

This special issue has its origins and futures elsewhere. Instead of rhetorics of pathology and impairment, instead of the objectification that fuels “inspiration porn” (Young, 2014), instead of unconsciously centering default users, this special issue asks us to reimagine disability in our practices, pedagogies, and theories. Consider how recent research on *Deaf Gain* challenges the belief that deafness can only be a tragic absence, a hearing loss. What does it mean for our teaching and practice to reimagine Deafness 1) as an identity within Deaf Culture, and 2) as a positive expression of biocultural diversity? In their edited collection on *Deaf Gain*, H-Dirksen L. Bauman and Joseph Murray (2014) summarize some of the key attributes of Deaf Gain: “enhanced and prolonged eye contact, intersubjective engagement, collectivist social patterns, transnational bonds, less auditory distraction, and acute visuospatial aptitudes” that “contribute to a new perspective on what it means to be deaf” (p. xxvii).

This new perspective can be generative for technical and professional communicators. As an expression of biocultural diversity and a critique of normalcy, *Deaf Gain* can help disrupt fundamental assumptions and dichotomies that support institutional cultures of accommodation and remediation. In multimodal composition, a Deaf perspective can challenge certain conceptions and constructions of time and space as ableist. How readers experience closed captions as timed-based reading events, for example, can form the basis of new theories of reading speed (see Zdenek, 2015, pp. 141-182). Surprisingly, reading speed has received little attention in our field outside of primary school contexts. Driven by the preferences and abilities of caption viewers, especially viewers who are deaf and hard of hearing, new theories of reading speed can be integrated into research studies on how audio, video, and text (on-screen titles, text annotations, captions) intersect and overlap for diverse users. Moreover, studies of film space from Deaf perspectives can inform film design. Janine Butler (2017) has explored how the concept of “DeafSpace”—made popular in Gallaudet University’s philosophy of designing the built environment specifically for students and faculty who communicate in sign language—can reshape how film space is allocated and designed. With their expertise in usability, including user studies and eye tracking, and new theories of DeafSpace and crip time (Samuels, 2017), technical communicators can be at the forefront of studies of reading, timing, placement, and design in multimodal composition.

When we approach accessibility from the bottom up, when digital access is integrated and baked-in, we establish new directions and futures for the field. In caption studies, for example, we usually take for granted that words are good enough substitutes for sounds. As I wrote in *Reading Sounds* (2015): “It usually goes without saying in captioning discussions and style guides that every film soundscape—no matter how complex, transcendent, or immersive—can always be translated into words. Is it problematic to assume that language is always up to the task? Is captioning really just a simple matter of translating across modes? Does every sonic event communicate semiotically?” (p. 139). More recently, I’ve been reflecting on a new question: What would audiovisual accessibility look and feel like if captioners were unconstrained by the medium of writing and the act of transcription? This question, though admittedly idealistic, grows out of my increasing awareness of the limitations of traditional captions to adequately address several hard problems: 1) Distinguishing multiple speakers in the same scene, 2) Signaling sonic dimensionality (near/far sounds, loud/quiet sounds), 3) Clarifying sustained or continuous sounds,

and 4) Reinforcing the meaning of sound effects, ambience, and music (see Zdenek, 2018).

To address these problems, I have experimented with novel forms of captioning: typefaces, color, icons, loops, screen placement, avatars, and special effects (Zdenek, 2018). My goal was not simply to create more aesthetic captions but to express meaning—to embody it—through the power of form. For example, the captioned lullaby sung by ghostly children in a horror movie might literally materialize out of the smoky ether. The sustained heartbeat sounds in a training video or tense movie scene might be visualized as an electrocardiogram readout in the corner of the screen. The speech captions of a fictional character who is based on a real politician might be rendered in the typeface or visual style of the politician’s campaign rhetoric. Repetitive “cross now” announcements emanating from a futuristic crosswalk sign in a science fiction movie might be visualized as a flashing icon in the creative style of the sign itself. Put simply, embodied captions compel us to reimagine digital access for every sighted viewer. Too often, accommodations made in the name of users with disabilities, such as closed captioning, are 1) defined narrowly, technically, and objectively, and 2) positioned as add-ons for a presumed finished product. Even as captioning is held up as one cornerstone of universal design, it hasn’t been well integrated into our processes of production (Udo & Fels, 2010). When we experiment with alternative and disruptive forms of digital access, we question narrow definitions of captioning as mere transcription and, more importantly, start to imagine different disability and accessibility futures (see Kafer, 2013, pp. 3, 16) that put captioning in closer contact with our field’s interests in visual rhetoric, multimodal composition, data visualization, and sound studies.

Experimental captions offer new possibilities, but they aren’t intended to supplant the power and efficiency of words to create accessible content. Writing will continue to remain foundational to the practice (and art) of designing accessible texts. That’s because the web is increasingly powered by images and video, which are made accessible when transformed into writing. According to Cisco’s projections, Global “IP video traffic will be 82 percent of all IP traffic (both business and consumer) by 2022, up from 75 percent in 2017” (Cisco, 2018). Netflix alone is responsible for more than one-third of all internet traffic in North America (Luckerson, 2015). On social media platforms, images reign, with “more than 2 billion photos uploaded” each day to Facebook, Messenger, Instagram, and WhatsApp (Wu, Wieland, Farivar, & Schiller, 2017). Even Twitter, with its origins in text-only communication and strict character limits, “is quickly morphing from a primarily text-based medium to a primarily multimedia one” (Ringel Morris et al. 2016, p. 5515).

To make multimedia accessible, we need writing. We need professional writers who are trained in the art and rhetoric of accessible description. Accessible texts are composed with and transformed into words: image descriptions, captions, large print and magnified texts, transcripts, audio descriptions, and more. In the technical and legalistic language of web accessibility guidelines, captions and other forms of access are considered “text alternatives” for “non-text content” (World Wide Web Consortium, 2018b). Electronic texts possess immense power. They make media perceivable for a wide range of users. They are “presentation neutral,” which means that they can be rendered according to the sensory needs of the user: “visually, auditorily, tactilely, or any combination” (World Wide Web Consortium, 2016). Texts can be enlarged (large print versions), synced with time-based media

(captions), spoken by a screen reader or speech output program, transformed into tactile signals (refreshable braille displays), and more. Images, audio, and video do not possess the same versatility.

The future of an accessible web will continue to depend on artful forms of writing even as internet traffic is consumed by non-text content. We should teach students to approach digital accessibility as a literate practice and not simply a technical exercise in coding, transcribing, or tagging content. Web accessibility guidelines focus on the finished product: “text,” “text alternatives,” and “non-text content.” Technical and professional communicators can approach accessibility with a writer’s sensibility and through the principles of style, rhetoric, art, design, and audience analysis. Web accessibility experts—and the students we teach in our classes—must learn to think like writers who are sensitive to the needs of their audiences, the affordances of language, and the contexts and constraints of space and time in which they are working. We don’t usually discuss digital accessibility in these terms: literacy, writing, rhetoric, style. By putting writing and literacy at the center of an accessible web, we challenge dominant narratives about the web itself (that it is mostly driven by images and video) and make visible how writing fashions accessible user experiences. So much emphasis has been placed on the technical aspects of web accessibility, but we need to keep in mind that the web becomes legible for everyone principally through humanistic and rhetorical acts of reading and writing texts.

