Introduction

EquilibriUX—Designing for Balance and User Experience

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In March 2020, the COVID-19 global pandemic shifted the way that the world communicates; circumstances required that most citizens of the world shift their communication to virtual environments. With new communication needs, usability became a greater necessity, as many users seeking to maintain relationships and to work remotely while maintaining social distance and respecting quarantine were required to conduct communication through digital means. We predict that, with this shift, usability testing and design principles must also shift; most workers have learned to use tools to accomplish their work, expecting tools to be user-friendly and usable. At the same time, the world experienced numerous conflicts and the global environment changed. The US experienced racial conflict (Chavez, 2020; Sugrue, 2020); Hong Kong saw political upheaval (Barron, 2020; Chor, 2021); Italy experienced unanticipated mortality (Chirico et al., 2021; Modi et al., 2021); nations around the world (many underserved and poorly prepared) experienced natural disasters and political unrest (Omer, 2020; Thompson, 2020); and Japan experienced a shortage of healthcare providers to care for COVID patients and to vaccinate (Du & Katanuma, 2021), all while preparing for and hosting the world at the 2020 Summer Olympics (Yoneoka et al., 2022). One U.S. presidential administration pushed vaccinations through testing and approval in record time (Mango, 2021; Vazquez & Carvajal, 2021), and another U.S. presidential admin-

istration surged forward to make vaccinations available to U.S. citizens and to less fortunate nations (Samuels, 2021; Stevens & Ahmed, 2021). In response to the shift to remote work, the global pandemic and need for information, and the world's conflicts as well as unprecedented natural disasters, researchers were and continue to be called to expand usability testing and application as well as perspective on effective usability principles. As Technical and Professional Communication (TPC) expands its research and scope of users, it also calls for expanded user-centric focus with efforts to establish equality in design for all users.

At the time of preparing this edited collection, our nation is experiencing a slowly decreasing number of COVID cases and thus considers the pandemic to be under control, although new strains of the coronavirus have been identified, and citizens around the world are being encouraged to receive vaccination boosters (U.S. Food and Drug Administration, 2023). Having experienced three years of a pandemic, we find ourselves emotionally exhausted and longing to return to normalcy, but we also seek to apply our experiences to create better ways of living, doing, and working. Perhaps we are nearing a pinnacle in some aspects, but we also see the timeliness in making real change.

In a collegial conversation one day in early 2021, we were discussing our concerns about TPC and usability research. We acknowledged the influence of the COVID pandemic and the world's many influential current events through the lens of TPC. As we conversed, we identified the importance of balance in design, which allows designers to respect others and gives designers the benefit of the doubt (Lancaster & King, 2022, p. 2). We also expressed concern over the growing dissension in the field, our country, and the world, and we talked about our desire for reconciliation, empathy, and harmony. As we continued to talk, we shared experiences that had influenced our concerns and our design philosophies.

In this conversation, the term *equilibriUX* was birthed; Amber began to advocate for balance, and Carie, then teaching a scientific publications and communication skills class that had just completed examining chemistry writing, brought up *equilibrium*. The conversation inspired us to discuss recent literature, and we both voiced concern that the field was becoming perhaps hyper-focused and was not considering new research on studies that could create unity, reconciliation, and balance. We reached out to other colleagues in TPC and in usability research to ask if they shared our concerns, and the consensus was, "Yes!" The result of our search for balance and new perspectives is this edited collection.

