EMPATHY IN CONVERSATIONAL AI: RHETORICAL ANALYSES & RECOMMENDATIONS

by

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DEDICATION

This thesis and the work that went into it is dedicated to my husband, David Chambers who patiently supported me as I took this project around the world. He drove me across all the western United States as I annotated books and sources, he waited as I interviewed people while we were in Hawai'i. Even now, as I complete this work in Switzerland, he offers me space to finish my goal. Thank you, David. You bring the whole world to me. Thank you for sharing our travels with this thesis.

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Lastly, to Stanley Kubrick, I will do my best to keep "observation" from being "a dying art."

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LIST OF ABBREVIATIONS

Abbreviation	Description
AI	Artificial intelligence
GUI.	Graphical user interface
HCI	Human-computer interaction
UX	User experience
VAPA	Voice automated personal assistants

ABSTRACT

The aim of this analysis is to understand how empathy is utilized in the design process of conversational artificial intelligence and to gather recommendations influenced by empathy rhetoric to broaden the use and understanding of empathy in conversational AI. This is implemented by constructing four empathy rhetoric tenets to effectively provide a lens by which to examine six artifacts that represent a cross-section of discourse in human-computer interaction (HCI), specifically user experience (UX), and conversational AI. The results illustrate the rich possibilities in conversational AI for creating empathetic user experiences. Recommendations are gathered to serve as the foundation for a framework for empathy in conversational AI. The intention behind this work is that as technology becomes more human, conversational AI designers should be encouraged to understand the complexities of human qualities carefully and look to work from other disciplines such as rhetoric to provide a more nuanced understanding of qualities like empathy.

I. INTRODUCTION

Humanity's fascination with artificial intelligence is not new. "The dream of creating an intelligent machine—one that is as smart or smarter than humans—is centuries old but became part of modern science with the rise of digital computers" (Mitchell, 2019). Pioneers in the history of computing such as Alan Turing and John von Neumann deemed artificial intelligence possible, seeing "strong analogies between computers and the human brain." Within the development trajectory of powerful computers comes the creation of intelligent computers. Intelligence in computing may be expressed and witnessed by humans in many forms, one particularly conspicuous way is through language or voice. "We are entering an era of voice computing," wrote science and technology journalist James Vlahos. "Voice is becoming the universal remote to reality, a means to control any and every piece of technology. Voice allows us to command an army of digital helpers - administrators, assistants, concierges, housekeepers, butlers, advisors, babysitters, librarians, and entertainers" (2019). Voice exemplifies complex advancements in human-computer interaction. Humans can interact with technology without having to learn a programming language, how a keyboard or screen works, or even where to touch a device. Our input for computers can be the same as our input for humans. Voice, conversation, language, speech; it demonstrates how the singularity is ever nearing.

Years ago, technology that interfaced with the end-user through conversation, voice or otherwise, belonged to fiction. Stanley Kubrick's 1968 cinematic classic *2001: A Space Odyssey* features HAL 9000, a computer that is effectively the brain of a spaceship (Kubrick, 1968). HAL, which stands for heuristic and algorithmic, was based on real

research from Bell Labs. Science fiction author Arthur C. Clarke collaborated on the script with Kubrick and authored the novel of the same name concurrently with the movie's production (Ruchti et al., 2000). In 1962, Clarke visited his colleague and devoted researcher at Bell Labs, John Pierce, who introduced him to the latest endeavors in synthetic speech technology using an IBM 704 computer (Bell Labs: Background: Bell Labs Text-to-Speech Synthesis: Then and Now, n.d.). The visit captivated Clarke and inspired the now infamous, murderous AI.

Research like that of Bell Labs continued and the usable outcomes moved from fiction to fact. IBMs Watson program famously beat human champions at Jeopardy! in 2011 (Mitchell, 2019). It listened for external prompts, searched for appropriate answers, and verbalized responses in humanlike speech within a matter of seconds. OpenAI's GPT-3, "an autoregressive language model with 175 billion parameters" exhibits highly advanced natural language processing (NLP) by translating and writing text perfectly (T. Brown et al., 2020). It can even write "compelling poems without a human seeding it with the first lines or even a title" (OpenAI, n.d.). As artificial intelligence becomes more accessible and more involved in our—the general public of modernized civilization—lives, it seems valuable to consider what the human or even emotional consequences could be.