Automation has revolutionized and simplified the practice of making the web accessible. Advances in machine learning, image recognition, speech recognition, and web standards have produced powerful tools for captioning sounds (Google’s autocaptioning on YouTube), describing images (Facebook’s automatic alt text), creating accessible PDFs (Adobe’s accessibility wizard), writing and designing inclusive documents (Microsoft’s accessibility checkers for Office), serving content with learning management platforms (Ally for Canvas and Blackboard), and automatically checking websites against a set of accessibility standards (WebAIM’s WAVE, the Siteimprove Accessibility Checker, and many more). Tools, checkers, wizards, and automated processes raise the profile of web accessibility and, perhaps more importantly for writers and designers, simplify what can sometimes seem like a daunting, time-consuming, and complex process. But automated tools also give the false impression that accessibility is so easy a machine can do it.

Since 2016, Facebook has been generating “automatic alt text” by applying object recognition technology to the photos uploaded by users (Wu et al., 2017). Facebook’s algorithm generates alt text based on three categories: “people, objects, and scenes” (García, Paluri, & Wu, 2016). A fourth category, actions, was added in 2017 (Candela, 2017). An example of auto alt text for a photo in my Facebook feed is: “Image may contain: grass, tree, sky, outdoor and nature.” An example of auto alt text for a screenshot quote (image of text) in my Facebook feed is: “Image may contain: text.” The Facebook software produces a partial inventory of objects in each image but lacks a deeper rhetorical awareness of the image’s purpose and how it works with the surrounding contexts to make meaning. Alt text is not a list of objects, just as closed captioning is not a list of sounds. A complete description of a photo for the purposes of accessibility would not include a list of all the objects in that photo, if that were even possible, or even a list of all the actions performed by all the objects. Rather, alt text, like captioning, is a rhetorical

judgment made within a specific context and for a specific purpose. Image accessibility in the face of AI and automation needs, at the very least, to be evaluated by humans who can more effectively place images in their rhetorical contexts.

Image recognition technology is improving, but TPC practitioners and scholars should not cede control of rhetorical description to the machines or to the technicians. It isn’t yet clear how Facebook’s approach, which is based on recognizing and listing “all salient objects in the image” (Wu et al., 2017, p. 3) will be reconciled with the advice from web accessibility experts that “context is everything” (WebAIM, 2018).

IMAGINING DIFFERENT DISABILITY FUTURES

The three articles in this special issue offer new perspectives, collaborations, and avenues of research. In “Cultivating Virtuous Course Designers: Using Technical Communication to Reimagine Accessibility in Higher Education,” Sherena Huntsman, Jared Colton, and Christopher Phillips draw on virtue ethics to reconceive accessibility as a “habitual practice, part of one’s character.” Reporting on the results of an instructor survey, they explore the contours of an ethics of courage and justice for accessible course design. They also discuss the origins and goals of their “university partnership,” an exciting research collaboration between academics (Huntsman, Colton) and their campus’s IT accessibility coordinator (Phillips). Their partnership offers a new model for and a challenge to other higher education stakeholders to pursue collaborations between faculty and disability support staff.

In “Theorizing Lip Reading as Interface Design: The Gadfly of the Gaps,” Kevin Garrison develops a theory of lip reading that challenges fundamental concepts and binaries. Lip reading, Garrison argues, is not reading at all. A literacy of lip reading is predicated on rhetorically filling in gaps, not decoding information. Lip reading is contextual, synthetic, and dialectical. Garrison contrasts lip reading literacy with orality and print literacy, and briefly applies lip reading concepts to interface design. Lip reading is a new avenue of research for technical communication that offers a more nuanced and complex picture of communication and interface design.

In “Designing for Intersectional, Interdependent Accessibility: A Case Study of Multilingual Technical Content Creation,” Laura Gonzales links the topic of multimodal access to language diversity, offering new challenges for accessibility in TPC. Gonzales explores how the creative, embodied, intersectional work of translators can be effectively subtitled as they converse about their work in multiple languages. How multilingual speech can be made accessible to viewers (some of whom may be monolingual) is a complex challenge that requires new, creative solutions.

Disability studies offers ways of moving and thinking differently in the world for practitioners and scholars. By defining disability studies as a critical methodology “rather than a subject,” Julie A. Minich (2016) shifts the frame to include “not bodily or mental impairments but the social norms that define particular attributes as impairments, as well as the social conditions that concentrate stigmatized attributes in particular populations” (para. 6). Minich (2016) provides a few examples of “topics for disability scholarship...that have been inconsistently or only recently recognized in the field”:

fatness, STDs, mood disorders, addictions, non-normative family structures, intimate partner violence, police brutality, neurological differences, pregnancy, cancer, aging, asthma, and diabetes, to name just a few. And I must emphasize that this scrutiny of normative ideologies should occur not for its own sake but *with the goal of producing knowledge in support of justice for people with stigmatized bodies and minds.* (para. 6)

TPC scholars, especially rhetoricians of health and medicine, are already actively engaged with many of these topics, even if they are not all drawing on a disability framework. But the specific topics matter less than what disability studies offers as a methodology—that is, grounding practice and theory in a critical orientation towards social justice. Jina Kim (2017) explains that Minich’s (2016) disability methodology is “not attuned to the same questions of representation and legibility—what can currently be recognized as disability—but rather to the systemic de-valuation (and oftentimes, subsequent disablement) of non-normative bodies and minds” (Kim, 2017, para. 1). For the field of technical and professional communication, a disability methodology can help reframe digital access as a civil right instead of a mere legal obligation. Through the “scrutiny of normative ideologies,” disability studies in technical and professional communication can explain how ableist practices are normalized but also how we can work together for a more accessible future.

ACKNOWLEDGEMENTS

I would like to thank the twelve anonymous peer reviewers who gave their valuable time and expertise at a critical stage. Their feedback was immensely valuable. I would also like to thank Kirk St. Amant, who patiently and expertly guided me through this process over the course of eighteen months. Finally, the contributors to this special issue—Jared Colton, Kevin Garrison, Laura Gonzales, Sherena Huntsman, and Christopher Phillips—were a pleasure to work with. I’m honored to have played a small role in bringing their new and exciting ideas to publication.

A NOTE ON ACCESSIBILITY

The issue’s contributors carefully prepared their Word documents to be accessible when converted to PDFs by including alt text for figures and semantic tagging for headings. Access to these features was lost when the Word files were formatted to the journal’s specifications. As a workaround, I integrated authors’ alt text into their figure captions. If any reader would like to receive versions of the articles from this special issue that have been optimized for screen reader accessibility, please contact Sean Zdenek (zdenek@udel.edu).

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Designing for Intersectional, Interdependent Accessibility: A Case Study of Multilingual Technical Content Creation

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ABSTRACT

Drawing on narratives (Jones, 2016; Jones & Walton, 2018) from bilingual technical communication projects, this article makes a case for the importance of considering language access and accessibility in crafting and sharing digital research. Connecting conversations in disability studies and language diversity, the author emphasizes how an interdependent (Price, 2011; Price & Kerchbaum, 2016), intersectional (Crenshaw, 1989; Medina & Haas, 2018) orientation to access through disability studies and translation can help technical communication researchers to design and disseminate digital research that is accessible to audiences from various linguistic backgrounds and who also identify with various dis/abilities.

INTRODUCTION: CAPTIONS, SUBTITLES, AND LANGUAGE ACCESSIBILITY

I began to understand the importance and complexity of accessibility in bilingual media when I relied entirely on closed captions and subtitles to understand what I was watching. As an elementary-school Spanish-speaking student learning English for the first time, I first watched all English-language television and movies with both Spanish subtitles and closed captions, making sense of visual and aural information (e.g., words, sounds, expressions) through written words in Spanish. As my English language skills improved, I transitioned to watching English language programs with English subtitles, using the alphabetic transcription of dialogue to verify the English words that I was hearing, to continue practicing my pronunciation, and to learn new cultural practices and phrases. Like many language learners, captions and subtitles played different yet complementary roles in my transition to learning a new language (Winke, Gass, & Sydorenko, 2010; Vanderplank, 1993).