From 1999 to 2003, I (Amber) had a very personal experience with failed UX, which drove my passion to improve the design of communication—and ultimately to publish this book. As a first-generation college student and daughter of a blue-collar worker, I saw firsthand the effects of marginalized voices and the grave (and fatal) effects that omission of UX in communication design can have on the people relying on communication to do their work. I was a graduate student then, and my dad was a Ford Motor Company factory employee. In 1999, a boiler explosion at the Rouge plant (in Dearborn, MI) took the lives of several factory workers and injured many others. I remember the outrage and heartache that so many people in the Ford community felt. But it was not until 2003 when, as a doctoral student, I began researching the explosion that I truly understood and empathized with the Ford factory community. I spent days in the Michigan OSHA reading room sifting through and examining documents from the investigation. Learning that the explosion tragedy likely could have been avoided with better communication was heartbreaking: if better workplace communication practices were in place, if factory workers had participated in the design of their workplace communication, if technical information had been made more accessible, if employees' voices had been heard. These were harsh realities to face, and it took me nearly two decades to publish my research on this case (Lancaster, 2018). It was a project I had hoped to make my dissertation, but the emotional aspects, my ties to the Ford community, and my respect for my father's retirement status hushed my desires to pursue it more publicly. With the passing time came healing notions, but almost 20 years later, I still feel strongly that these lives matter, that including their voices in UX matter, and that social justices and information rights matter. I find myself wanting to advocate harder for those voices to be heard, but I struggle with being heard myself. With this edited collection, I hope we progress and continue pushing to achieve agency and balance in the design of communication and that we accomplish greater equality in UX practices.

Being raised in a military family, I (Carie) was blessed to move around the United States and the Far East, as my father served as a communications officer for the U.S. Armed Forces. Early on, I learned about the diversity of different areas of the world and the beauty of language, culture, history, and humanity. Our family experienced some jolts of cultural change as we moved from San Antonio, Texas; to Montgomery, Alabama; to Honolulu, Hawaii; and then to Tokyo, Japan. The military community is also diverse, and my friends in these various locations had different ethnic, religious, and cultural backgrounds—a kaleidoscope of

humanity. I appreciated the joys of being culturally educated in vivo, but I also witnessed the ugliness of prejudice and the horror of hate, and I personally experienced the challenges of being considered an outsider—specifically a "haole" and then a "gaijin." When I returned to the United States for college, I struggled with culture shock and was more aware of challenges. (I had to learn to drive on the left side of the road, calculate mph, consider different clothing sizes, and learn regional language and accents.) Then, as a graduate student, I was exposed to the power of truly universal design. My passion for empathic design expanded as I studied usability and design, particularly as they relate to medical health; in my research, I continue to learn the power of virtual tools designed for global audiences (varying per age, education, ethnicity, geographic location, and perspective of disease and medicine) as I seek to dignify diverse patients' and users' voices (King, 2017). Now, serving at a university that is nationally ranked for its diversity and international student population, I am constantly expanding my perspective about the value of inclusive design. These experiences inspire me to advocate for my users and pursue designs with a global worldview. In that way, I advocate to create balance in the polyphony so that unheard users are a design priority, but designers are trusted, secondary users are considered, and UX is reconciled with designs created with kindness for humanity. The result is a balance in design: what we have termed *equilibriUX*. I hope this edited collection is a step to expand this conversation in TPC.

Practical and Academic Relevance: Moving Beyond "Localization"

Localization has been defined as "creating or adapting an information product for use in a specific target country or specific target market" (Hoft, 1995, p. 11). In practice, localization increases the likelihood that interface, design, and communication messages will be received in intended and favorable ways. However, localization can also create barriers and challenges, particularly when secondary and tertiary audiences seek to use tools that do not meet their needs and expectations. Any product that is well designed and audience-centric will likely generate positive experiences for target users and likely show a positive return on investment. However, measuring what counts as a positive return becomes more complex when we consider more than the target user and see the diverse variables defin-

ing "user needs." If "the majority" is no longer "the metric" for making design decisions, whose voice gets heard, whose voice influences design decisions, and whose voice is manifested in the final product? Should we always design for a targeted country, market, or user?

Localization considers design choices related to the users' specific cultural expectations but also limits the globalization of the design (Alexander et al., 2017). Localization also overlooks research of underdeveloped nations whose user citizens have not been considered in user experience (Acharya, 2018). As scholars, we note that localization limits designers, designs, and users per geographic and cultural designations; therefore, when considering usability, we propose to expand universal design.

Effective design that meets the expectations of diverse users—e.g., per culture, age, gender, location, ethnicity, education—requires that we work with users as codesigners to design products that they can use (Acharya, 2018), but it also requires that we seek to create just-in-time design and interactive influences that connect diverse users with design. Scholars call for unique research and design principles, particularly because users differ across cultures (Acharya, 2018). But design cannot meet all the needs of users for international access. We also want to dignify the designers who have insight on the products they are creating: to give them the benefit of the doubt in design decisions.

