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Chapter 11

INTERROGATING WHAT WE MEAN BY “MAKING”: STORIES FROM WOMEN WHO MAKE IN COMMUNITY

*Bibhushana Poudyal, Tetyana Zhyvotovska, Estefania Castillo,
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Introduction

In recent years, innovation, entrepreneurship, and globalization have become popular concepts in relation to technology design. While some major corporations and other entities continue pushing for globalization through the design and dissemination of digital technologies, researchers also caution against the biases and oppression that can be embedded in US culture’s “near-ubiquitous use of algorithmically driven software.”¹ Countering some previously established orientations to globalization and entrepreneurship, this chapter highlights the importance of building technological innovation with (rather than just for or about) historically, structurally, and systematically marginalized and underrepresented communities. The overall purpose of this chapter is to showcase how technological innovation, when it is made and developed through reciprocal mentorship networks,² can disrupt a chain of signifiers of a

1. Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York, NY: New York University Press, 2018), 1.

2. Angela Haas, Christine Tulley, and Kristine Blair, “Mentors versus Masters: Women’s and Girls’ Narratives of (Re) Negotiation in Web-Based Writing Spaces,” *Computers and Composition* 19, no. 3 (2002): 231-249.

privileged structure and create makerspaces for and with community knowledge and information.

Multilingual User-Experience

In November of 2017, we—a team of students, researchers, practitioners, and teachers interested in writing and technology—designed and/or participated in the “Multilingual User-Experience Research Symposium.” This event brought together over one hundred researchers, technology designers, translators, community organizers, students, teachers, and other attendees to engage in conversations about the challenges and affordances of creating tools and technologies in multiple languages, including, but not limited to, English. In developing the Multilingual User-Experience Research Symposium and the emerging Multilingual User Experience Research Consortium³ that stemmed from this initial event, we seek to develop a “space where community engagement, professional development, translation practices, and technological design converge, and where professionals and community members with different types of expertise collaborate in reciprocal ways that highlight linguistic and cultural diversity as assets in the design process.”⁴ In short, the purpose of this consortium is to bring together diverse stakeholders who can influence the design and usability of tools and technologies that are developed for and by multilingual communities and, predominantly, multilingual communities of color.

This chapter is written by a team of women currently collaborating on several technology-design projects through the Multilingual User-Experience Research Consortium and through a mentorship project for women funded by the Coalition of Women of Color in Computing and the Kapor Center. The purpose of the project that we describe in this chapter is to increase the representation of women of color in the technology industry, specifically by establishing relational mentorship

3. Multilingual User Experience, <https://www.multilingualux.com/>.

4. Ann Shivers-McNair, Laura Gonzales, and Tetyana Zhyvotovska, “An Intersectional Technofeminist Framework for Community-Driven Technology Innovation,” *Computers and Composition* 51 (2019): 5.

networks that support women and women of color who are interested in technology design, but who may or may not have had previous opportunities to benefit from infrastructures that support training and curiosity in technology. Structured as a year-long mentorship project that consisted of weekly meetings and workshops to discuss ongoing projects and learn new techniques in technology design, this project allowed us, as a team of researchers, teachers, makers, and students, to pursue individual projects related to technology design while also coming together to discuss our ideas and share our progress along the way. At the end of the Spring 2019 semester, we took a trip to Seattle, Washington, where we met with professionals in the tech industry who gifted us with their time and provided more feedback on our projects and interests.

Stemming from our experiences of building and participating in the spaces of Multilingual User-Experience Research Consortium and the Women of Color in Computing project, this chapter describes our own orientations to, and relationships with, “making” broadly defined. In this chapter, our goal is to make space for multiple ways of participating in a Maker Movement without privileging or settling on one formulaic approach or definition. As we illustrate, our approach to community-driven, multilingual making and design is anything but linear. Rather, it is rhizomatic, meaning it “has no beginning or end; it is always in the middle, between things, interbeing, intermezzo” and “is alliance, uniquely alliance.”⁵ Thus, in the sections that follow, we offer re/definitions of “making,” specifically through the perspectives of women and women of color who seek to disturb the linearity of makerspaces as male-centered and/or as spaces of whiteness.