Captioning and subtitling have different definitions and extended disciplinary and professional histories that have been connected to issues of accessibility and language learning in various ways. Markham and Peter (2003) explain that “captions provide reading input to augment the pictorial and audio input supplied by various forms of commonly used video technology,” providing more than mere transcripts of voiced interactions (p. 332). Zdenek (2015) “distinguish[es] between subtitling and closed captioning, reserving the former for on-screen translations of the spoken language into the reader’s written language and the latter for the full complement of sounds, both speech and nonspeech, that need to be made accessible to deaf and hard-of-hearing viewers” (p. 35). Although Zdenek (2015) rightfully emphasizes the fact that closed captions are intended to make content accessible to deaf and hard-of-hearing viewers, since “closed captioning usually implies a deaf or hard-of-hearing audience” while “subtitling usually implies a hearing audience that doesn’t understand the target language and is in need of on-screen translations”(p. 35), research has shown that captions are also of value to hearing individuals learning or practicing new

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Communication Design Quarterly. ACM SIGDOC, New York, USA.
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languages (Markham, 1999; Winke, Gass, & Sydorenjo, 2010). In her discussion of captioning practices as pedagogical tools, Butler (2018) further clarifies that “when we incorporate captions into our video editing process, we design pedagogical spaces in which we do not accommodate different ways of communicating; instead, we create spaces in which all individuals—deaf, hearing, and otherwise—have a role in the design of communication” (n.pag.). As disability studies (DS) scholars argue, creating accessible content that centers disability (e.g., captioning all media) can be beneficial to all audiences and participants (Butler, 2017; Hitt & Garrett, 2014; Palmeri, 2006; Price, 2011; Price & Kerchbaum, 2016).

It is at this intersection of subtitling, captioning, linguistic transitions, and disability studies that my attention to creating bilingual digital media and conducting bilingual, accessible digital research has been recently emerging. As a bilingual technical communication researcher and translator who publishes digital research in both Spanish and English (see Gonzales, 2017; Gonzales, 2018), I have been grappling with the task and potential of establishing practices that allow readers and viewers of my work to both access and engage with the “rhetorical transcription” (Zdenek, 2015) of bilingual research, having the opportunity to experience the transitions between languages that I aim to illustrate in my work. Orienting to translation research through rhetoric, I understand that linguistic movements (e.g., translating across Spanish and English) are more than alphabetic, encompassing the navigation of cultural norms, embodied practices (e.g., gestures), and non-verbal interactions (Butler, 2018). At the same time, as a technical communication researcher, I recognize the need to represent translations in accessible and usable forms, allowing viewers of my work to access the information that I present in my research regardless of (or encompassing) viewers’ preferred communicative practices and dis/abilities. For this reason, as I collected, analyzed, and shared data for various research projects along with Spanish and English speakers, I traced how I navigated publisher requirements, accessibility and technological concerns, and language diversity issues when creating bilingual digital media (e.g., videos). In this article, drawing on narratives (Jones, 2016; Jones and Walton, 2018) from previous projects, I will make a case for the importance of considering language access and accessibility in crafting and sharing digital research, emphasizing how an interdependent (Price, 2011; Price & Kerchbaum, 2016), intersectional (Crenshaw, 1989; Medina & Haas, 2018) orientation to access through disability studies and translation can help technical communication researchers to design and disseminate digital research that is accessible to audiences from various linguistic backgrounds and who also identify with various visible and invisible dis/abilities.

TOWARD INTERDEPENDENT, INTERSECTIONAL TECHNICAL COMMUNICATION METHODOLOGIES

In “Stories of Methodology: Interviewing Sideways, Crooked and Crip,” Margaret Price and Stephanie Kerchbaum (2016) explain that fundamentally, “disability cripps methodology” (p. 20). As Price and Kerchbaum (2016) clarify, “when disability is assumed to be an important part” of a research project (and in their case of a “qualitative interview situation”), the “normative framework [of research] is both exposed and challenged” (p. 20). This exposure allows researchers to further examine (and perhaps begin to dismantle) “the complex rhetorical process” of working

with research methodologies that position “non ‘standard’ English utterances” as “inferior,” and to center the “interdependence” of researchers and participants in making research methods and conditions accessible (Price & Kerchbaum, 2016, p. 23). As Price and Kerchbaum (2016) note, disability studies scholars have long understood the need to crip methodologies as a way to fight “mechanisms of disabled peoples’ oppression” (p. 23).

Disability studies frameworks of interdependency, as Price and Kerchbaum clarify, can render research methodologies that center “care, commitment, and acting with others in mutually-dependent relationships,” where relying on others to access information is not a matter of choice but an intentional, necessary practice (p. 27). Interdependency is “an ethic for intellectual work” in which participants, researchers, and other stakeholders involved in a research project (e.g., audiences and community members) take an active role in making learning accessible for all those involved (Jung, 2014, p. 101).

Working with communities of Latinx organizers, Stephanie K. Wheeler (2017) also highlights the value of embracing research methodologies that center disability, and interdependency frameworks specifically, in research with communities of color. As Wheeler explains, the notion of interdependency through a disability studies framework helps researchers to embrace a research methodology that is inherently polyvocal and multiplicitous, that pushes researchers to work with communities “toward shared values through a variety [rather than a standardized set] of voices, perspectives, and leaders” (p. 91). Through a framework of interdependency, Wheeler (2017) argues that “transformative” work is possible, allowing researchers to “generate the ideas, identities, and capabilities that have the potential to transform goals, self-interests, and institutions” (p. 95). When disability is centralized in methodology, as many DS scholars have shown, research becomes accessible across ability and identity markers (Price, 2011; Wheeler, 2017; Yergeau et al., 2013). Interdependency suggests that researchers, participants, audiences, and communities not only rely but also build on each other through “a dynamic process of recognition and interrelation” that ultimately “make[s] [all] our work possible” (Jung, 2014, p. 101).

The notion of interdependency as central to inclusive research practices also has a long, though differently-named, history in research on language and racial diversity. Critical race theorist Kimberlé Crenshaw (1989) first coined the term “intersectionality” as a way to “contrast the multidimensionality of Black women’s experience with the single-axis analysis that distorts these experiences” (p. 139). Because “dominant conceptions of discrimination condition us to think about subordination as disadvantage occurring along a single categorical axis,” the experiences of multi-marginalized communities, such as Black women, queer and non-gender conforming women, and disabled people of color (among others), are frequently erased and unaccounted for (p. 140). Thus, by pushing researchers to consider marginalization through intersectional frameworks, Crenshaw (2017) continues to explain how “intersectionality is a lens through which you can see where power comes and collides, where it interlocks and intersects. It’s not simply that there’s a race problem here, a gender problem here, and a class or LBGQT problem there. Many times that framework erases what happens to people who are subject to all of these things” (n. pag.). Through this focus on intersecting identities and power dynamics, the concept of intersectionality allows researchers to account for the intertwining (and I argue, interdependent) layers

of experience, history, power, and positionality that take place as individuals navigate communication and action across contexts. Through intersectionality, we can develop research practices that are interdependent, specifically by centering the ways in which issues of gender, class, language, race, and ability intersect in the experiences of multi-marginalized communities. This work in intersectionality is especially important when analyzing language difference and movement (i.e., translation), for, as African American Language scholars have shown, race, power, and language are always inherently tied and intertwined (Baker-Bell, 2013; Gilyard, 2016).

