I like her shoes!!" ' (Hsieh and Hong 2010: 195). Because healthcare providers rely on healthcare interpreters to construct their identities and relationships in clinical encounters, providers need to collaborate and coordinate with interpreters for relationship-building with patients (Leanza et al. 2023).

Another interesting (and unexpected) issue is how different clinical specialties differ in their attitudes toward interpreters as a patient ally (Hsieh et al. 2013). Functioning as a patient ally involves behaviors that are traditionally considered problematic (e.g., advocating for patients, assisting patients outside of medical encounters, and providing emotional support). This is an area where interpreters often disagree on their roles and functions (Hsieh 2008). Many interpreters follow the traditional interpreter-as-conduit model and reject the patient ally function, arguing that such practices are necessary to protect patient agency and prioritize provider-patient relationships. However, others have reported that avoiding expected social norms and acting like a robot is not only awkward but also inappropriate in a place where a language-discordant patient can feel very alienated and disempowered. Recent studies have recognized the valuable roles interpreters can play as they actively manage their advocacy role, interpersonal dynamics, provider-patient-interpreter trust, and emotional needs in difficult conversations (Chatzidamianos et al. 2019; Gutierrez et al. 2019; Weaver et al. 2022).

In our studies, we found that nursing staff appreciate interpreters' functions as a patient ally; by contrast, mental healthcare providers are often wary, if not resistant, to

such practices (Hsieh et al. 2013). Rather than viewing such interpreting practices from a normative perspective (e.g., what is expected as an appropriate interaction between interpreters and patients based on social norms), researchers noted that it is the *therapeutic objectives* held by healthcare providers that create diverging demands and expectations for interpreters (Chang et al. 2021; Hsieh et al. 2013). Because nurses' tasks often include providing emotional support, an interpreter who is attentive in providing a human touch to all aspects of care is complementary to a nurse's objectives. By contrast, because mental healthcare providers may treat patients who experience past trauma (e.g., losing family members in wars or violent events), an interpreter's simple greeting (e.g., 'Where are you from? Do you have kids?') risks triggering an episode or compromises prior therapeutic improvements.

In summary, the literature suggests that successful interpreter-mediated medical encounters rely on interpreters' ability to be flexible and adaptive to the diverging clinical demands (e.g., clinical specialties and therapeutic objectives) and the emergent nature of provider-patient communication (e.g., shifts in tasks, identities, and relationships). Recent studies also suggest that healthcare providers do not always react negatively when interpreters disagree with them or challenge their communicative goals, especially when healthcare interpreters do so to protect the quality and equality of care (Hsieh 2016).

Social and historical contexts of language barriers

Language barriers are more than an obstacle to effective communication. Language barriers are situated in larger social and historical contexts. Trust, control, and power are three common challenges in bilingual health communication:

> Trust and control issues take place within the relation (and its dynamics) between patients, interpreters and practitioners. These issues are notably the expression of power struggles occurring in broader contexts, such as healthcare institutions and the society at large, with its political choices that affect languages, minorities, refugees, etc.
>
> (Brisset et al. 2013: 136)

As researchers explore the meanings and impacts of language barriers, failure to appreciate larger contexts may limit their investigations and solutions.

Host community-patient dynamics is intertwined with patients' access, process, and outcomes of care. Depending on the social, cultural, and historical contexts of the host community, a patient's language, culture, and race may shape his/her healthcare experiences. Although language-discordant patients (i.e., patients who do not share the same language as the host community) are often perceived to be a part of the vulnerable populations susceptible to discrimination and marginalization in healthcare settings, this is not necessarily the case for all patients (Terui and Hsieh 2022).

Language barriers do not mean the same thing for language-discordant patients, even when they are in the same host community or speak the same language. For example, in Taiwan, a German-speaking patient is more likely to receive a privileged status than an Indonesian-speaking patient (Lan 2011). Similarly, in the United States, a white patient from Spain is unlikely to have the same healthcare experiences as a non-white patient from Guatemala, even though both speak Spanish. When reviewing the impact of the Civil

Rights Act of 1964, Rose (2014: 211) concluded, 'Language is not race-neutral. It is race laden.' For some patients, their language discordant status signals their privileged status and compels the locals to accommodate. By contrast, others may find language barriers make them vulnerable to hidden discrimination and health disparities, requiring them to adopt unique strategies to negotiate their agency and power in a hostile environment (Canagarajah 2013).

Historically, following the conduit model, other speakers, rather than the interpreter, are responsible for addressing issues of disparities and injustice. Such practices can be problematic when a patient has low health literacy (e.g., lacks the knowledge to ask relevant questions) or has low agency (e.g., doesn't have the skills or confidence to advocate for oneself; Hsieh 2013; Hsieh and Kramer 2012b). Similarly, structural privilege and discrimination can be invisible to both healthcare providers and patients. As a result, an interpreter-as-conduit model is likely to reinforce and maintain the structural inequity and injustice within the system (Loach 2019).

Quality and equality of care are not abstract concepts. Successful interpreter-mediated medical encounters are dependent on interpreters' ability to be sensitive to the meanings exchanged in provider-patient interactions and to be vigilant against how the host community-patient dynamics can impact the quality and equality of care (Terui and Hsieh 2022). In interpreter-mediated encounters, the communicative process can be an essential indicator of the quality of care (e.g., interpreters should maintain transparency and ensure that all speakers are able to exercise agency and control over the communicative and/or decision-making process). For language-discordant patients, quality of care is intertwined with equality of care (i.e., the extent to which language-discordant populations share comparable access to and effectiveness of care with language-concordant populations; Diamond et al. 2019; Rose 2014). Healthcare interpreters are essential in helping both the healthcare providers and patients negotiate the meanings and outcomes of quality and equality of care.