In considering this challenge, we considered the metaphor of a chemical reaction—the blending of compounds (cultures and perspectives) in an experiment (a design) to create a reaction (a resulting product from the designer) that is safe and effective (that benefits the user).

In chemistry, when both elements are countered in a beneficial or neutral response, balance, or *equilibrium*, is achieved. *Equilibrium* is (1) "a state of intellectual or emotional balance" and "a state of adjustment between opposing or divergent influences or elements" and (2) "a state of balance between opposing forces or actions that is either statis (as in a body acted on by forces whose resultant is zero) or dynamic (as in a reversible chemical reaction when the rates of reaction in both directions are equal)" ("equilibria," n.d.). Equilibrium requires analysis and evaluation of interacting influences to achieve balance; that is, all variables are connected and dependent to maintain a state of balance.

"Le Chatelier's Principle" (also called "Le Chatelier-Braun Principle" [Smith, 2020]) notes that "if a stress is applied to a system at equilibrium, the equilibrium will shift to counteract the stress" (Treptow, 1980, p. 417). More specifically, "When a system in dynamic equilibrium is acted on

by an external stress, it will adjust in such a way as to relieve the stress and establish a new equilibrium" (Norwich, 2010, para. 1). In considering responses, reactions, and influences, chemistry anticipates the different elements and their reactions when they are involved in an interaction. Each element has characteristics that direct it to respond to the situation. The concept then indicates a counter to imposed influences, rather than a negation of influences. In anticipating reactions in chemistry, the scientist must consider all influences as well as participate and counter reactors by instigating counter-reactors, rather than negating reactions. These reactors include temperature, mass, and pressure (Lower, 2021), and the model can be applied to physics, physiology, and linguistics (Norwich, 2010) as well as biology and economics (Smith, 2020) and nutrition (Henry & Camps, 2018). Per the principles of equilibrium, the balance of reactions is key.

We argue that this model can also be applied to localization and UX—a state of balance we call *equilibriUX*. Usability must exist with balance as the goal. With this balance—a product with beneficial engagement and interaction from a variety of users and satisfaction from the designer—is decreased "stress." It is in this state of balanced design we achieve equilibrium in UX. As we apply the metaphor, we encourage designers, researchers, and instructors to also consider primary audiences but also plan on and know secondary and tertiary audiences who engage through a product or design, so they can anticipate potential interactions, evaluate contexts, and analyze outcomes to create balance. That balance involves stakeholders but also product, design, and development.

EquilibriUX:
A New Model to Achieve Agency and Balance

We propose applying this model to TPC, and more specifically to UX, which has a history of adopting terms and principles from other fields (Sánchez, 2016, para. 3) and adapting practices to create its own. *EquilibriUX* describes usability design and testing, not to globalize a design by eliminating characteristics that relate to users to negate reaction but to integrate reactors of character and influence to establish balance and to respect diversity in design. That balance allows for the expertise and cultural competence of the designer and also respects diverse users' voices and perspectives to empower users and create balance in the influences of

design. It also considers the agency and needs of diverse users, including students, instructors, women, underrepresented populations, and users with needs for accommodation. (This book addresses these users and more.)

EquilibriUX also considers subjective data from users (Sawyer & CDRH Work Group, n.d.) and, as users tell their stories, this balance "giv[es] power away" (Bacha, 2018, p. 222) to dignify the voices of users. In creating balance, we consider their needs and integrate additional characteristics—e.g., accessibility, plain language and expand our designs to allow for "local" needs but also anticipate that, in a global environment, our products (particularly those online) can be accessed and valuable to those we previously might have "othered." *EquilibriUX* results when designers gather different user stories and testimonies (as encouraged by Bacha) and apply those stories as reactants to the design process to create balance between the voices and needs of designer, client, and users (or potential users, as identified by personae). In seeking this balance, this equity, we also seek action to advocate for underrepresented communities and users (social justice, per Jones, 2016).