In their contribution to the 2018 *Association for Teachers of Technical Writing Conference Plenary*, Cruz Medina and Angela Haas drew on Crenshaw's definition of intersectionality to emphasize the need for technical communication research to move beyond a single categorical axis in both research and practice. As Haas (2018) clarified, "Given the calls for technical communication instructors and practitioners to be global citizens, public intellectuals, ethical rhetoricians, and advocates for our users and communities, technical communicators have a responsibility, the privilege, and skills to intervene in global and local technical communication problems at macro and micro levels in the face of asymmetrical power relations and limited agency" (p. 5). Through their presentation, Medina and Haas (2018) asked the field of technical communication questions such as: "How might we make our work more intersectional? And how might we do so in a way that recognizes how identity, power, and literacies interface with and have rhetorical roots related to the politics, possibilities, and precarities of specific places and spaces within larger networks and systems?" (p. 5).

Taking up Medina and Haas' attention to the need for intersectional work in technical communication, as well as embracing the exigence of this special issue in connecting disability studies more directly with technical communication research, I argue that connecting technical communication's growing efforts to center linguistic and cultural diversity with the ongoing work of disability studies scholars who center interdependent research methodologies can provide one avenue for technical communication researchers and practitioners to continue working toward the creation and dissemination of accessible tools, technologies, and practices. As Stephanie K. Wheeler (2018) explains, embracing intersectional disability studies frameworks in contemporary research methodologies can give "rise to the urgent need for the inclusivity of underrepresented or neglected perspectives, voices, and bodies to achieve everyday rhetorical resistance" (p. 87). This push toward inclusivity and agency is of increasing importance in technical communication research, particularly given the fields' recent and powerful social justice turn (Agboka, 2013; Walton and Jones, 2013; Jones, Walton, Moore, 2016; Moore et al., 2017).

METHOD: A CASE STUDY OF ACCESSIBLE MULTILINGUAL CONTENT CREATION

During the period of 2014-2017, I worked with two communities of translators to trace the processes and practices of language transformation. Drawing on my own background as a bilingual, immigrant, visibly able-bodied technical communicator and translator, I came into this project interested in learning how bilingual and multilingual communicators coordinate and navigate various digital and non-digital platforms, resources, and practices

to transform information from one named language (e.g., English, Spanish) to another. While I was initially focused primarily on the transformation of alphabetic, written and spoken language, I soon realized that, as many scholars have shown, communication is an embodied experience (Dolmage, 2009; Fox, 2013; Pigg, 2014; Rose & Cardinal, 2018), particularly for communities of color (Haas, 2012; Ríos, 2015). As Gabriela Raquel Ríos (2015) explains, "Indigenous peoples have historically used music, dance, theater, and other types of nontextual practices to make meaning, and we still do" ("Performing," 89). Further, as Dolmage (2009) also clarifies, the extent and methods through which people can and do embody rhetorical practices such as communication depend on issues of access and dis/ability.

As I began to trace processes of translation at my two research sites, I immediately noted the interdependent relationship between spoken, visual, and embodied communication in translation practices, as translators "employ any available mode to communicate, using their bodies, drawing figures, texting, singing, dancing, chirping, clapping, whistling, twirling, laughing—all to help each other overcome complex linguistic negotiations" (Gonzales, 2018, *Sites*, p. 10). Further, because I work with communities of Latinx translators, many of whom also identify as immigrants and who also identify with many different dis/abilities, I also noted the ways through which my participants' intersectional identities influenced their approaches to language transformation. As I note in my discussion of "A Revised Rhetoric of Translation" (see Gonzales, 2018, *Sites*), translation processes and practices, particularly when

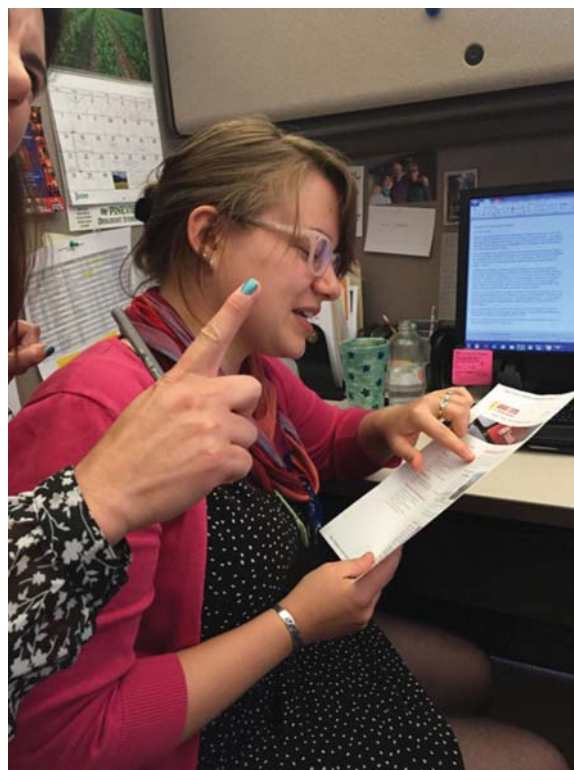


Figure 1: Amy and Sara gesture as they translate. Image description: One woman, seated in her office cubicle, holds a piece of paper with one hand and points with her index finger at some words on the paper. Another woman's hand is visible in the foreground, her index finger raised. Photo by the author.

they are enacted by communities of color, cannot be extracted from the material conditions (e.g., physical and mental dis/abilities, physical places and spaces), histories, and experiences of both the translators and the communities for which this translation work is completed.

For example, Figure 1 (originally published in Gonzales, 2018, “Translation as Technology”) depicts two women translators, Amy and Sara, as they complete a translation for their organization’s website. Amy, a white-presenting woman with blonde hair, sits at her computer holding a paper that contains a translation. Her index finger points to a spot on the printed paper. Another translator, Sara, stands behind Amy and can only be partially seen. Sara is pointing her index finger up as she consults with Amy regarding their translation project.

To begin this translation project, Amy sits in front of a computer screen completing the alphabetic translation. At the same time, Amy uses a printout of the translation to see how the visual elements of the website correlate (or not) with the written translation. When Amy has doubts regarding her translation, she consults with her colleague, Sara. Sara walks over to Amy’s computer, looks at both the computer and the printed version, and then begins to have a conversation with Amy where she switches and blends Spanish and English to derive at translation options. While all of this is going on, Sara and Amy both use their fingers to point at different spots on the written translation, moving their fingers back and forth as they envision and discuss different sentence structures for the translation. All of these strategies, as well as Amy and Sara’s relationship, histories, and experiences (including their navigation

of the translation office space as visibly able-bodied women) influence the resulting translation.

Over the course of three years, I observed, recorded (through various modalities) and studied translation projects with translators like Amy and Sara. In total, I worked with 44 participants to record over 3,000 translation activities (Gonzales, 2018, *Sites*). Drawing on methods and methodologies from rhetoric and composition and technical communication, I traced translation activities by video recording translators as they completed their work, recording their computer screens to trace how translators coordinated digital technologies to transform information across languages while also recording the physical space in which this translation work was happening. In addition, I conducted artifact-based interviews with translators, during which my participants and I collaboratively analyzed translation activities and strategies by watching, listening to and/or reading, and discussing the video recording of their translation activities.