More recently, researchers have argued that *inclusive policies* can have positive impacts on language-discordant patients and empower them beyond clinical encounters. The professionalization of healthcare interpreters facilitated the call to reduce the use (if not to exclude) of non-professionally trained interpreters. However, in a review, Pollock (2020) concluded that existing policies and practices in the United Kingdom for language-discordant patients increase the power imbalance between healthcare providers and patients. Pollock (2020) argued that allowing family interpreters in healthcare settings can be valuable to support patient empowerment and quality of care.

Although many have raised concerns about relying on family interpreters, especially bilingual children, in healthcare settings, ethicists have acknowledged the potential problem of imposing Western bioethics and values without recognizing the unique relationships and responsibilities these children hold in immigrant families (Green et al. 2005). For example, when bilingual children serve as interpreters for their Spanish-speaking parents, they adopt a team-effort model, working together as a team to utilize both parties' strengths, compensate for partner limitations, and achieve mutually desirable outcomes (Guntzviller et al. 2017). Bilingual children work to enhance their parents' self-efficacy, while their parents assist in improving the children's health literacy. The bond is so powerful that Spanish-speaking mothers' support for their children's role as family interpreters is a protective factor against these low-income, bilingual adolescents' depression (Guntzviller and Wang 2019). In other words, bilingual children's role as interpreters for their families may not

only facilitate the quality of care but also provide strength and resilience to immigrant families as a whole.

Emerging technologies, including mobile apps for voice-to-voice translations and AI translations (e.g., Google Translate and Babeldr) are revolutionizing healthcare delivery (Panayiotou et al. 2020). Mobile technologies have made it possible to offer interpreting services at a scale that was unimaginable before (for a critical review of technology-based interpreters, see Hsieh 2016). Australia was the first country to introduce telephone interpreting services in 1973 (Mikkelson 2003). The first telephone interpreting services in the United States were offered in 1981 (Kelly 2007). As of 2023, LanguageLine Solutions (2023), a technology-based interpreting agency, provides 75 million interpreting calls a year. With 20,000+ professional interpreters, LanguageLine offers 24/7/365 interpreting services in 240+ languages in less than 30 seconds, including 40+ on-demand video interpreting languages (LanguageLine Solutions 2023). The availability of technologies has transformed localized interpreting activities into globalized connections.

Interpreters used to be bilingual and bicultural sojourners in local communities in previous generations, but technology has made it possible for people to learn a foreign language and provide interpreting services without leaving their home countries. As a result, for cost-saving measures, an interpreting service provider may use a Chinese–English interpreter who has never left China to interpret for Chinese living in the United Kingdom, the United States, or Australia (Kelly 2007). However, such an instrumental use of interpreters' linguistic-transferring functions can be problematic when language-discordant patients also need to navigate complex cultural and healthcare systems in their host community. It is unclear to what extent these non-sojourner interpreters are able to understand, empathize, or assist patients in drastically different cultural and healthcare environments in different countries or social systems that are also foreign to them.

AI translations are also changing the landscape of healthcare interpreting. For example, Google Translate provides voice-to-voice, immediate interpretation services free of charge and is readily assessable through mobile phones. Studies have investigated whether these translation apps are appropriate and effective tools for healthcare delivery (Panayiotou et al. 2019), including communicating with language-discordant patients in the emergency department (Khoong et al. 2019; Taira et al. 2021) and during awake intubation (Kapoor et al. 2020). Unlike human interpreters who may be able to actively observe the surrounding contexts, intervene when appropriate (e.g., asking clarification questions or suggest better ways to disclose bad news), and evaluate through common sense, translation apps, at their current stage, are limited to its linguistic-transferring functions and can be vulnerable to serious errors (Quaglia 2022), resulting in clinically significant harm (Khoong et al. 2019). Compared to working with in-person interpreters, healthcare providers also lose some of their ability to assess the quality of the interpreting (e.g., monitoring interpreters' tone and emotion; Hsieh 2010) and to encourage patient participation (e.g., interpreters using nonverbal means to encourage patient participation; Krystallidou and Pype 2018) when using translation apps.

Because current translation apps predominately support one-way, instrumental communication (e.g., taking medical histories or offering discharge instructions), they may be effective in fulfilling healthcare providers' information needs (Narang et al. 2019). However, it is unclear whether a language-discordant patient can effectively address and advocate their needs and concerns (e.g., negotiating identities, relationships, or even illness ideologies)

while navigating a complex healthcare system through these apps (Birkenbeuel et al. 2021). Interestingly, a recent study found that elderly people may prefer fixed-phrase translation apps over real-time voice-to-voice mobile translation apps (Panayiotou et al. 2020). Fixed-phrased translation apps may provide elderly patients the option to ask questions or seek information that they otherwise lack the agency or health literacy to pursue (Hsieh 2013). From this perspective, the future of AI translations may require a balancing of various objectives and tensions between interpreters' conduit, cultural mediator, and patient advocate roles through a combination of fixed-phrased prompts and real-time translation.