The part of *2001: Space Odyssey* that thankfully remains untrue is that conversational interfaces like HAL do not have a track record of killing their end-users. After HAL strands one of the spaceship's co-pilots in space without oxygen, the remaining pilot, Dave, deconstructs HAL rendering him effectively, "dead." As HAL shuts down for the final time, it says to Dave, "I'm afraid. I'm afraid, Dave. Dave, my

mind is going. I can feel it. I can feel it. My mind is going. There is no question about it. I can feel it. I can feel it. I can feel it. I'm a... fraid" (Kubrick, 1968).

The technology that makes HALs become a reality seems remarkably close. In some respects, it already exists. IBM's Watson is not so different from Kubrick's HAL without a spacecraft. In these lingering moments, I must ask, how are we discussing empathy in the conversation of this type of technology?

Background

I am a conversation and content designer focused on utilizing rhetoric to create empathetic user experiences. This is the line I have on my LinkedIn and Twitter bios and professional portfolio. I am a student of rhetoric who has had a singular focus on working in the tech sector. Like most people my age, technology has become central to my day-to-day life beyond my career-related interests. During the three decades of my lifetime, I have watched technology become more and more catered toward the human end-user. As much as we learn about our devices, our devices learn about us. They become an active agent in our rhetorical situations.

My Apple Watch tells me to stand up at the 50 mark of each hour because my husband is a therapist and his sessions last 50 minutes. When he's finished with a client, he decompresses by walking to my desk where I rise to hug him. It took about one month of living and working together during the COVID-19-induced quarantine for our wearable devices to algorithmically sync. My iPhone prompts me to "text Bailey," my best friend, most afternoons because for years we lived in the same building and would text as our workdays neared the end, "Do you want to go for a walk?" We're not neighbors anymore but I often follow the prompt and text her a "Miss you!" anyway. Our

Google HomePod knows we mean the Austin-based KMFA radio station when we shout, "Hey Google! Play classical music!" as we leave the house. We want the dogs to have something to listen to. We usually pipe back up once more with, "Hey Google! Volume down" before we use our iPhones to open the garage door and drive away in a vehicle that beeps at us if we change lanes without signaling and brakes automatically if we don't respond to a stopped car in front of us. Our lifestyle and use of technology are hardly unique, as the line between humans and technology has long since eroded. The modern, technology consumer need not take the time to learn a device because the device inevitably came out of the box ready to learn us.

But I have a problem. I think the world of technology, especially in user experience (UX), defines and deploys empathy in a way that, in my opinion, is lacking. When I apply a rhetorical lens and consider the ways rhetoricians define empathy to understand it in digital contexts, I yearn for more from technology. For the past two-and-a-half years I have researched how interfaces implement empathy and I am still unsatisfied. While technology appears to become more and more human than ever, I wonder how UX designers are encouraged to work with deeply human qualities like empathy. When I see how holistically rhetoric works with user experience, I think, "designers can do better; I can do better."

If I recall correctly, I was twelve the first time I saw *2001: A Space Odyssey*. The scene where HAL "dies" still haunts me each time I watch the film. The eerie sound of his voice lowering in pitch as the mechanisms that controlled him power down is an uncanny and unforgettable piece of audio. What I could not put into words until recently is how fascinating I find the empathy in that rhetorical moment. At once I feel empathy

for the “dying” artificial intelligence, and at the same time, consider whether empathy could have saved the pilots had HAL been able to feel it toward them. My dad told me once that there would be a scene from a movie that would influence my life more than I realized. That scene with HAL is the one. But Dad was wrong about one thing: I realize how much it impacts me.