In identifying, tracing, and later publishing about translation strategies, integrating video recordings helped me visualize the various resources that translators used to complete their work, helping me move away from the privileging of alphabetic texts in the translation process toward a more contextualized analysis of the resources and strategies that translators use in their daily activities (Rose & Cardinal, 2018). As Rose and Cardinal (2018) clarify, video methodologies allow researchers to “account for the dynamism of human experience beyond words,” and I argue, across languages (p. 11). Because the purpose of my project is to illustrate the importance and value of language accessibility



Figure 2: Katie uses facial expressions and gestures when translating. Image description: Eight consecutive stills from a video showing a translator, Katie, making different facial expressions that reflect her increasing confidence over time. Original video and still collage by the author.

by showcasing how translators provide access to information for Spanish-speaking communities in the US, using visual and digital methods such as video recordings allowed me to further consider how including non-alphabetic representations of my research in publications could impact the ways in which readers and viewers access my work. As I learned through this analysis, translation activities frequently encompass numerous tools, strategies, and practices that are dependent on factors such as the complexity of the specific translation, the translators' training, dis/abilities, and previous experiences, as well as the physical space and context in which the translation project was being completed.

To help readers and viewers of my work to understand the complexity of translation activities, I used my video data to create brief, collated video montages to share as part of my publications. The video representations of data were intended to expand and attend to the situated and embodied nature of composition (Butler, 2017; 2018; Fleckenstein, 2003; Yergeau et al., 2013). For example, in my book (Gonzales, 2018, *Sites*) which is a published (alphabetic/print) monograph that includes accompanying digital content and that is also published open-access online (https://www.press.umich.edu/9952377/sites_of_translation), I incorporate two brief (4-6 minute) video montages that illustrate how translators moved in their physical space as they completed translation projects. While translators sometimes worked alone at their computers to complete translations, they would also frequently move their bodies in various ways for various purposes, pointing to different portions of their screens, reading translations aloud to see if they "sounded right" when verbalized, as well as moving around the room to consult with other translators regarding the translation of a specific word or phrase. It was through disability studies work that I came to understand the interconnections between embodied and linguistic movements and the histories and experiences of the Latinx communities that I had the privilege to work with.

Figure 2 represents a collage of still shots from one video montage (originally published in Gonzales, 2018, *Sites*, p. 73), where a participant, Katie, makes a sequence of facial expressions (moving from what can be described as a hesitant or confused look to a confident expression with broad hand gestures) as she works through a verbal translation.

In Figure 2, Katie, a Latina with shoulder-length brown hair, is depicted in eight consecutive still shots that should be read from left to right. In the first still, Katie looks confused and pensive, as her lips are pinched and her eyes are looking up. As Katie continues thinking, on the fourth still-shot, her eyes and eyebrows perk up, arguably signaling the moment when she recognized how she wanted to voice her translation. By the eighth still shot, Katie is confidently speaking, gesturing broadly with her hands and fingers while looking directly at the camera once she recognizes and embraces her preferred translations. It's important to note that in the first still shot, Katie is trying to come up with words in English to explain what she is thinking. Beginning with the 4th still shot, Katie is told (by me as her interviewer), that she can respond in Spanish, and it was at this point that Katie began to deliver her response in Spanish while also exhibiting more confident embodied gestures through the firm movements of her hands and her direct eye contact with the camera.

As Figure 2 illustrates, incorporating visual representations of my research with translators was an integral component in showcasing the complexity of translation work, allowing me to

visualize the rhetorical navigation of language that translators practice as they make information accessible across languages for various purposes. As Sauer (2003) emphasizes, paying attention to embodied communication such as gestures can allow technical communication researchers to "organize, dramatize, reflect upon, and understand" language through non-verbal communication as well as verbal utterances (p. 257). At the same time, as disability studies researchers also emphasize, it's important for researchers to acknowledge embodied movement in our participants' communicative strategies while also recognizing that disabilities (visible and invisible) are always influencing the types of movements that humans engage in to create rhetorical impact (Cedillo 2018; Kerschbaum, 2015). As I learned through this project, embodied, visual, verbal, digital, and non-digital elements in translation have interdependent and intersectional relationships that influence both the processes and products of translation. The embodied practices of translators can be linked to translators' experiences and histories, and can also be very easily overlooked if translation is understood through alphabetic language alone (Gonzales and Zantjer, 2015). For this reason, threading disability studies' ongoing attention to embodiment, dexterity, and mobility with translation and language diversity scholars' attunement to racial and cultural practices can be a productive avenue for reimagining access in technical communication research. Working through this project with attention to interdependent and intersectional frameworks in both disability and translation studies prompted me to trace my own process in learning to produce digital research that was not only accessible to viewers of Spanish and English, but that also complied with general publication standards for online journals and venues that produce digital scholarship in the field of technical communication.

Thus, as I worked to edit, revise, and eventually publish the videos that accompany my book project and other accompanying articles to illustrate translation, I tracked my own processes in creating and revising digital compositions, collecting video clips, versions of transcripts, correspondences with editors and reviewers, as well as audio recordings of three additional artifact-based interviews that I conducted with three of my bilingual participants to further discuss the representation of their translation practices through my videos and accompanying publications. During these interviews, I wanted to understand how the decisions I was making regarding accessibility through practices like creating captions and descriptive transcripts may impact the presentation of information in two languages at once, particularly as participants code-switched and/or blended both Spanish and English (translanguaged) in both their written and verbal translations. Through these conversations and through the tracing of different versions of the videos and transcripts as I moved through the publication process for one book and several articles (Gonzales, 2018, *Sites*, Gonzales, 2018, "Translation as Technology," Gonzales, 2017, "Using ELAN), I sought to further understand 1) If (and how) digital compositions (i.e., videos) can include captioning that is both accessible and bilingual and 2) If (and how) issues of technological literacy, language diversity, and accessibility can be approached in technical communication through an emphasis on both translation and disability studies.

Although I did not formally code my tracing of these composing processes or the additional artifact-based interviews, in the sections that follow, I draw on these experiences to present data narratives and make recommendations that begin to unpack how technical communication researchers can further engage with

issues of accessibility and language diversity in digital publishing. As Jones and Walton (2018) argue, narrative methodologies allow researchers to “consider their relative positioning” in order to “see themselves and their work as relational” (p. 243). By sharing three data narratives that illustrate my process in designing accessible and bilingual digital content, I seek to highlight the interdependent and intersectional relationships of disability studies and translation. Although the data narratives and the processes described therein are not exhaustive or fully-representative of the connections between disability studies and translation, my goal is to use narrative and highlight these experiences as a way to further extend a dialogue about the important intersections between these areas of research and practice within (and beyond) the field of technical communication.

DATA NARRATIVE 1: CREATING BILINGUAL CAPTIONS

One of the decisions I had to make most frequently regarding captioning and subtitling was how to address issues of translation and accessibility simultaneously when publishing videos. In addition to deciding how to caption non-verbal and verbal interactions in videos (Butler, 2018), working with bilingual participants meant that I had to consistently decide how and what to translate at various points in my analysis, and how to represent these translations in accessible ways for viewers of this work. For example, in the two video montages that I include in my book, participants switch back and forth and also blend different Spanishes and Englishes as they complete translations for different purposes. Using translation strategies like reading aloud, gesturing, and storytelling, translators in the videos use different varieties of Englishes and Spanishes while also engaging in various body movements and expressions (see Figure 2).

When compiling the videos of these translation strategies for publication purposes, relying on subtitles (i.e., “on-screen translations of the spoken language”) alone would immediately require that I assume the language preferences and proficiencies of my intended audience, perhaps subtitling all Spanish text into English for an English-speaking audience (Zdenek, 2015, p. 35). To make these videos accessible to deaf or hard-of-hearing viewers, I could then provide closed captions (i.e., “full complement of sounds, both speech and nonspeech”) in separate tracks on my videos, one in Spanish and one in English (Zdenek, 2015, p. 35). While this combination of subtitles and captions may have enhanced accessibility for some viewers (and may be a completely viable option for other projects showcasing bilingual research), because the purpose of my video montages was to illustrate the complexity of translation activities, keeping Spanish and English separate, while also keeping non-verbal and verbal descriptions separate (through a separation of captions and subtitles) felt to me like it would flatten (rather than highlight) language complexity (Gilyard, 2015). That is, although subtitles would provide translations of the video content for viewers, sometimes, the purpose of the video was to illustrate the tensions that happen when specific translations are *not* available, and the rhetorical navigation that translators have to engage in (using their bodies and other tools) in order to communicate during translation.