The growing popularity of AI translations in healthcare settings has prompted researchers to raise concerns about *language imperialism and health equity*. Google is currently building AI translation models for 'underserved languages by leveraging massively multilingual models trained with supervised parallel data for over 100 high-resource languages and monolingual datasets for an additional 1000+ languages' (Synced 2022). Meta is also working to deploy high-quality translations between 200 languages, allowing low-resource languages without much data to be combined with better-regularized systems (Meta 2023). The convergence of various forms of technology (e.g., speech, graphic, and text recognition; mobile communication; and even smart home applications) will allow the owners of these linguistic data to have unprecedented access to language use in naturalistic settings and a wide range of contexts. By taking advantage of big data and AI technologies, AI translations aim at building 'a single neural network' that can be 'jointly trained to maximize the probability of a correct translation given a source sentence' (Bahdanau et al. 2016).

Global communities are only at the dawn of AI translations and will be witnessing a new age of language imperialism (and cultural loss; Adams 2021; Raley 2003). Rather than creating a neutral interlingua or Global English, AI translations are likely to favor some languages/cultures over others due to differences in the sizes of databases or the economic scale of its users. Currently, English, Arabic, and Chinese are the most intensively researched languages in AI translations (Poibeau 2017; Raley 2003). However, North American English is a more dominant variation compared to South African or Australian variations. Chinese corpora from mainland China would be favored over those from Hong Kong, Taiwan, and other Chinese-speaking countries and regions. As such, global communities may be at the early phase of linguistic and knowledge colonization as AI translations may worsen disparities and inequities around the world as the powerful and the rich are likely to have access to better quality translation and interpretation, resulting in greater access to information and resources. More importantly, unlike human translators who are purposeful and intentional with their translation strategies, AI translation can involve processes and procedures that are not known to human engineers (Buolamwini 2023; O'Neil 2016). It is important to be cautious of the potential impacts of such approaches to translation and to address access disparities of language-discordant patients.

Others have warned that cultural biases and discrimination can be perpetuated when a society relies on self-learning AI to provide automated translations because biases are often inherent in languages and our linguistic practices (Zou and Schiebinger 2018). AI's machine learning and deep learning algorithms have 'deterministic functionality and will pick up any tendencies that already exist in the data they train on' (Dickson 2018: 94). Leveraging high-resource languages with massive datasets to train translations of low-resource languages is likely to perpetuate the worldview, including logic and bias, inherent in these high-resource languages. Because data availability is unlikely to be equally distributed between different

countries/cultures, the countries or entities with better control and availability of data are likely to shape the performance (or consciousness) of AI, which will eventually shape the perceived reality of those who rely on AI to understand the world. More importantly, due to the obscure and expansive nature of AI, experts have warned that users are unlikely to detect the biases and prejudice inherent in AI translations (Howard and Borenstein 2018). If language and culture are intertwined, and one's language of choice can shape their perceived reality, as the Sapir–Whorf hypothesis suggested (Zlatev and Blomberg 2015), it is important to be sensitive to a world that is shaped by and the cultures lost to AI algorithms (Kramer et al. 2014). In the age of the AI market dominated by big tech companies like Microsoft, Google, and Amazon, the danger of unintentionally creating hegemony through AI translations cannot be ignored. Rather than creating a language barrier-free utopia, AI translations have the potential to reinforce disparities and prejudices that benefit the powerful but not the weak.

Cultural (re)construction as contexts

Because different cultures often hold different cultural consciousness and language ideologies, which can also be context-dependent (Hsieh 2022; Hsieh and Kramer 2021), language barriers are more than differences in providers' and patients' preferred languages. For example, Western culture views language as a tool for communication (i.e., an instrumental view of language); as such, having more information is empowering and facilitates decision-making (Hsieh and Kramer 2012b). As healthcare providers strive to optimize healthcare delivery through patient-centered care, information seeking is often viewed as an essential skill for communicative competence for patients (Cegala and Post 2009). However, not all cultures view the relationship between language and information through such a utilitarian, instrumental approach.

In some cultures, when certain things are uttered, the reality is evoked. Thus, for many cultures, to inform patients about their cancer diagnosis is to (1) invite cancer into their body, (2) put a clock on their life expectancy, or (3) take away hope (Rosenberg et al. 2017; Weaver et al. 2022; Yeung 2017). Importantly, these acts are not understood in a symbolic, metaphorical sense but are perceived as meaningful actions that transform reality (Hsieh and Terui 2015). In American English, some speech acts still hold such reality-transformative power. For example, before an umpire announces, 'Play ball,' balls thrown by a pitcher are just part of the practice, not the game. But after the announcement, any ball thrown by the pitcher counts toward the official scores. Imagine a culture that views language such that disclosing a patient's diagnosis and prognosis (e.g., disclosure of bad news) can not only inform but also *transform* reality (Hsieh and Kramer 2021; Kramer 2013; Smith 2003).

Importantly, the reality evoked by speech is equally real, powerful, and valid to both patients and healthcare providers. For example, when asked to find a way to balance family preferences and truth-telling to a dying patient, a physician responded, 'When I was in medical school, it was driven home to us that autonomy was the lynchpin concept. You're destroying my moral compass' (Solomon 1997: 90). To the physician, agreeing to such a compromise is reality-transformative with devastating consequences (e.g., becoming an unethical physician who offers substandard care). From this perspective, an interpreter-as-conduit model cannot be the only measure of effective and appropriate interpreting in

health contexts. Interpreters manage not only the meanings conveyed but also the reality evoked.