EquilibriUX focuses on use rather than content (aligning with Sun [2012], as cited in Acharya [2019]) and decreases power struggles to prioritize and include preferences and expectations from a diverse community of users, giving voice to *all* users. The principle also requires that designers know communities and aspire to cultural and intercultural competence "to understand localization practices, politics, inequalities, and social justice issues, especially in those countries where human rights are violated and privileged groups of people have access to information technology" (Acharya, 2019, p. 22).

The principle requires tolerance of conflicting opinions and experiences and design with a human element (Dragga & Voss, 2001), something that the world appears to be lacking. Some products allow for localization—when the user community is limited to a particular corporate or geographic setting (e.g., local news in Seoul, South Korea). However, other products, particularly those that are globally accessible, are best designed with a broad perspective of intended user communities. (This call responds to Sullivan's 1989 original call to move beyond a narrow definition and practice of usability as well as revisiting, per Johnson et al., 2007.) These products may also be used locally but by those who are not typically "local," such as tourists, immigrants, visitors, and new arrivals in a locality. In building a "bridge" between diverse users with user-friendly

design, we require balance from diverse participant communities, and balance requires collaboration, relationship, empathy, and engagement.

In discussing *equilibriUX* outside the field of TPC, we have connected with a similar mindset. For example, in a conversation with a librarian (who studied usability as a graduate course), we noted the example of community and academic library websites in the United States. These sites can be used by the local community to identify scheduled events, to reserve and access library holdings, and to connect with experts who manage data and resources. However, these sites also serve as a cover, or face, for the local community and a portal for those in other communities and nations who are seeking resources. In this way, in a post-pandemic world, community and academic libraries anticipate that users beyond their previous user population access their site and depend on it for information and resources, and libraries must anticipate this user population and integrate design elements in to create balance between its local users, its librarians, and its secondary audiences.

Some design choices are more obvious than others: e.g., plain language (Plain Language Act of 2010; Plain Language Action and Information Network, 2011). In medical and health communication, for example, we see a call for plain language to meet the needs of a wide readership, and the World Health Organization (n.d.) has encouraged designers to simplify language to communicate with clarity and concision. Plain language allows a broader community to access technical documentation (Cheung, 2017) and thus is an important characteristic of design with *equilibriUX*.

Other design choices are complex because diverse users are influenced by culture, local standards, and preset notions or practices (e.g., individualistic versus collectivistic society; Hall et al., 2004). Balance requires that both influences are considered.

Usability must be emphasized in design because a well-designed and audience-centric product creates a return on investment for the designer and originating organization. However, usability also calls designers to consider the integrity of their work and serve as advocates for users. The idea of designer as advocate is not new but also is not universally accepted; the idea does consider that, if usability involves ongoing development of a design with ongoing analysis, users' rights and interests are an ethical responsibility of the designer (Human Factors & Ergonomics Society, 2020; IESBA, 2019; User Experience Professionals Association International, n.d.). Usability as advocacy considers digital transformation and the user's experience as well as the designer's observation and interpretation and

thus requires diverse perspectives and expertise that influences the user's experiences and recognizes each user as a unique individual.

As technical and professional communicators have considered their users, they have considered the characteristics of their users, allowing those characteristics to influence human-centered design and to establish usability and the user's experience as centered on representatives of users, who are influenced and defined by culture (St.Amant, 2015). Culture and communication, the essence of being human, are intertwined and thus should be considered in the construction of words and visual designs of documents and tools to ensure that user experience is a positive and relevant means. In considering construction, TPC scholars consistently call for designers to consider the user experience—through narrative inquiry (e.g., asking users to respond to design; Jones, 2016) and participation in the design process (Agboka, 2013; Bannon & Ehn, 2013; Getto, 2014; Johnson et al., 2007; Moore & Elliott, 2015; Oswal, 2014; Spinuzzi, 2005): to know the user, to ensure that the user has input in design, and to create a more user-centric approach to the design process.

Users cannot always participate in the design process. However, the process should not exclude users in communities who may face participation challenges: for example, distance; cultural differences (Hall et al., 2004); migrant status (Rose et al., 2017); language barriers; or disabilities (Oswal, 2019). Every effort should be made to include voices from all user groups. How do we accomplish this, though, when historically these voices have been marginalized?