For example, Figure 3 includes three screenshots from a video montage in which one of my participants, Graciela, discusses her translation work during an artifact-based interview. In these screenshots, Graciela sits in a chair in the translation office, looking

into the camera as each of her hands makes the shape of a rectangle. In the video, Graciela connects both pieces of the rectangle (i.e., her hands) by bringing her hands together. At the bottom of the screen, a green subtitle reads, “yo soy la que conecta los,” which is the beginning of the Spanish translation for what Graciela was saying during this interview. The literal translation of “yo soy la que conecta los” is “I’m the one who connects the.” In the video, Graciela verbally stated (in English), “I’m the one who connects the bridges together” as she described her work as a translator.

In order to draw attention to Graciela’s gestures, in subtitling this shot, I provided the translation for the beginning of Graciela’s statement, “I’m the one who connects the,” while also allowing the gesture of the bridge that Graciela made with her hands to represent the intersection of the word “bridges” in both Spanish and English. I omitted the translation of the word “bridges” in the subtitles in order to allow Graciela’s gestures to provide the translation. In collaboration with the editors who published this piece, I decided to provide both subtitles that provided Spanish translations for the English content and English translations for the Spanish content, while also omitting some words in order to highlight the visual elements like Graciela’s use of the gesture for “bridges.” In addition, although providing closed captions was not possible or necessary on this particular publication platform, I also included a full descriptive transcript to accompany the video, in which I described all images on-screen as well as the gestures (i.e., Graciela, makes rectangular gestures that come together into the shape of a bridge as she states, “I’m the one that connects the bridges together”). In this way, I attempted to make this content accessible to blind users and to deaf users who can access the accompanying full descriptions of this video.

My subtitle choices in the shot depicted in Figure 3 were intended to showcase the importance of body movements in translation work. By omitting the word “puente” or bridge from the subtitle, I may have limited the accessibility of this video for Spanish-speaking viewers to some capacity, particularly for viewers who do not speak English and who are deaf or hard-of-hearing. However, in Spanish, the word “puente” does not have the same metaphorical connotation of bringing things together that the English word “bridge” does for English speakers in the US. The word “puente” might be interpreted by Spanish viewers (without the assistance of Graciela’s gestures) as an overpass, and therefore may not be an effective metaphor for translation (see Leppihalme, 1997 for a discussion of the difficulties of translating allusions). Thus, for some Spanish-speaking viewers, Graciela’s gesture might be more effective than the use of the word “puente” itself. I also recognize, in retrospect, that I could have included a visual caption rather than alphabetic text to represent Graciela’s use of the word “bridges” in this particular case (Zdenek, 2015; 2018).

As Price and Kerchbaum (2016) emphasize, “there is no such thing as an objectively ‘accessible’ video, even if it is captioned and described (Kleege, 2016; Zdenek, 2015.)” (n.pag.). Thus, while there may not be an absolutely correct answer to how I should have gone about captioning and subtitling these videos, and I am by no means claiming that my decisions in this process were the most effective, I recognize that the decisions I made in publishing these videos and working to enhance their accessibility inherently pushed me to privilege one set of viewers or practices over others. While I am not and would not claim to be sure that my subtitling and description decisions were the most effective for this particular project, the purpose of this narrative is to illustrate how an interdependent and



Figure 3: Graciela gestures “bridges.” Image description: Three consecutive still shots from a video in which a woman interpreter connects her hands in rectangular shapes to illustrate “bridges.” The same subtitle is printed on the bottom of each still: “Yo soy la que conecta los.” Original video and still collage by the author.

intersectional orientation to technical communication research can reveal rigorous and important dimensions and challenges for consideration in technical content production. The notion of interdependence through a disability studies framework helped me recognize the intertwined nature of myself as a researcher, my participants, and the viewers of this work, acknowledging our shared responsibility to and co-reliance on accessibility in these videos (Jung, 2014). Likewise, an intersectional understanding of race, language, class, and disability helps me consider how power, privilege, and positionality (Jones, Walton, Moore, 2016) come into play while both creating and accessing digital technical content. These considerations led me recognize that segmenting language and dis/ability may not have been the most effective option for enhancing access to the broader arguments about translation in this research (and arguably in technical communication more generally).

DATA NARRATIVE 2: TECHNICAL SKILLS AND LANGUAGE COMPETENCY

While I consider myself to have equal proficiency speaking Spanish and English, as I began to record videos and other digital elements that helped me trace and visualize translation, I had little to no training in using video recording and editing software, and even less training in creating digital materials that would be accessible to (and representative of) viewers and participants with a wide range of dis/abilities. I decided to video record translation activities not because I wanted to get into film or video-making, but because I knew that I would need a multimodal way to represent the dynamic processes that multilingual communicators engage in as they translate information. Frameworks of interdependence and intersectionality position language, culture, race, and dis/ability in constant relation, and part of the goal in my research is to highlight these connections as they are enacted through the work of translators. Video recording data to incorporate non-verbal modalities like gesturing, facial expressions, and intonation into my analysis of translation thus seemed to be a viable option for showcasing these multimodal connections, even if I did not initially have the technical skills to represent this work. As Rose and Cardinal (2018) explain, “video as a research tool enables and enacts [an] emic perspective by providing a glimpse inside the worlds of our users, to reveal the people, their frustrations, tasks and lives,” of our participants (p. 17).

Drawing on disability studies scholarship, I also recognized that visual data such as that provided by video recordings would help me make an argument for the wide range of rhetorical abilities that are demonstrated by communicators who don’t always feel comfortable using speech as their most dominant mode of communication (Butler, 2017; Price & Kerchbaum, 2016). For example, in their discussion of engaging with qualitative interview data, Price and Kerchbaum (2016) draw on Brenda Brueggemann (1999) and other feminist disability scholarship to emphasize “the oralist/auralist conventions” of traditional qualitative interviewing, urging disability studies scholars to embrace research through “sideways, crooked, and crip” methodologies that decenter ableist conventions in data collection and analysis (n.pag.). This emphasis on non-verbal communication is also prominent in technical communication scholarship, particularly in work that emphasizes the importance of analyzing gestures (Sauer, 2003) and creating visualizations to communicate complex information in technical environments (McNely, 2015; Pigg, 2014). At the same time, however, as Yergeau et al. (2013) remind us, “multimodality has been discussed at length as a means to enhance access to the public and private spaces through which we and our writing move,” but “multimodality as it is commonly used implies an ableist understanding of the human composer,” and I argue, of the researcher, participants, and their relationships (n.pag.). Thus, as I engaged in video methodologies through interdependent and intersectional frameworks, it was important to consider accessibility not only from a technical perspective focused on enhancing accessibility, but also from a relational space that centered my participants, their lived experiences, histories, and embodied realities, as well as the power dynamics that inevitably shaped our collaboration.

As I began video recording translation activities to render visual representations of my data, I encountered several tensions as I negotiated data collection with digital content production. For example, I realized early on that the best spatial and physical locations for translation were not always (if ever) the best spatial

and physical locations for recording quality footage. Because I was recording translation activities in impromptu moments that took place in busy, small offices often packed with people, I did not have the luxury of hooking up microphones to each translator who came into a recording, and I did not always have the chance to manipulate elements like lighting and sound in a translation environment. Furthermore, because I was working with Latinx communities in translation offices that welcomed community clients into their space, I was not always able (nor would I want) to control who walked into the translation office, and I did not want my use of recording technologies to interfere with the comfort level that community members might feel when entering the office space.