Future directions

This is an exciting time for researchers and practitioners of healthcare interpreting. As the field of interpreting studies moves beyond the conduit model, the interdisciplinary and applied nature of healthcare interpreting provides tremendous opportunities to engage in theory-oriented, evidence-based practice. Researchers can significantly extend existing lines of inquiries (e.g., which type/modality of interpreting is the 'best'?) to a more nuanced and expansive understanding of interpreter-mediated interactions (e.g., whether and how provider-patient-interpreter dynamics impact quality and equality of care during clinical encounters).

When researchers and practitioners acknowledge interpreters' active role and the interdependent nature of interpreter-mediated interactions, it is time to address the unique factors that contribute not only to the quality of care but also interpreters' well-being. By recognizing the larger sociohistorical contexts, future research may benefit from exploring the different ways in which interpreters can be attentive to different issues (e.g., privileged status vs. historical marginalization) as a result of host community-patient dynamics in order to protect the quality and equality of care. As interpreters recognize and examine the impacts of contexts, including interpersonal, organizational, and sociopolitical dynamics, that shape the process of interpreter-mediated interactions, interpreters become more than language and cultural brokers – they become essential members of a healthcare team, guarding and facilitating the quality and equality of care.

As emerging technologies become increasingly an integral part of and play a transformative role in healthcare delivery, researchers and practitioners need to be sensitive to the implications of their policies and practices. Healthcare institutions should aim to develop inclusive policies that empower marginalized and vulnerable communities and are responsive to cultural perspectives. Emerging technologies are likely to dramatically transform the roles and functions of interpreters, in addition to the geopolitical and linguistic powers of the global communities. Researchers and practitioners should be at the forefront of the development of technologies and policies, building an ethical future that supports diverse cultures and communities.

Further reading

Álvaro Aranda, C., Gutiérrez, R. L. and Li, S. 2021. 'Towards a Collaborative Structure of Interpreter-Mediated Medical Consultations: Complementing Functions between Healthcare Interpreters and Providers.' *Social Science & Medicine*, 269: 113529. www.sciencedirect.com/science/article/pii/S0277953620307486. (Accessed 22 January, 2024.)

This article contains a model for a team approach to provider-interpreter collaboration in clinical settings. The evidence-based study demonstrated that interpreters collaborate with healthcare providers and actively assume roles and responsibilities that are essential for patients to receive optimum care.

Downie, J. 2019. *Interpreters vs Machines: Can Interpreters Survive in an AI-Dominated World?* New York and London: Routledge.

This is an introduction and overview of the recent theories and future development on human and machine interpreting. It examines how technological advances create limitations and new possibilities for human interpreting.

Hsieh, E. 2020. 'The Politics of Translation and Interpretation in International Communication,' in Nussbaum, J. (ed), *Oxford Research Encyclopedia of Communication*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190228613.013.701.
This is an overview of four themes that explore the politics and political nature of translation and interpreting as a communicative activity: (1) the historical roles of translations and interpreters, (2) translation as a change agent, (3) language access as justice, and (4) technology as a solution to language barriers.

O'Neil, C. 2017. *The Era of Blind Faith in Big Data Must End*. www.ted.com/talks/cathy_o_neil_the_era_of_blind_faith_in_big_data_must_end. (Accessed 22 January, 2024.)
This is a TED talk on the impact of emerging technologies on social justice by mathematician and data scientist Cathy O'Neil. This talk provides a summary of O'Neil's book, *Weapons of Math Destruction* (2016), published by Crown.

Related topics

Translation as a social structure; Microsociology of translation; Translator studies and translators as social actors; Towards a translational sociology; Translation and military structures; Community translation as social action

References

Acosta Vicente, C. 2023. 'A Literature Review on Gender in Interpreting: Implications for Healthcare Interpreting,' in Lázaro Gutiérrez, R., and Álvaro Aranda, C. (eds), *New Trends in Healthcare Interpreting Studies: An Updated Review of Research in the Field*. Singapore: Springer, 41–60.

Adams, R. 2021. 'Can Artificial Intelligence Be Decolonized?' *Interdisciplinary Science Reviews*, 46(1–2): 176–97.

Álvaro Aranda, C., Gutiérrez, R.L., and Li, S. 2021. 'Towards a Collaborative Structure of Interpreter-Mediated Medical Consultations: Complementing Functions between Healthcare Interpreters and Providers.' *Social Science & Medicine*, 269: 113529. www.sciencedirect.com/science/article/pii/S0277953620307486. (Accessed 22 January, 2024.)

Angelelli, C.V. 2020. 'Community/Public-Service Interpreting as a Communicative Event: A Call for Shifting Teaching and Learning Foci,' *Translation and Translanguaging in Multilingual Contexts*, 6(2): 114–30.

Bahdanau, D., Cho, K. and Bengio, Y. 2016. 'Neural Machine Translation by Jointly Learning to Align and Translate,' *arXiv*: https://arxiv.org/abs/1409.0473. (Accessed 22 January, 2024.)

Baigorri-Jalón, J. 2014. *From Paris to Nuremberg: The Birth of Conference Interpreting*. Amsterdam: John Benjamins.