TPC scholars have called for social justice to be a focus of technical communicators, considering contexts that cross cultural, disciplinary, and organizational lines and expanding research to advocate and consider users who are underrepresented (Walton & Jones, 2013). This call has been focused even more to establish social justice as an objective of human-centered design, with feminist theory—one that "embraces concepts and considerations of equality and justice" (Jones, 2016, p. 477)—as one potential framework. However, a variety of theoretical approaches have been considered, with the goal of strongly encouraging technical communicators to be trained in these areas (Cleary & Flammia, 2012). Designers must respond to this call for social justice without focusing only on one subset of the user population. Instead, they need to consider the polyphony of user voices—to increase the dignity of the voices of the previously unheard without silencing other voices. In this way, design embraces balance and respects the value of *all* voices, *all* users, *all* stakeholders.

From Here to There: *EquilibriUX* in Practice

When the user community shares geographic location and culture, the designer can localize the design to ensure that the user's needs, expectations, and preferences are considered. Localization requires that technical communicators be culturally competent. They must pay "attention to the characteristics and needs of a particular culture, population, or even individual" (Breuch, 2015, p. 114) to build that competency. In that way, they are able to understand "material culture and members' practices" (Bannon & Ehn, 2013) and build relationships and collaborate with community strategists—to cultivate "a global network of people with diverse skills, identities, and experiences, covering a range of organizations, cultures, languages, and geographical locations . . ." (Shivers-McNair & San Diego, 2017, p. 100) and to create a culturally focused participatory design process. Even in localizing, they pursue balance in design by considering the diversity of users. In this process, technical and professional communicators are encouraged to involve members of a cultural community to gain insight into cultural priorities that may use specific design elements related to navigation, color, and text (Alexander et al., 2017, p. 78) to design with the culture's prominent standards and expectations such as design complexity (p. 81) or thought and browsing habits (p. 84). Culture does not always align with national, geographical, or religious alignment but can also consider organizational cultures (Eriksson & Eriksson, 2019).

Blending the global characteristics of online communication and the localized needs of users and their specific cultures, "glocalization" (Robertson, 1995) does acknowledge the broader, universal audience and also considers the particulars of localized design to create a "balance" (Breuch, 2015, p. 114). Scholars have called for adapting regional products to create usability that expands the usefulness of products across the globe (Acharya, 2019), expanding a product's usefulness to "resource-constrained settings" (p. 8).

In this tone, as TPC embraces the principle of *equilibriUX*, we consider concerns that research related to usability and localization has become controversial. At times, the call for social justice may integrate political and social value in design work and thus may reflect the polarization of the United States and the world. At other times, the TPC field narrative, rather than being unifying, appears to be battling internally when the field needs to be unified. However, we see research and scholarship as a tool to move the TPC field forward, strengthening what technical communicators

do agree on: empowering users and considering the agency and voices of all users are ways to "level the playing field" and to dignify those who are underrepresented or oppressed without silencing those who have not experienced such submersion. Research and scholarship can unify us by demonstrating leadership from the field of TPC, integrating empathy, kindness, and inclusion for *all* in user-centered design.

If our research is left unpublished, if the knowledge is ignored because of the chaos it might create, we will never achieve *equilibriUX*. We will never know the countercultures—those who think, research, and perceive differently than we do (from which we all learn and grow)—to create balance in the voices involved. When we consider only the primary stakeholders in design, we deemphasize empathy and balance for the greater good. But when we silence those voices who have been prominent in the past, we defy balance and only shift the imbalance from one set of voices to another. Without *equilibriUX*, we will never be *truly* inclusive; for inclusion requires that *all* voices are heard and that *every* user is equal, even if they are different.

Extending Conversations: *EquilibriUX* in this Collection

We recognize the TPC field's conversations are moving us in the direction of achieving *equilibriUX*, and more research and scholarship will continue to advance our field. In this collection, we offer what we hope to be even more expansive action in TPC—to acknowledge and embrace inclusion and intentional user consideration and involvement in design and also to consider *all* users as valuable, including some populations that continue to be overlooked in usability and UX design. We have considered how to categorize the included projects, and, considering the authors' objectives, we have expanded the conversation to address *equilibriUX* in professional training and curriculum design, in medical and health tools and narratives, and in civic and social projects; the diversity of voices is inspiring.