Re-defining Making

While conversations about designing, building, and making have been taking center stage in multiple disciplines and professional contexts and

5. Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis, MN: University of Minnesota Press, 1987), 25.

since “everyone is a cheerleader for the Maker Movement these days, from President Obama to the Pittsburgh Pirates,”⁶ we recognize, as the purpose of this edited collection makes clear, that not everyone has equal access to, investment in, or interest in making tools and technologies. There are vast and expansive reasons for a cited lack of diversity in many areas of the technology industry. For example, according to Maker Media’s press fact sheet, of the readers of *MAKE: Magazine*, 81% identify as male. And of attendees at the 2014 Bay Area Maker Faire, 70% identified as male.⁷ Similarly, in Hackster.io’s survey (done in partnership with tech giants such as Intel, Microsoft, Google, Amazon, and Arm) of more than 3,000 makers across 104 countries, fewer than 7% of respondents identified as women.⁸ Interestingly, neither Maker Media nor Hackster.io reported on race/ethnicity.

While the Maker Movement positions itself as both an economic and an educational resource, Vossoughi, Hooper, and Escudé are wary of the “uncritical adoption of branded versions of making, particularly with regard to their implications for education equity,”⁹ because as Barton, Tan, and Greenberg argue, “[t]here is little evidence that the maker movement has been broadly successful at involving a diverse audience, especially over a sustained period of time.”¹⁰ While some see makerspaces and maker practices as opportunities to bring underrepresented groups, such as women, into STEM fields,¹¹ others point to women’s

6. Remake Learning, “The Maker Movement Gets a Dose of Critique,” February 23, 2015, <https://remakelearning.org/blog/2015/02/23/the-maker-movement-gets-a-dose-of-critique/>.

7. Maker Media, “Fact Sheet,” 2015, <http://makermedia.com/press/fact-sheet/>.

8. Hackster.io, “Hackster.io Maker Survey,” 2016, <https://www.hackster.io/survey>.

9. Shirin Vossoughi, Paula K. Hooper, and Meg Escudé, “Making through the Lens of Culture and Power: Toward Transformative Visions for Educational Equity,” *Harvard Educational Review* 86, no. 2 (2016): 210

10. Angela Calabrese Barton, Edna Tan, and Day Greenberg, “The Makerspace Movement: Sites of Possibilities for Equitable Opportunities to Engage Underrepresented Youth in STEM,” *Teachers College Record* 119, no. 7 (2017): 5.

11. Susan Blackley, Rachel Sheffield, Nicoleta Maynard, Koul Rekha, and Rebecca Walker, “‘Makerspace’ and Reflective Practice: Advancing Pre-Service Teachers in STEM Education,” *Australian Journal of Teacher Education* 42, no. 3 (2017): 22-37.

exodus from male-dominated makerspaces and hackerspaces to form women-centric spaces that promote feminist ways of making and collaborating.¹² Stemming from our experiences as women and women of color who are in the process of developing feminist ways of making and collaborating, we employ storytelling method/ologies in the sections that follow to highlight the importance of critical engagement with conceptions of “making” in both academic and non-academic contexts. Through reflective sections that draw on Royster and Kirsch’s notion of “strategic contemplation,”¹³ we showcase our varied but connected experiences with making in our communities. As Royster and Kirsch explain, strategic contemplation “allows scholars to observe and notice, to listen to and hear voices often neglected or silenced, and to notice more overtly their own responses to what they are seeing, reading, reflecting on, and encountering during their research processes.”¹⁴ By engaging in strategic contemplation, both in the written elements of this chapter and in our processes of collaborating on this project, we highlight the importance of experience and relationality in establishing spaces and opportunities for technological making.