Benda, N.C., Bisantz, A.M., Butler, R.L., et al. 2022. 'The Active Role of Interpreters in Medical Discourse – an Observational Study in Emergency Medicine.' *Patient Education and Counseling*, 105(1): 62–73.

Birkenbeuel, J., Joyce, H., Sahyouni, R., et al. 2021. 'Google Translate in Healthcare: Preliminary Evaluation of Transcription, Translation and Speech Synthesis Accuracy.' *BMJ Innovations*, 7(2): 422–9.

Bischoff, A., Hudelson, P., and Bovier, P.A. 2008. 'Doctor-Patient Gender Concordance and Patient Satisfaction in Interpreter-Mediated Consultations: An Exploratory Study.' *Journal of Travel Medicine*, 15(1): 1–5.

Boéri, J. 2023. 'Steering Ethics toward Social Justice: A Model for a Meta-Ethics of Interpreting.' *Translation and Interpreting Studies*, 18(1): 1–26.

Brisset, C., Leanza, Y., and Laforest, K. 2013. 'Working with Interpreters in Health Care: A Systematic Review and Meta-Ethnography of Qualitative Studies.' *Patient Education and Counseling*, 91(2): 131–40.

Buolamwini, J. 2023. *Unmasking AI: My Mission to Protect What Is Human in a World of Machines*. New York: Random House.

Canagarajah, S. 2013. 'Agency and Power in Intercultural Communication: Negotiating English in Translocal Spaces.' *Language and Intercultural Communication*, 13(2): 202–24.

Cegala, D.J., and Post, D. M. 2009. 'The Impact of Patients' Participation on Physicians' Patient-Centered Communication.' *Patient Education and Counseling*, 77(2): 202–08.

Chang, D.F., Hsieh, E., Somerville, W.B., et al. 2021. 'Rethinking Interpreter Functions in Mental Health Services.' *Psychiatric Services*, 72(3): 353–7.

Chang, P. 2021. 'Identity/Ideology Matters in Cross-Strait Translation: A Case of Mandarin Chinese Versions of Peter Hessler's *River Town*,' in Shei, C. (ed.), *Taiwan: Manipulation of Ideology and Struggle for Identity*. New York and London: Routledge, 140–56.

Chatzidamianos, G., Fletcher, I., Wedlock, L., and Lever, R. 2019. 'Clinical Communication and the 'Triangle of Care' in Mental Health and Deafness: Sign Language Interpreters' Perspectives.' *Patient Education and Counseling*, 102(11): 2010–15.

Cox, A., and Lázaro Gutiérrez, R. 2016. 'Interpreting in the Emergency Department: How Context Matters for Practice,' in Federici, M.F. (ed.), *Mediating Emergencies and Conflicts: Frontline Translating and Interpreting*. Basingstoke: Palgrave Macmillan, 33–58.

Darroch, E., and Dempsey, R. 2016. 'Interpreters' Experiences of Transferential Dynamics, Vicarious Traumatisation, and Their Need for Support and Supervision: A Systematic Literature Review.' *The European Journal of Counseling Psychology*, 4(2): 166–90.

Diamond, L., Izquierdo, K., Canfield, D., Matsoukas, K., and Gany, F. 2019. 'A Systematic Review of the Impact of Patient–Physician Non-English Language Concordance on Quality of Care and Outcomes.' *Journal of General Internal Medicine*, 34(8): 1591–606.

Dickson, B. (2018) *Ai Has a Bias Problem, and It's Our Fault*. www.pcmag.com/news/artificial-intelligence-has-a-bias-problem-and-its-our-fault. (Accessed 22 January, 2024.)

Dysart-Gale, D. 2005. 'Communication Models, Professionalization, and the Work of Medical Interpreters.' *Health Communication*, 17(1): 91–103.

Flores, G., Barton Laws, M., Mayo, S.J., Zuckerman, B., Abreu, M., Medina, L., and Hardt, E.J. 2003. 'Errors in Medical Interpretation and Their Potential Clinical Consequences in Pediatric Encounters.' *Pediatrics*, 111(1): 6–14.

Gould, R.R., and Tahmasebian, K. 2020. *The Routledge Handbook of Translation and Activism*. London and New York: Routledge.

Green, H., Sperlinger, D., and Carswell, K. 2012. 'Too Close to Home? Experiences of Kurdish Refugee Interpreters Working in Uk Mental Health Services.' *Journal of Mental Health*, 21(3): 227–35.

Green, J., Free, C., Bhavnani, V., and Newman, T. 2005. 'Translators and Mediators: Bilingual Young People's Accounts of Their Interpreting Work in Health Care.' *Social Science & Medicine*, 60(9): 2097–110.

Guntzviller, L.M., Jensen, J.D., and Carreno, L.M. 2017. 'Latino Children's Ability to Interpret in Health Settings: A Parent–Child Dyadic Perspective on Child Health Literacy.' *Communication Monographs*, 84(2): 143–63.

Guntzviller, L.M., and Wang, N. 2019. 'Mother-Adolescent Communication in Low-Income, Latino Families During Language Brokering: Examining the Theory of Resilience and Relational Load.' *Journal of Family Communication*, 19(3): 228–42.

Gutierrez, A.M., Statham, E.E., Robinson, J.O., Slashinski, M.J., Scollon, S., Bergstrom, K.L., Street Jr., R.L., Parsons, D.W., Plon, S.E., and McGuire, A.L. 2019. 'Agents of Empathy: How Medical Interpreters Bridge Sociocultural Gaps in Genomic Sequencing Disclosures with Spanish-Speaking Families.' *Patient Education and Counseling*, 102(5): 895–901.