At the same time, I found that the environments with the most noise and people, and perhaps not with the best lighting, were those that included intense discussions about the translation of a specific word or phrase for a specific community. Much like the image portrayed in Figure 1 with Amy and Sara, complex negotiations in translation often took place in lively conversations among more than one translator cramped into a cubicle, collaborators who coordinated multiple resources, abilities, and experiences to complete their work. Thus, just as I had to make decisions in my captioning that would invariably privilege either Spanish or English, I often had to make decisions in the recording of video footage regarding what aspect of the activity I would want to highlight, and how much (if any) of the recorded footage I would want to make public (despite my having IRB approval to publish all recordings). In many cases, I could either create a less authentic environment that would allow me to have suitable conditions for video recording, or I could allow translators to continue working in their preferred environment, where the most intricate and interesting work would frequently take place.

Recognizing my relationship with participants as an “interdependent collaboration” (Price & Kerchbaum, 2016, n.pag.) meant that I moved beyond only considering my own research goals and objectives when choosing my method/ology, and that I should do whatever possible to ensure that participants had an opportunity to represent their work for themselves on their own terms. A disability studies orientation to this research allowed me to “foreground concerns such as reciprocity, representation, and accessibility” (Garland-Thomson, 2011, p. 21) as they intersect with the technical components of my project. All of these considerations are directly grounded in power structures influenced by and across gender, race, and class dynamics, particularly as I came into this project as a researcher from an academic institution working with Latinx communities whose traditions and experiences have historically been colonized and fetishized through Western paradigms (Agboka, 2013; Patel, 2015). Thus, beyond institutionalized approval mechanisms like getting IRB approval to record in the translation space, engaging with participants in this project through interdependent, intersectional frameworks meant that I worked to consider our collective goals, objectives, and access simultaneously and at each stage of the research process.

Ultimately, out of approximately 400 hours of video data that was collected and analyzed for my book project, for example, I chose to only publish 8-minutes of video footage (Gonzales, Sites, 2017). A majority of the footage collected was deemed unacceptable for public dissemination because it did not meet production standards and digital publishing style guidelines or because I did not feel like it would be ethical to share based on inclusion of participants’ personal content. While most of my footage was

not publicly shared with broader audiences through publications, this footage still contains valuable stories that illustrate translators’ relationships to each other and to their work. This footage, although not part of the “official” publications or productions of this project, still impacted the analysis of translation practices and the relationships that lead to my understanding and (re)presentation of translation. Thus, orienting to the creation of digital materials through an interdependent and intersectional framework in this project provided additional possibilities for acknowledging the rhetorical power of non-normative communicative practices, even if these practices are not always polished and available for public viewing in standardized, normative (ableist) ways. Multimodality, specifically visual/digital methods as they were enacted through this project, required a close interrogation of dis/ability, power, agency, and consent—elements that technical communication scholars are increasingly highlighting in their work. As Jones (2016) reminds us, technical communicators “must examine the design and dissemination of communication critically with a focus on understanding how oppressive conditions can be rearticulated and reinforced” (p. 346). Connecting interdependent and intersectional frameworks through a focus on translation and disability studies can thus help technical communicators to “fully understand, appreciate, and address the social contexts” in which our work operates, recognizing how our own goals as researchers are in constant relation with our participants and our surrounding communities, contexts, and lands (Jones, 2016, p. 344).

DATA NARRATIVE 3: RIGHTS AND REPRESENTATION

In choosing to video record translation activities, it was important for me to not only visualize the tools and technologies that translators navigated in their daily activities, but to also find ways to incorporate the translators themselves in the analysis and representation of data. In technical communication, the move to incorporate participants in research design has been historically valued through frameworks like participatory design (e.g., Rose & Cardinal, 2018) and action-based research (e.g., Blythe, Grabill, Riley, 2008), which are employed by technical communication researchers to “increase agency,” “create empathy,” “check assumptions,” and “increase rigor” in the design and dissemination of new tools, technologies, systems, and pedagogies (Rose & Cardinal, 2018, p. 17). In disability studies, scholars such as Obermark and Walter (2014) (among many others) also advocate for the need to write with rather than merely about disabled communities (p. 63). While I am not attempting to co-opt disability studies scholars’ ongoing and longstanding work to include and center people with disabilities in disability studies research, engaging with disability studies scholarship throughout this project did help me recognize how each translator’s individual training, history, and orientation to language may influence their approach to translation activities. Although the participants included in this article do not identify with visible disabilities, often-invisible factors like trauma, oppression, anxiety, depression and their corresponding repercussions do come into play in translators’ daily work (Kaplan, 2009; Kaufert & Putsch, 1998; Mitchell, 1998). As such, it is important that I include translators’ own perspectives and histories within my recording of translation activities. Furthermore, because I was tracing translation processes in small, community-driven businesses and organizations for my projects, I recognized that asking translators to participate in my study would be asking them to contribute their already-limited time and resources into the completion of my project. Thus, as I began

building relationships with participants that would eventually lead to the completion of my data-collection period, we collectively decided that rather than anonymizing my data, participants would be represented by name within the publications that stemmed from this project. This included keeping my participants' real names in my book manuscript, while also keeping the names of the organizations with which I partnered to complete this project. In this way, when pointing to their own contributions to our project (for the purposes of marketing, grant proposals, and reporting), participants could cite their own names and institutional affiliations in published research.

The decision to keep participants' and organizations' names in digital publications led to the need to complete several additional layers of permissions, beginning with the original Institutional Review Board (IRB) clearance for the project as a whole, which required additional language on the informed consent documents that would be incorporated into the project.

Further, for every publication about the project, additional consent was gathered from participants, both to ensure that participants were still willing to have their names included in a publication and to take into account any name and/or affiliation changes that took place from the time data was collected to the time of publication. These recursive consent practices (Livingston, 2015) were especially important when sharing written and digital data created with vulnerable populations to be published through an open-access platform.

In addition to ensuring participants' and organizational consent throughout the publication process (and not just before and during data collection), the fact that the book manuscript stemming from this project would be published open-access in digital form led to added considerations regarding the *Creative Commons* Licensing. For example, I was given the choice to select the type of Open Access License that would be used for my book manuscript, ranging from the most restrictive CC-BY NC-ND license which only permits others to download and share work without making any alterations to the content to the least restrictive CC BY license, which allows the public to "remix, tweak, and build upon" your work, distributing new iterations for any purpose, including for commercial reasons (Creative Commons). While I was advised to follow in the tradition of Creative Commons licensing for academic books by choosing a restrictive licensing option, I soon learned that in order to incorporate permissions for my work to be translated into other languages, I would have to choose the least restrictive Creative Commons license form. In other words, for Creative Commons licensing purposes, translations are deemed adaptations of a particular work, and thus, if I want to allow my work to be translated, I have to allow for all other types of adaptations to be made, even for commercial purposes. This means that if I want to allow the organizations for which my participants' work to translate their own labor in my book manuscript, I also have to allow for the public to make other adaptations and extensions to our collective work and to the representations of multilingual participants.

Notions of privacy, disclosure, and consent have long been questioned and highlighted by disability studies scholars who recognize the need to "rethink research, questioning and pushing on how we do research and what we value in our scholarly and pedagogical practices" (Hitt & Garrett, 2014). The notion of interdependency inherently pushes researchers to consider, as Price (2011) explains, the tough spaces and decisions in methodology

"where questions arise, where researchers and participants must communicate, where compromises take place and participants' decisions will guide and even redirect the course of a study" (p. 205). In the case of choosing to include participants' names in my study and to allow for public manipulation of this project through a different Creative Commons license, I again do not know if the decisions I made were "right." Instead, embracing this type of constant flexibility and (re)negotiation of consent with participants highlighted the intersectional power structures that guide technical communication work, as we negotiate privacy, disclosure, and representation through power structures built on the intersections of race, class, gender, language, and disability.