Joy Robinson—Making to Break the Expert/Novice Binary

I am an Assistant Professor of Technical Writing and New Media in the English department at the University of Alabama in Huntsville (UAH). For me, making has always been the idea of exposing technology to those who might otherwise not encounter technology or digital processes in other ways. For example, exposing high school students to robotics technology and allowing them to explore the building of these machines as part of a broader digital learning process. But, as I worked

12. Sara Fox, Rachel Rose Ulgado, and Daniela Rosner, “Hacking Culture, Not Devices: Access and Recognition in Feminist Hackerspaces,” in *Proceedings of CSCW '15, Vancouver, BC, Canada, March 14-18, 2015*, <http://dx.doi.org/10.1145/2675133.2675223>.

13. Jacqueline Jones Royster and Gesa E. Kirsch, *Feminist Rhetorical Practices: New Horizons for Rhetoric, Composition, and Literacy Studies* (Carbondale, IL: SIU Press, 2012).

14. Royster and Kirsch, *Feminist Rhetorical Practices*, 86.

with the talented young women in the Multilingual User Experience Research Consortium and through the Women of Color in Computing project, the idea of making took shape in the form of concepts and ideas extracted from user experience.

Every day, people struggle with painful user experiences that prevent them from completing their work and enjoying leisure activities. For example, a Facebook user might get frustrated trying to change her privacy settings, or a student in an online biology class could get overwhelmed using the course website and supplemental materials. In these cases, the user is having problems with User Experience (UX). UX research helps us effectively design products, technologies, and services to fit people's needs, facilitate intuitive and productive use, and evoke positive emotions. UX researchers use both qualitative and quantitative methods to study multiple, complex human behaviors and responses. According to ISO 9241-210, which provides standards concerning human-centered design for interactive systems, "User experience includes all the users' emotions, beliefs, preferences, perceptions, physical and psychological responses, behaviours and accomplishments that occur before, during and after use."¹⁵

To evaluate UX, researchers deploy several methods, such as interviewing likely users, generating product prototypes, mapping user journeys, and conducting focus groups. User Experience (UX) can be approached using a number of methods, based on whether you are exploring projects, services, or processes. For this reason, using UX methods (such as the classic framework of discover, decide, make, and validate from 18F) has guided our exploration and collaboration in the Women of Color in Computing project. UX methods allowed us to establish a space where we could ask the right questions and break the binaries between who is a novice or an expert in technology design. After taking time to learn about the students' ideas and projects, we (the authors of this chapter) set up a schedule to discuss the various methods

15. The International Organization for Standardization, "Ergonomics of Human-system Interaction—Part 210: Human-Centred Design for Interactive Systems," 2015, <https://www.iso.org/obp/ui/#iso:std:iso:9241:-210:ed-1:v1:en>.

under the broad banners of the framework, leading us to learn about each other’s ideas and to build on them throughout our collaboration.

For example, Estefania’s project explores ways to improve the graduate school application process for international students. The process for applying and getting accepted has a number of known issues, including understanding the requirements, tracking the application, and getting an update on the progress of the application process. Beginning with interviews of users (i.e., students), Estefania will attempt to map the pain points for students undertaking this process. Although Estefania’s project may not have been initially conceived as a “maker” project, making graduate school application processes more accessible to international students not only improves individual platforms, but also makes for a more inclusive and diverse student pool across universities.

Estefania Castillo—Making as Meaningful Collaboration

I am a Master’s student in the Rhetoric and Writing Program at the University of Texas at El Paso, a university located on the Mexico/US border. I live in the neighboring city of Ciudad Juarez, Chihuahua, Mexico, and I commute to school in El Paso. To me, making and building can only be achieved through meaningful collaborations. Being a *transfronteriza* student who crosses borders on a daily basis to pursue an education has made me conscious of the need for social justice work within my own community as well as other marginalized communities. I was first introduced to UX as an undergraduate student, when I took a course in rhetoric and writing. This course was eye opening for me, because it made me pay closer attention to the way the projects I produced and worked on would be utilized by users. As I pursued my graduate education at an institution on the Mexico/U.S. border and gained more interest in technical communication and UX, I began to notice the importance of collaborations between academia and the border community.