Hadziabdic, E., Albin, B., Heikkilä, K., and Hjelm, K. 2014. 'Family Members' Experiences of the Use of Interpreters in Healthcare.' *Primary Health Care Research and Development*, 15(2): 156–69.

Heath, M., Hvass, A.M.F., and Wejse, C.M. 2023. 'Interpreter Services and Effect on Healthcare – a Systematic Review of the Impact of Different Types of Interpreters on Patient Outcome.' *Journal of Migration and Health*, 7: 100162. www.sciencedirect.com/science/article/pii/S2666623523000120. (Accessed 22 January, 2024.)

Howard, A., and Borenstein, J. 2018. 'The Ugly Truth about Ourselves and Our Robot Creations: The Problem of Bias and Social Inequity.' *Science and Engineering Ethics*, 24(5): 1521–36.

Hsieh, E. 2003. 'The Importance of Liaison Interpreting in the Theoretical Development of Translation Studies,' *翻譯學研究集刊* [Studies of Translation and Interpretation], 8: 283–322.

Hsieh, E. 2008. '"I Am Not a Robot!" Interpreters' Views of Their Roles in Health Care Settings.' *Qualitative Health Research*, 18(10): 1367–83.

Hsieh, E. 2010. 'Provider-Interpreter Collaboration in Bilingual Health Care: Competitions of Control over Interpreter-Mediated Interactions.' *Patient Education and Counseling*, 78(2): 154–9.

Hsieh, E. 2013. 'Health Literacy and Patient Empowerment: The Role of Medical Interpreters in Bilingual Health Communication,' in Dutta, M.J., and Kreps, G.L. (eds), *Reducing Health Disparities: Communication Intervention*. New York: Peter Lang, 41–66.

Hsieh, E. 2015. 'Not Just "Getting By": Factors Influencing Providers' Choice of Interpreters.' *Journal of General Internal Medicine*, 30(1): 75–82.

Hsieh, E. 2016. *Bilingual Health Communication: Working with Interpreters in Cross-Cultural Care*. London and New York: Routledge.

Hsieh, E. 2017. 'Conceptualizing Bilingual Health Communication: A Theory-Based Approach to Interpreter-Mediated Medical Encounters,' in Jacobs, E.A., and Diamond, L.C. (eds), *Providing Health Care in the Context of Language Barriers: International Perspectives*. Bristol: Multilingual Matters, 35–55.

Hsieh, E. 2022. 'Intercultural Health Communication: Rethinking Culture in Health Communication,' in Thompson, T.L., and Harrington, N.G. (eds), *The Routledge Handbook of Health Communication*. London and New York: Routledge, 441–55.

Hsieh, E., and Hong, S.J. 2010. 'Not All Are Desired: Providers' Views on Interpreters' Emotional Support for Patients.' *Patient Education and Counseling*, 81(2): 192–7.

Hsieh, E., and Kramer, E.M. 2012a. 'The Clashes of Expert and Layman Talk: Constructing Meanings of Interpreter-Mediated Medical Encounters,' in Callahan, C. (ed.), *Communication, Comparative Cultures and Civilizations*. New York: Hampton, 19–44.

Hsieh, E., and Kramer, E.M. 2012b. 'Medical Interpreters as Tools: Dangers and Challenges in the Utilitarian Approach to Interpreters' Roles and Functions.' *Patient Education and Counseling*, 89(1): 158–62.

Hsieh, E., and Kramer, E.M. 2021. *Rethinking Culture in Health Communication: Social Interactions as Intercultural Encounters*. Hoboken, NJ: Wiley.

Hsieh, E., and Nicodemus, B. 2015. 'Conceptualizing Emotion in Healthcare Interpreting: A Normative Approach to Interpreters' Emotion Work.' *Patient Education and Counseling*, 98(12): 1474–81.

Hsieh, E., Pitaloka, D., and Johnson, A.J. 2013. 'Bilingual Health Communication: Distinctive Needs of Providers from Five Specialties.' *Health Communication*, 28(6): 557–67.

Hsieh, E., and Terui, S. 2015. 'Inherent Tensions and Challenges of Oncologist–Patient Communication: Implications for Interpreter Training in Health-Care Settings.' *Journal of Applied Communication Research*, 43(2): 141–62.

Kapoor, R., Truong, A.T., Vu, C.N., and Truong, D.-T. 2020. 'Successful Verbal Communication Using Google Translate to Facilitate Awake Intubation of a Patient with a Language Barrier: A Case Report.' *A&A Practice*, 14(4): 106–8.

Karliner, L.S., Jacobs, E.A., Chen, A.H., and Mutha, S. 2007. 'Do Professional Interpreters Improve Clinical Care for Patients with Limited English Proficiency? A Systematic Review of the Literature.' *Health Services Research*, 42(2): 727–54.

Kelly, N. 2007. *Telephone Interpreting: A Comprehensive Guide to the Profession*. Victoria, BC: Trafford.

Khoong, E.C., Steinbrook, E., Brown, C., and Fernandez, A. 2019. 'Assessing the Use of Google Translate for Spanish and Chinese Translations of Emergency Department Discharge Instructions.' *JAMA Internal Medicine*, 179(4): 580–2.