Shared purpose is a powerful motivation. Shared purpose in designing TPC curriculum invests in the future of the field with a focus on the "localization" of curriculum for TPC students. Expanding curriculum to focus on participatory design and users' cultural representation but also considering humanity allows technical communicators to integrate empathy and heart into curriculum design and thus in our goals for social justice and user advocacy. The motivation then is not political or social

but personal and relational, with intentional focus on the diversity of all users. (After all, *every* user is a unique individual.)

The consideration of all academic voices in TPC is vital to the dignity of our field. Our community-college faculty who teach first- and second-year (not "lower-level") students are able to create strong community-centered foundations for TPC's role in education. Our teaching-track and teaching faculty in higher education bring valuable expertise, pedagogical knowledge and experience, and passion to their classrooms and are an important part of TPC in higher education. (We choose not to use "contingent," as these instructors' skills are not accidental and should not depend on circumstances, and we choose not to use "non-tenure track" because these faculty are not "non" entities. Perhaps TPC can begin advocacy within its own ranks by establishing new terminology that eliminates the "non" and dignifies the work that these qualified instructors do in our field.) Without excluding, we can dignify these voices, which may be overlooked in publications, even though these instructors are well qualified and educated.

More and more, TPC is empowering patients and communities to improve health, to thrive, and to survive natural disasters and circumstances. We provide systems for communication between stakeholders, including those who engage in disasters from within and from outside the context. TPC can unite in investing in the health of communities around the globe and in learning from localized experiences to expand our abilities to care—for those who struggle with mental health issues, those who have rare conditions that qualify them with special needs, those who may be struggling to empower their families with instructions on how they want to live and die, and those who have served and who have received care during the recent pandemic and the continuing evolution of patient-physician communication. We also continue the call to expand UX research beyond U.S. borders and those of Global North nations as we consider research of users in various nations around the world. TPC and UX must embrace the global and post-pandemic emphasis on all audiences worldwide. In this way, we dignify other voices: in this collection, beekeepers in Lebanon, healthcare providers in Nepal, new and expecting mothers and physicians in China, rideshare passengers in China, the designers who create tools for these users, and the systems that ensure that the tools are available and functioning.

Technical and professional communicators can create *equilibriUX* in considering technical and international challenges that have not been addressed. We can seek to establish how TPC can invest in the management

of mental disabilities and challenges that include visual impairment; the field can ask how technology can be used to better the lives and usability of tools for those who experience physical and mental challenges. We can consider how virtual communication, such as ride-share apps, must consider the safety of those who use the tools—in an effort to prevent harm with effective, strategic, and predicting usability testing. The field can consider how to design social and political campaigns to ensure that all participants in U.S. electoral systems have voices. And we can investigate ways to ensure that we are taking care of the earth, resources, and life to prolong life across the planet.

After inviting scholars to submit to this collection, we were delighted by the diversity, the freshness, the respect, the passion, and the compassion that the scholars relayed in presenting their practices, programs, and research. The submissions came from diverse scholars—diverse in age, gender, ethnicity, citizenship, level of education, geographic location, and notoriety in the field of TPC. The expertise of some authors is balanced by the newness of other voices—which gives us great hope for the future of the field.

Thus, with this edited collection, we seek to build balance: to celebrate TPC and the diversity of those who study, research, and practice in the field and to challenge TPC scholars, instructors, researchers, and practitioners to embrace and practice *equilibriUX*: that balance of sometimes controversial content to create harmony and to participate in engaged and diplomatic discourse. We build on the scholars who have come before us, expanding their call but uniting our field to dignify *all* users, *all* voices, *all* communities. This expansion of the call is idealistic, but it is realistic in that, by integrating an awareness of humanity as well as empathy, compassion, and inclusion for all humans (without bias, retribution, or division), TPC can improve to be and be known as a field for agency and balance through words, pictures, and intent.

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