The Multilingual User Experience Research Consortium and the Women of Color in Computing project gave me an opportunity to keep building on my personal collaboration with my transnational community

and to build new relationships in the process. I am looking at the usability of graduate school applications for international students and trying to find ways to make these types of websites easier to navigate for students. I believe that making and building websites that will ultimately be more user friendly for international students can only be achieved through a close collaboration with this community. These collaborations become meaningful through the practice of empathy and listening, which helps designers understand where users come from and what experiences they bring to any new interaction with technology.¹⁶ When we practice listening with empathy in our work with communities, we can begin to understand users' unique needs and use that information to build more accessible platforms. Engaging in conversations and listening with empathy will help me as a researcher to work alongside international students so that together we can localize graduate school application platforms and make the process of applying easier for future international students.¹⁷ Through these important collaborations, we can make and build alongside communities.

Laura Gonzales—Making as a Community-Driven Practice

Currently, I am an Assistant Professor of Digital Writing and Cultural Rhetorics at the University of Florida. In my previous position, I was an Assistant Professor of Rhetoric and Writing Studies at The University of Texas at El Paso, where I had the opportunity to meet Estefania, Tetyana, Bibhushana, and Nora. In addition to my academic work, I'm also a technical translator who works with various organizations to translate information in Spanish and English.

I became interested in technology design during my Ph.D. program, where I worked with Dr. Liza Potts and the Writing, Information, and Digital Experience research center on several projects related to women

16. Indi Young, *Practical Empathy: For Collaboration and Creativity in Your Work* (Brooklyn, NY: Rosenfeld Media, 2015).

17. Huatong Sun, "The Triumph of Users: Achieving Cultural Usability Goals with User Localization," *Technical Communication Quarterly* 15, no. 4 (2006): 459-460.

in technology, social media research, and writing program development. During this time, I also had the opportunity to work with community organizations and contribute to community engagement projects, which included working as a translations coordinator for the Language Services Department at The Hispanic Center of Western Michigan, facilitating a technology summer camp for Indigenous and Latinx girls through the guidance of Dr. Estrella Torrez at Michigan State University, and working with youth to write, share, and publish stories through after-school programs and initiatives in both Lansing, Michigan and Orlando, Florida. Through these experiences, I understood making as a community-driven practice with a long and often-erased history in Indigenous communities who acknowledge and centralize relationships between people, land, tools, technologies, and our surrounding environments.¹⁸ I then decided that after graduating and as I continued my career, I wanted to focus on building infrastructures and programs that threaded together my interests in community engagement and technology design, specifically within the linguistically and ethnically diverse communities that fuel both my history and my work.

It was at this time that I began working at the University of Texas at El Paso, which sits on the Mexico/US border and has a student population that is approximately 90% Latinx (largely Mexican and Mexican-American). The first thing I learned after moving to El Paso is that my new community already inhabits the connections between community engagement, language, and technology that I only imagined during my graduate study. In this community, I had the opportunity to meet brilliant students who navigate across physical, linguistic, and technological borders whenever they visit family and/or return home to Ciudad Juarez, Chihuahua, Mexico, communicate in multiple languages (including Spanishes and Englishes) through a wide range of apps like WhatsApp and Facebook Messenger, and, perhaps most emphatically in terms of seeking an education, as they navigate an academic institution

18. Gabriela Rios, “Cultivating Land-Based Literacies and Rhetorics,” *Literacy in Composition Studies* 3, no. 1 (2015): 60-70.

that is still largely driven by White, Western, English-dominant values. In this context, I also have had the privilege of working with many international graduate students who, having left their families and homes behind in countries like Ghana, Nepal, Ukraine, and Mexico, utilize various assets to navigate tremendous institutional challenges as they pursue their degrees in the U.S.