As a liberal arts-loving undergrad, I chose to study rhetoric because I loved that I could use my creative, wordy brain to solve technical problems. At the time, I didn’t know how rhetoric would be the tool that would lead me to my own HAL, but I had a sneaking suspicion that it could. One of my early rhetoric courses focused on digital rhetoric and introduced me to the method of applying a rhetorical lens to contemporary situations. I was introduced to electracy and digital literacy by Dr. Justin Hodgson and researched networked writing under Dr. Clay Spinuzzi. I began what will likely become my lifelong project of using the human-centered, elegant discipline of rhetoric, to make sense of the ways humans interact rhetorically with technology.

I chose to attend graduate school with the express interest of becoming a better humanities-based technologist. When people ask the inevitable, “what do you do with a Masters degree in rhetoric?” I’d calmly answer, “I want to work in technology.” Which typically elicits confused responses, but I have a hunch that eventually, computers will be able to code themselves, though they will never be able to analyze the world with a human heart. I know that I can make an impact, being a good human to design good HALs. I can be a deeply feeling, empathetic, rhetorician thriving in tech.

This thesis will examine existing conversational AI research through an empathy rhetoric lens. I maintain that empathy rhetoric will provide a rich basis to better

understand how empathy is currently functioning in conversation design, and how it can function better in the future. In addition, beyond the scope of this thesis, I intend on creating a framework with practical, research-driven guidelines for conversation designers to utilize when aiming to write empathetic dialogue flows. Kubrick's view on technology was a hopeful one and did not see "the HALs of the near future in conflict with their makers" (Ruchti et al., 2000).

Disciplines

HCI, UX, and Conversational AI. In my early twenties, I realized that there was a field that had the same human-centered focus solving many of the same problems I wanted to solve with rhetoric: user experience (UX). User experience, as defined by the Interaction Design Foundation, "is the process design teams use to create products that provide meaningful and relevant experiences to users" (Interaction Design Foundation, 2019). User experience married my two loves; utilizing rhetoric to understand humans and their motivations through the use of language and symbols, and technology. There are two elements of user experience that I should define for this thesis. The larger field that UX may be examined within is Human-Computer Interaction (HCI). Research in HCI has been, as Carnegie Mellon HCI professor Brad A. Myers writes, "spectacularly successful, and has fundamentally changed computing. He goes on to define HCI by the systems that it covers "Direct manipulation of graphical objects, the mouse, windows, video games, and natural language and speech" are just a few of the systems under the umbrella of HCI (Myers, 1998). In short, HCI studies how humans and computers use one another to complete jobs and solve problems.

Conversational AI "allows the user to interact with a system through voice or

speech commands. Virtual assistants, such as Siri, Google Assistant, and Alexa, are examples of VUIs" (What Are Voice User Interfaces?, n.d.). Voice-enabled interfaces are a form of conversational AI and UX, however, because design, research, and production of voice and chat devices are relatively newer, less work overall exists. I have found that when searching for resources, materials, and literature on VUI or conversational design, it is helpful to broaden the scope to include UX generally, or HCI.

HCI as a discipline exists more predominantly in academic spaces, whereas specific programs of study, like UX, are less popular at the university level. Stanford, Carnegie Mellon, and Rice are a few of the renowned institutions that conduct HCI research and offer degree programs of all levels to their students (Best Human-Computer Interaction Colleges in the US | 2022, n.d.). For this work, the relationship of these fields is relevant because the literature, especially academic in nature, varies respectively. Sometimes research seems applicable to any form of human-interface experience, but sometimes the specific elements of the interface offer a nuance or complexity that can't be answered through generalization. Conversational AIs, for example, create an entirely different interaction experience than that of a more traditional graphical user interface (GUI). "When you speak…you can achieve a great deal of intimacy quickly," says Robert Hoffer the creator of SmarterChild, an early chatbot. "It empowers you to do a tremendous amount with your audience that you wouldn't otherwise be able to do" (Vlahos, 2019). Indeed, voice interfaces open doors that had otherwise remained closed. It provides interaction options for individuals who may rely on sound oversight to navigate their world, or parents whose arms are busy carrying a child. In its simplest form, shouting, "Hey Google! Volume down" as I am leaving my house is a small task