Kramer, E.M. 2013. 'Dimensional Accrual and Dissociation: An Introduction,' in Grace, J., and Kramer, E.M. (eds), *Communication, Comparative Cultures, and Civilizations*. New York: Hampton, 123–84.

Kramer, E.M., Adkins, G., Kim, S.H., and Miller, G. 2014. *Environmental Communication and the Extinction Vortex: Technology as Denial of Death*. New York: Hampton Press.

Krystallidou, D., and Pype, P. 2018. 'How Interpreters Influence Patient Participation in Medical Consultations: The Confluence of Verbal and Nonverbal Dimensions of Interpreter-Mediated Clinical Communication.' *Patient Education and Counseling*, 101(10): 1804–13.

Krystallidou, D., Remael, A., de Boe, E., Hendrickx, K., Tsakitzidis, G., van de Geuchte, S., and Pype, P. 2018. 'Investigating Empathy in Interpreter-Mediated Simulated Consultations: An Explorative Study.' *Patient Education and Counseling*, 101(1): 33–42.

Lan, P.-C. 2011. 'White Privilege, Language Capital and Cultural Ghettoisation: Western High-Skilled Migrants in Taiwan.' *Journal of Ethnic and Migration Studies*, 37(10): 1669–93.

LanguageLine Solutions. 2023. *Instantly Connect to Live, Professional Interpreters 24/7*. www.languageline.com/interpreting/languageline-app. (Accessed 22 January, 2024.)

LaVeist, T.A., and Nuru-Jeter, A. 2002. 'Is Doctor-Patient Race Concordance Associated with Greater Satisfaction with Care?' *Journal of Health and Social Behavior*, 43(3): 296–306.

Leanza, Y., Boivin, I., and Rosenberg, E. 2010. 'Interruptions and Resistance: A Comparison of Medical Consultations with Family and Trained Interpreters.' *Social Science & Medicine*, 70(12): 1888–95.

Leanza, Y., Larchanché, S., Rostirolla, D., Marcoux, A., and de Cotret, F.R. 2023. 'Improving Feeling of Control and Trust in Interpreter-Mediated Mental Health Consultations.' *American Journal of Orthopsychiatry*: 37956051. DOI: 10.1037/ort0000711.

Lim, P.S., Olen, A., Carballido, J.K., LiaBraaten, B.M., Sinnen, S.R., Balistreri, K.A., Tager, J.B., Rothschild, C.B., Scanlon, M.C., Hobart Davies, W., and Nordness, K. 2022. ' "We Need a Little Help": A Qualitative Study on Distress and Coping among Pediatric Medical Interpreters.' *Journal of Hospital Management and Health Policy*, 6: 36. https://doi.org/10.21037/jhmhp-22-23.

Loach, B.L. 2019. 'A Time to Speak and a Time to Keep Silent: Professional Ethics, Conscience, and the Medical Interpreter.' *Ethics, Medicine and Public Health*, 11: 52–9.

Meta. 2023. *No Language Left Behind: Driving Including through the Power of Ai Translation*. https://ai.meta.com/research/no-language-left-behind/. (Accessed 22 January, 2024.)

Mikkelson, H. 2003. 'Telephone Interpreting: Boon or Bane?,' in González, L.P. (ed.), *Speaking in Tongues: Language across Contexts and Users*. Valencia, Spain: Universitat de València, 251–69.

Narang, B., Park, S.-Y., Norrmén-Smith, I.O., Lange, M., Ocampo, A.J., Gany, F.M., and Diamond, L.C. 2019. 'The Use of a Mobile Application to Increase Access to Interpreters for Cancer Patients with Limited English Proficiency: A Pilot Study.' *Medical Care*, 57: 184–9.

O'Neil, C. 2016. *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*. New York: Crown.

Panayiotou, A., Gardner, A., Williams, S., et al. 2019. 'Language Translation Apps in Health Care Settings: Expert Opinion,' *JMIR Mhealth Uhealth*, 7: e11316. Available at: https://doi.org/10.2196/11316.

Panayiotou, A., Hwang, K., Williams, S., Zucchi, E., Mscitti-Meuter, M., My Goh, A., You, E., Wh Chong, T., Logiudice, D., Lin, X., Haralambous, B., and Batchelor, F. 2020. 'The Perceptions of Translation Apps for Everyday Health Care in Healthcare Workers and Older People: A Multi-Method Study.' *Journal of Clinical Nursing*, 29(17–18): 3516–26.

Phelan, M. 2018. 'Interpreter Provision, Medical Training and Ethics,' in Stone, C., and Leeson, L. (eds), *Interpreting and the Politics of Recognition*. London and New York: Routledge, 67–85.

Poibeau, T. 2017. *Machine Translation*. Cambridge, MA: The MIT Press.

Pollock, S. 2020. 'More Than Words Can Say: Why Health and Social Care Policy Makers Should Reconsider Their Position on Informal Interpreters.' *Critical Social Policy*, 41(1): 128–47.

Quaglia, S. 2022. *Death by Machine Translation?* https://slate.com/technology/2022/09/machine-translation-accuracy-government-danger.html. (Accessed 22 January, 2024.)

Raley, R. 2003. 'Machine Translation and Global English.' *The Yale Journal of Criticism*, 16(2): 291–313.

Reddy, M. 1979. 'The Conduit Metaphor.' *Metaphor and thought*, 2: 285–324.