While the community and the students I have the privilege to work with have invaluable assets that they can bring to scholarship and practices in community engagement and technology design, due to institutionalized racism and oppression these students do not always have avenues to enact their skills and see themselves as technology designers who can and do influence the development of tools and technologies that can inform our contemporary international, multilingual, cross-cultural realities. For this reason, with the collaboration and wisdom of my colleagues, we decided to develop the Multilingual User Experience Research Consortium as well as to participate in the Women of Color in Computing Project. Our goal through this work is to establish a cross-institutional, transnational, and multilingual mentorship model that will allow students like Bibhushana, Estefania, Tetyana, and Nora to practice and connect with technology designers across and beyond the United States. By staying in touch with attendees of the inaugural Multilingual User Experience Research Symposium as they undertake various projects in their home contexts, I continue to note the ways in which reciprocal collaboration can lead to technological innovation that is both grounded in community expertise and developed for linguistically and ethnically diverse users. Drawing on lessons that I've learned from my collaborators (including the authors of this chapter and tech and community leaders such as Clarissa San Diego and Sara Proaño), I recognize that it's not enough for academics to critique or analyze the tech industry and the interfaces and technologies developed in corporate markets. Rather, my goal as a teacher, researcher, and practitioner invested in technological innovation is to co-develop design methods and practices that are successful, practical, effective, and grounded in ethical, social-justice-driven collaborations.

Ann Shivers-McNair—Relational Making

I am an Assistant Professor and Director of Professional and Technical Writing in the Department of English and Affiliated Faculty in the School of Information at the University of Arizona. When I first began studying makerspaces and the Maker Movement in 2015, I came to the research with assumptions about what “making” and “maker” meant that were informed by narratives of the Maker Movement (at least in the U.S.) as a white male-dominated culture. I learned from spending time with makers in Seattle that the people who make and the practices of making they draw upon are dynamic, varied, and nuanced. Specifically, I learned from my ongoing collaborations with Clarissa San Diego, Founder and CEO of Makerologist, that making is about relationships among people, communities, technologies, goals, and economies.

From Laura’s wise framing and leadership of this project, to Joy’s beautiful explication of agile and lean workflows as they intersect with design, to Clarissa’s brilliant strategies for facilitating and managing remote collaboration, I have learned about good design, collaboration, and project management. And from the interns, Estefania, Bibhushana, Tetyana, and Nora, I have learned creative and innovative ways to engage and expand strategies for design and making to do social justice-driven work across borders, cultures, communities, and interfaces. I’ve come to understand this work as “relational making.”

When I say “relational making,” I’m drawing on Indigenous frameworks to emphasize accountability and to honor the onto-epistemologies of the land on which I am an uninvited settler. As Shawn Wilson explains, “The shared aspect of an Indigenous axiology and methodology is accountability to relationships.”¹⁹ Certainly, these relationships are among humans, but they are also among humans and non-humans, as Angela Haas argues in her decolonizing work on race, rhetoric, and technology: “Technology is not what does the work, it is the work—and that

19. Shawn Wilson, *Research is Ceremony: Indigenous Research Methods* (Black Point, Nova Scotia, Canada: Fernwood Publishing, 2008), 7.

work relies on an ongoing relationship between bodies and things.”²⁰ This accountability to relationships is at the core of the work I see my colleagues in our group doing, and it’s why I’m excited for the practices of making that my colleagues are modeling.

Tetyana Zhyvotovska—Making Space for Social Justice Work

I am a Ph.D. candidate in the Rhetoric and Writing Studies Program at the University of Texas at El Paso. I am also a trained translator and linguist from Ukraine. As a person interested in the intersections of technical communication, user experience, and translation, making for me means creating a space where social justice-driven work is taking place for and with diverse communities. Multilingual communities are often overlooked and marginalized in various contexts, particularly in relation to technology design, where translation is often positioned as a problem to be fixed after a product has been designed and developed. Technical communication scholars argue that the quality of translation and localization in documentation affects the lives of people in vulnerable communities and in some cases might even put the health of users at risk.^{21,22}

My participation in the Multilingual User Experience Research Consortium and the Women of Color in Computing project allowed me to focus on the intersections of technical communication, user experience, and translation through a UX project. Specifically, I designed a usability study where users engaged with the translated content of a website, which provided an opportunity for me as a researcher to examine how

20. Angela M. Haas, “Race, Rhetoric, and Technology: A Case Study of Decolonial Technical Communication Theory, Methodology, and Pedagogy,” *Journal of Business and Technical Communication* 26, no. 3 (2012): 212.