Further, the negotiation of rights and representations illuminated the interdependent nature of this projects' stakeholders more broadly, highlighting how, as Jung (2014) illustrates, our intellectual work relies solely on the relationships that researchers, communities, lands, participants, and spaces build and sustain collectively (Jung, 2014). As Price and Kerschbaum caution, "Interdependence is a central tenet in DS, focused on care, commitment, and acting with others in mutually-dependent relationships; however, DS scholarship doesn't always acknowledge that asymmetrical power relationships, including those that involve intersectional identities of race, class, gender, sexuality, and different kinds of disability, deeply affect what "interdependence" means in specific situations and how it is practiced (p. 27). In relation to digital bilingual data such as that produced through the projects I outline in this article, considering rights and representation issues was relevant not only in terms of intellectual knowledge, but also in visual representations of marginalized communities and cultural practices, institutional labor, and linguistic knowledge. All of these factors, I argue, should be further considered in the development and dissemination of accessible digital content within and beyond technical communication.

GOALS AND POSSIBILITIES FOR INTERDEPENDENT, INTERSECTIONAL ACCESSIBILITY IN TECHNICAL COMMUNICATION

The data narratives presented above illustrate just a few of the various situations that creators of bi and multilingual digital content may have to navigate in striving to create and share digital information that is intersectionally and interdependently accessible, or that is usable to viewers with various ranges of hearing, visual, and linguistic abilities. These contexts are not unique to me and my own project, but rather represent the many decisions that digital content creators now have to navigate as a result of the constantly expanding discourse and interactive abilities of our viewers. I also want to recognize that the data narratives presented in this article do not incorporate simple solutions or "go-to" approaches for navigating the rhetorical decisions that bilingual digital data creators have to navigate. Rather, following Zdenek's push to not treat closed captioning and other accessibility measures as merely a "legal requirement, a technical program, or a matter of simple transcription," I present a set of goals and possibilities that can be considered in the ongoing design and development of accessible bilingual digital data (p. 1).

Goal 1: Designing for Language Fluidity

While legislation such as the 2010 Communications and Video Accessibility Act established some provisions regarding the closed

captioning of media in Spanish, researchers have also pointed to importance of expanding these parameters to further consider closed captioning standards for additional languages (Zdenek, 2015). Though Spanish closed captioning is now common, captions and transcriptions are often only set to a specific language (e.g., English OR Spanish). In instances when communicators are moving fluidly between languages, English captions of multilingual media will often read something like: [Speaking in Spanish] or [Singing in foreign language]. As technical communicators continue developing methods and practices for captioning digital media for accessibility purposes, it will be useful for us to also consider that boundaries between and across languages are constantly expanding.

There are multiple “Spanishes” and “Englishes” that emerge and are re-shaped on a continuous basis, and communicators who speak both languages may blend or mix their linguistic practices across what may be deemed standard Spanish or English (what García & Li Wei [2014] might call translanguaging). In some cases, as evidenced with my example of the translator, Graciela, specific terms are untranslatable and thus not suitable for literal translation subtitles. Because, as Zdenek, 2015 explains, captioning practices often have an English bias, captioners don’t know or think they are responsible for non-English sounds in movies and TV shows (p. 269). In considering future possibilities for accessible bilingual digital data, acknowledging that language functions outside standardized systems may help us better reach and engage with linguistically and ethnically diverse audiences (Butler, 2018). Such a consideration may require the development of new captioning methods and standards that incorporate translation and localization beyond simple standardized language categories, and increased collaboration among captioners, linguistically diverse audiences, and linguistically diverse audiences who also identify as deaf or hard-of-hearing. By de-centering the current dichotomy between captions and subtitles, between English and other languages, and between deaf or hard-of-hearing and bi or multilingual audiences, and by acknowledging their collective interdependence and intersectionality, we can perhaps begin to envision other “radical alternatives to the taken-for-granted landscape of captioning and sonic accessibility” (Zdenek, 2018, n.pag.). Further, as Butler (2018) explains, “If we can appreciate that embodied captions can benefit deaf and hearing viewers and if we can move beyond seeing captions as accommodations, then we will have overcome the boundaries between modes of communication,” and I argue, between discreet, standardized languages.

Goal 2: Developing Culturally-Relevant Accessibility Policies for Digital Publishing

The data narratives presented in this article echo emerging calls for further considering the connections and interrelations between technical communication and disability studies (Colton & Walton, 2015; Palmeri, 2006). As part of this work, it may be important to further interrogate if and how contemporary accessibility standards (e.g., Plain Language requirements) account for language diversity (Jones & Williams, 2017). In so doing, it will be important to not position language diversity as a limitation (i.e., by perceiving language diversity a disability or positioning disabilities as limitations to digital data production), but rather to embrace asset-based frameworks for approaching accessibility work by establishing policies and practices that leverage the affordances of making content accessible for readers and viewers with a wide range of physical and linguistic abilities. In this way, as technical communication researchers, we can continue working

to create digital content that illustrates the various dimensions of communication that are particularly prominent in contemporary multilingual contexts. Further bridging accessibility and language policy issues in relation to digital content creation can help us to design research that is not only accessible, but also representative of the multiple cultures, communities, and contexts in which technical communication currently functions. As Wheeler (2018) argues, providing “multiple entry points” to research practices by centralizing disability studies methodologies “allows access and inclusion to become the cornerstone foundation upon which effective labor activism and social justice is built, and, by extension, the changes such activism generates” (p. 106).

Goal 3: Recognizing the labor of multilingual digital content creation

Although the data I share in this article is infused with my own communicative and technological limitations, it can be argued that creating bilingual digital data requires labor that should be further recognized in technical communication research. Translating and creating bilingual captioning, embracing digital data collection methods that adequately portray multilingual translation practices, and incorporating several rounds of collaborative consent processes required training and expertise critical to successful multilingual digital content creation. As such, as technical communication research continues highlighting the importance of designing and disseminating accessible content, we should also continue to embrace and develop practices that not only recognize the additional labor of creating bilingual digital data, but that also prepare students, professionals, and researchers to successfully plan for and complete this work (Butler, 2018; Colton & Walton, 2015).

Although the work represented in this article stems from multiple years of building, analyzing, and publishing digital research, the data narratives presented provide just one small glimpse into the complexity of multilingual digital content creation. The interdependent and intersectional nature of conducting research with multi-marginalized communities who identify with various linguistic and cultural histories and dis/abilities leads to critical considerations for technical communication researchers who seek to work collaboratively with participants to design and disseminate accessible and ethical tools and technologies that purposely decenter standardized notions of language, culture, and ability simultaneously. If nothing more, the data excerpts showcased here emphasize a growing need to further consider accessibility issues in technical communication scholarship and practices through a recognition of the intersections between disability studies, translation, and technical content creation. While both technical communication and disability studies scholars have done extensive work to establish practices and standards for designing accessible digital content, the projects outlined in this article present an argument for further considering how language diversity efforts draw from, extend, and depend on technical communication and disability studies research. Through further collaboration, specifically through initiatives like the interdisciplinary work presented in this special issue of *CDQ*, our collective fields can push for a “rhetorical widening” (Zdenek, 2015, p. 19) of the exigence for to creating accessible content, considering the multiple ways in which contemporary audiences can and should be able to engage with the work of our disciplines.

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