René de Cotret, F., Brisset, C., and Leanza, Y. 2020. 'A Typology of Healthcare Interpreter Positionings: When "Neutral" Means "Proactive".' *Interpreting*, 23(1): 103–26.

Robinson, D. 2001. *Who Translates?: Translator Subjectivities Beyond Reason*. New York: State University of New York Press.

Rose, J.B.G. 2014. 'Race Inequity Fifty Years Later: Language Rights under the Civil Rights Act of 1964.' *Alabama Civil Rights and Civil Liberties Law Review*, 6: 167–212.

Rosenberg, A.R., Starks, H., Unguru, Y., Feudtner, C., Diekema, D. 2017. 'Truth Telling in the Setting of Cultural Differences and Incurable Pediatric Illness: A Review.' *JAMA Pediatrics*, 171(11): 1113–19.

Schwei, R.J., Guerrero, N., Small, A.L., and Jacobs, E.A. 2019. 'Physician Perceptions of the Types of Roles Interpreters Play in Limited English Proficient Pediatric Encounters and How They Evaluate the Quality of Interpretation.' *Primary Health Care Research & Development*, 20: E25. https://doi.org/10.1017/S1463423618000890.

Simms, J.V., Thelan, A.R., Domoff, S.E., and Meadows, E.A. 2021. 'An Examination of Vicarious Trauma among Refugee Mental Health Interpreters.' *Occupational Health Science*, 5: 581–601.

Smith, B. 2003. 'John Searle: From Speech Acts to Social Reality,' in Smith, B. (ed.), *John Searle*. Cambridge: Cambridge University Press, 1–33.

Solomon, M.Z. 1997. 'From What's Neutral to What's Meaningful: Reflections on a Study of Medical Interpreters.' *Journal of Clinical Ethics*, 8(1): 88–93.

Splevins, K.A., Cohen, K., Joseph, S., Murray, C., Bowley, J. 2010. 'Vicarious Posttraumatic Growth among Interpreters.' *Qualitative Health Research*, 20(12): 1705–16.

Street, R.L. 2002. 'Gender Differences in Health Care Provider–Patient Communication: Are They Due to Style, Stereotypes, or Accommodation?' *Patient Education and Counseling*, 48(3): 201–6.

Suarez, N.R.E., Urtecho, M., Jubran, S., Yeow, M., Wilson, M.E., Boehmer, K.R., and Barwise, A.K. 2021. 'The Roles of Medical Interpreters in Intensive Care Unit Communication: A Qualitative Study.' *Patient Education and Counseling*, 104(5): 1100–8.

Synced. 2022. *Google Research Team Builds Practical Machine Translation Systems for 1000+ Languages*. https://syncedreview.com/2022/05/12/google-research-team-builds-practical-machine-translation-systems-for-1000-languages/. (Accessed 22 January, 2024.)

Taira, B.R., Kreger, V., Orue, A., and Diamond, L.C. 2021. 'A Pragmatic Assessment of Google Translate for Emergency Department Instructions.' *Journal of General Internal Medicine*, 36(11): 3361–5.

Taira, B.R., Torres, J., Nguyen, A., Guo, R., and Samra, S. 2020. 'Language Assistance for the Care of Limited English Proficiency (Lep) Patients in the Emergency Department: A Survey of Providers and Staff.' *Journal of Immigrant and Minority Health*, 22(3): 439–47.

Terui, S., and Hsieh, E. 2022. 'Language Barriers as a Social Phenomenon: Distinctive Impacts on Health Communication in Japan and the United States,' in Kim, D.K.D., and Kreps, G.L. (eds), *Global Health Communication for Immigrants and Refugees*. New York and London: Routledge, 63–77.

Theys, L., Krystallidou, D., Salaets, H., Wermuth, C., and Pype, P. 2019. 'Emotion Work in Interpreter-Mediated Consultations: A Systematic Literature Review.' *Patient Education and Counseling*, 103(1): 33–43.

Theys, L., Wermuth, C., Hsieh, E., Krystallidou, D., Pype, P., and Salaets, H. 2022. 'Doctors, Patients, and Interpreters' Views on the Co-Construction of Empathic Communication in Interpreter-Mediated Consultations: A Qualitative Content Analysis of Video Stimulated Recall Interviews.' *Qualitative Health Research*, 32(12): 1843–57.

Venuti, L. 2018. *The Translator's Invisibility: A History of Translation*. New York and London: Routledge.

Wadensjö, C. 1998. *Interpreting as Interaction*. London: Longman.

Weaver, M.S., Roeth, A., Navaneethan, H., Shostrom, V.K., and Contreras-Nourse, M. 2022. 'Translating Pediatric Hospital Interpreters' Feedback from Difficult Conversations into Improved Communication.' *Journal of Palliative Care*, 37(2): 159–63.

Yeung, C.W. 2017. 'The Ethics of Collusion and Nondisclosure in Cancer Care: A Perspective from Professional Psychology.' *Professional Psychology: Research and Practice*, 48(1): 46–53.

Zlatev, J., and Blomberg, J. 2015. 'Language May Indeed Influence Thought.' *Frontiers in Psychology*, 6. https://doi.org/10.3389/fpsyg.2015.01631. (Accessed 22 January, 2024.)

Zou, J., and Schiebinger, L. 2018. 'AI Can Be Sexist and Racist – It Is Time to Make It Fair.' *Nature*, 559(7714): 324–6.