21. Godwin Y. Agboka, “Decolonial Methodologies: Social Justice Perspectives in Intercultural Technical Communication Research,” *Journal of Technical Writing and Communication* 44, no. 3 (2014): 316.

22. Tatiana Batova, “Writing for the Participants of International Clinical Trials: Law, Ethics, and Culture,” *Technical Communication* 57, no. 3 (2010): 276.

translation functions in multilingual UX, considering the verbal, visual, and cultural elements of usability in conjunction with issues of localization and internationalization. In addition to conducting multilingual usability studies, I also interviewed researchers and practitioners across the country who attended the inaugural Multilingual User-Experience Research Symposium. In these interviews, I asked participants to define what Multilingual User Experience means to them and how this work engages their own interests and backgrounds.

One of the important aspects of space making for multilingual communities in technology design is through a focus on empathy. Indi Young sees empathy as a mindset with a focus on people and with the goal of understanding people’s diverse thinking processes and perspectives.²³ Gathering, comparing, and analyzing patterns allows designers to make better decisions about their services and products. This approach helps me view a usability session as a space where a multilingual user produces reactions, formulates reasoning, and takes actions while navigating a website with multilingual content.

Developing empathy happens through listening. In this case, moreover, empathy means listening to understand one’s thinking patterns, perspectives, and emotions while using a product, but also listening to one’s voice in general. Listening can contribute to greater inclusion, and multilingual UX cannot exist without good listening. Multilingual users must be a part of the technology design processes, and the only way to see their impact on designed products is to include their reactions and experiences through usability research conducted with empathy and listening as essential and vital strategies. Thus, making to me means creating an inclusive space and a place for social justice work for and with diverse communities to amplify agency and to promote more just and equitable social practices.

23. Indi Young, *Practical Empathy: For Collaboration and Creativity in Your Work* (Brooklyn, NY: Rosenfeld Media, 2015), 18.

Nora Rivera—Making as an Intercultural and Interlingual Experience

I am a Ph.D. student in the Rhetoric and Writing Studies Program at the University of Texas at El Paso. My story with computers began decades ago, when my dad purchased our family's first IBM PC back in the 80s. As dull and bare as this archaic artifact may seem to us today, I was immediately captivated by it. Computer classes were far from being available at schools in Juárez, Chihuahua, Mexico; therefore, besides the crash course on MS-DOS and Lotus 1-2-3 given by the company which sold the PC to my dad, it was on us—my siblings and I—to learn to navigate the interface, together. Then, in the late 1990s, when I attended business school, the talk gravitated towards the customer experience when walking into a brick and mortar retail store. This was also known as “feeling” the branding. And shortly after, information technology departments, dominated by computer engineers, shifted their attention to transferring this “feeling” of branding to online stores. It was during this time that I became interested in desktop and digital publishing, which I also learned by experimenting and collaborating. Technology has taken remarkable leaps since my first computer, yet the way I interact with digital interfaces has not changed. I dive in and learn by collaborating with others.

When Dr. Laura Gonzales invited me to join the Multilingual User Experience Research Consortium, I was thrilled to work in projects right at the intersection of rhetoric, language, culture, and technology. From Dr. Gonzales, I have learned to give a multidimensional contextual meaning to UX. Her leadership and innovative work teach me day in and day out that UX researchers have a responsibility to be the users' allies. Furthermore, collaborating with talented interns and researchers from different institutions is an invaluable undertaking that teaches me to appreciate research through various lenses.

While searching for a deeper commitment to non-Western discourses, I became involved in a community-driven project centered on Indigenous language interpreters in collaboration with colleagues from the University of British Columbia in Canada, the Universidad

de Veracruz in Mexico, the Centro Profesional Indígena de Asesoría Defensa y Traducción (CEPIADET) in Oaxaca, Mexico, and Dr. Gonzales. Together, we organized a conference for Indigenous language interpreters in Oaxaca, a state where more than one million people speak an Indigenous language. The purpose of this project is to gather professional and academic resources that will help create a collection of ideas and strategies to assist in the professionalization of Indigenous language interpreters, and the ultimate goal is to publish this collection digitally. Our team “makes” by collaborating via videoconferencing from three different countries: Canada, the United States, and Mexico. We embody various cultures and languages, becoming a microcosm of the kaleidoscopic array of cultures and languages that were represented in the makerspace of the conference.

My story with technology has taken me to makerspaces of cultural and linguistic fluidity in both the physical and the digital realms; hence, my understanding of making is an intercultural and interlingual experience that allows us to learn from the making practices of others who offer views which we might have not considered. Through this journey, I have learned to collaborate with gifted colleagues who make communities by means of technologies as new as video conferencing in English or Spanish and as old as translating and interpreting in Mixe or Zapotec.

Bibhushana Poudyal—Making as an Endless Deconstruction of Epistemes

I am a Ph.D. candidate in the Rhetoric and Writing Studies Program at the University of Texas at El Paso and an Honorary Overseas Digital Humanities Consultant at the Center for Advanced Studies in South Asia (CASSA). My doctoral research combines South Asian Studies and Critical Digital Humanities. I define Critical Digital Humanities as the development, use, and reflection of and on digital tools and methods to address and engage in old and new critical questions in Humanities by consciously bringing in rigorous, radical, and relentless conversations among these tools and methods, these questions, and Cultural Criticism. With this interpretation, I am building an online, open-access

digital archive of my street photography in Kathmandu Valley, Nepal, while also documenting and theorizing the process of building this archive. This archival project is available at <http://cassacda.com> and is titled, *Rethinking South Asia via Critical Digital A(na)rchiving: Politics, Im/possible Ethics, and Anti/Aesthetics* (RSA-CDA). Through the Multilingual Research Consortium and the Women of Color in Computing project, I worked with our team to develop the usability testing processes and protocols that I am implementing in the development of my archive.

To work through this project, I am studying various theories and praxes of digital archiving via postcolonial and feminist orientations, arguing that archives, even when grounded in benevolent intentions, cannot entirely *represent* the complexities of any phenomena, including, in the case of my project, South Asian societies and peoples. As Ellen Cushman clarifies, “[S]cholars need to understand the troubled and troubling roots of archives if they’re to understand the instrumental, historical, and cultural significance of the pieces therein.”²⁴ I argue that as post/de/anticolonial and/or feminist archival theorists and DH practitioners, we should always seek alternatives to representation, rather than only developing alternative representations. Making archives, however ethical they try to be, are never entirely free from the matrix of power structures. The simple way to understand this limitation is by asking a question: Who does and does not have access to building archives, and to making in general?

Through these questions, my digital archiving project attempts to showcase the political, ethical, philosophical, and aesthetic journeys that push toward decolonizing and depatriarchalizing the archives, digital archives, digitalism, and meaning-making performances. The goal of this project is to offer a multidimensional contingent of narratives regarding Nepal and South Asia, to challenge linear digital representations of Nepal, and to critique the claims that one can “truly” represent Other(ed) worlds (i.e., the discursive and material spaces that

24. Ellen Cushman, “Wampum, Sequoyan, and Story: Decolonizing the Digital Archive,” *College English* 76, no. 2 (2013): 116.

are sometimes categorized as “Third” world countries, the Global South, Non-Western worlds, etc.). Through my project, I invite my audiences to rethink these Other(ed) worlds and their representations.

Overall, my project hopes “to further illustrate how issues of access, innovation, and cultural training intersect in the design and dissemination of contemporary digital archives and archiving practices, and how collaboration and participatory research, which have always been at the heart of DH, can also be critical components of building CDH infrastructures in perceivably ‘non-traditional’ spaces.”²⁵ Therefore, through my internship with the Women of Color in Computing Project and the UX techniques planned and designed with this project team, I am regularly conducting user-experience (UX) research related to my digital archive with different non/academic non/South Asian audiences to bring out multiple contingent narratives and to build an archive with my community. Recently, I conducted a UX study in Nepal with participants in a workshop titled, “Critical Digital Humanities and Participatory Design: A Workshop Series in Kathmandu.” Through an invitation from the South Asian Foundation for Academic Research (SAFAR), I co-facilitated this workshop with Dr. Laura Gonzales. The purpose of my UX study was multifaceted: to help me select banner images for my archive; to get feedback on my homepage text; to help me decide on the themes for various exhibitions in the archive; to experiment with the nature of metadata; and most importantly, to build the archive together with different users and stakeholders in the project. Through this study, I seek to develop an antenarrative of Nepal and South Asia. Natasha J. Jones et al. delineate antenarrative as: “part methodology and part practice, an antenarrative allows the work of the field to be reseen, forges new paths forward, and emboldens the field’s objectives to unabashedly embrace social justice and inclusivity as part of its core (rather than

25. Bibhushana Poudyal and Laura Gonzales, “‘So You Want to Build a Digital Archive?’ A Dialogue on Critical Digital Humanities Graduate Pedagogy,” *JITP Pedagogy*, 15 (2019), <https://jitp.commons.gc.cuny.edu/so-you-want-to-build-a-digital-archive-a-dialogue-on-critical-digital-humanities-graduate-pedagogy/>.

marginal or optional) narrative.”²⁶ My WOC in Computing internship helped me in finding ways of performing an ethical collaboration with community in technological design and archive building. The reflection fostered through my UX research, as well as my journey of conducting street photography and building the archive itself, made evident (to me) that making is an endless deconstruction of epistemes. This means a relentless construction of meanings/knowledge/archives and at the same time, never stopping to critically examine these constructions however ethical they might sound, look, or feel. This rigorous construction and questioning of epistemes is what making is.

Implications and Conclusion

Through our layered and relational reflections, our research team orients to making as a *techné*—“a heterogeneous history of practices performed in the interstices between intention and subjection, choice and necessity, activity and passivity.”²⁷ There is no singular definition of making, makers, and makerspaces. Instead, aligned with the goal of this collection, which emphasizes “the critical work that is being done to cultivate anti-oppressive, inclusive and equitable making environments,”²⁸ this chapter provides story-driven illustrations of what making means for us as women in technology design.

The understanding of makers that we are pushing for is related to how Sara Ahmed defines feminism. She says that there is no definition of feminism as such, as “not all feminist movement is so easily detected. A feminist movement is not always registered in public. A feminist movement might be happening the moment a woman snaps, that moment when she does not take it anymore... the violence that

26. Natasha N. Jones, Kristen R. Moore, and Rebecca Walton, “Disrupting the Past to Disrupt the Future: An Antennarrative of Technical Communication,” *Technical Communication Quarterly* 25, no. 4 (2016): 212.

27. Barbara Beisecker, “Coming to Terms with Recent Attempts to Write Women into the History of Rhetoric,” *Philosophy & Rhetoric* 25, no. 2 (1992): 156.

28. Maggie Melo and Jennifer Nichols, *Re-Making the Library Makerspace Critical Theories, Reflections, and Practices* (Forthcoming), <https://litwinbooks.com/books/re-making-the-library-makerspace/>.

saturates her world, a world.”²⁹ Similarly, the work that we share in this chapter, while grounded in ongoing projects such as the Multilingual User Experience Research Consortium and the Women of Color in Computing project, is at the core a work of often-invisible relationship building and collaboration. As researchers and practitioners, such as the contributors to this collection, continue pushing for diverse representations of makers and makerspaces, we argue that listening to stories of feminist collaboration and relationality in technology innovation can help us continue valuing, welcoming, and sustaining diverse perspectives to making. Paying attention to not only the products, but also the processes and relationships that shape maker initiatives can help us continue expanding the boundaries of perceivably monolithic movements. As our projects demonstrate, marginalized communities (e.g., multilingual communities of color) have always been makers and have always led Maker Movements. Thus, the goal of pushing back against traditionally-held notions of making as a male, Western-oriented practice, is largely reliant on learning to listen to the work that our communities have been engaging in and sustaining for centuries.

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29. Sara Ahmed, *Living a Feminist Life* (Durham, NC: Duke University Press, 2017), 3.

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