that becomes vastly easier to accomplish with the use of voice. My point is that in this thesis, there is literature that works for UX and HCI as a whole but may not apply for voice and conversational AI. Conversation, to me, is special in its ability to foster more intimacy and closeness with a digital agent and therefore complete tasks specific to that connection. “It’s the oldest interface,” writes conversation designer Erika Hall, “[it] is how humans interact with one another and have for millennia” (Hall, 2018).

Empathy in Interface. In a moment of empathy between a human user and digital interface, where does the empathy reside? This is a baseline that should be established before diving deeper into the analysis. It’s helpful to consider empathy as an equation that includes a subject and an object. The subject offers, expresses, or performs empathy towards the object, or the ‘other’ which is experiencing some plight (Blankenship, 2019). In the case of interface and human, the human user would be the ‘other’ and the subject would be the device. Because a device cannot create “true” empathy, rather it is simulated or performed, the empathy is constructed by the designer (Icon8, 2021).

It has been established that the aim of this thesis is to examine what research and direction exist within the greater field of HCI and specifically for conversational AI. Then to analyze this existing work through a lens informed by empathy rhetoric. The empathy rhetoric lens is constructed from four tenets that represent the holistic definition and theories of empathy that the discipline of rhetoric discusses. Six artifacts have been chosen to represent the current work within HCI and conversational AI. The artifacts are writing, academic or otherwise, on conversational AI. The artifacts will be discussed in relation to the empathy rhetoric tenets and their success and deficits will be noted and

analyzed. The data that occurs as a culmination of this effort will act as recommendations for VUI or conversation designers to access when creating a framework for empathetic design.

As the line between humans and technology erodes, the call for positive, ethical, and empathetic user experiences becomes louder. HAL was powered off because of his complete lack of empathy for the human condition. His programming made him a formidable partner when things were going his way, and when they weren't, he became manipulative and not human-centered. I am not trying to make a robot from the 1960s a cautionary tale for the 2020s, but I am saying it still impacts me and I think discussing how empathy can work in technology is important. We don't want to rely on AI to keep us alive if the people who created that AI have a weak understanding of empathy.

Scope

Rhetoric and HCI are both broad fields. To maintain focus and achieve comprehensive analyses for this study, there are some areas of omission. Writing and designing for conversational AI will be the primary focuses for analyzing empathy. Writing for conversational AIs may include multiple interface types, including voice or chat. It is not within the scope of this thesis or my understanding of technology to examine the backend elements of conversation design comprehensively.

One element of writing for conversational AI, specifically VUI, is tone, as in the tone of the speaker's voice. This will not be part of my analysis. This is an interesting and valid component of empathy, however, it opens the door to additional disciplines, for example, audiology, which is not in the scope of this project. I have intentionally chosen discussions of empathy that do not utilize or consider tone. Similarly, paralinguistic

behaviors, “such as the position of the head or facial features and eyebrows” are commonly used methods to gauge “the extent to which individuals share the same emotional state,” but like tone, these widen the parameters too much for this project (Archer & Finger, 2018), in some cases paralinguistic behaviors are acknowledged but not fully analyzed.

The perspective of my analysis will be localized in Western thought and Western uses of empathy. Empathy is closely tied to culture and can shift alongside it. This is important and poignant, but again greatly widens the purview of this project. Many, if not most, user experience designers work to improve the localization of their interfaces to meet the end-user where they are at. In that same vein, I will localize my work to my end-readers, the thesis committee at a Western university. The references I selected are mostly from Western countries, and in the few cases where they are not, they consider empathy from a perspective synonymous with the Western ones.

I will not delve into emotion outside of empathy. There is intriguing work on emotion in various forms of AI, but I will not include it in this research. I will focus on the practical use-cases of empathy in interface for graphical user interface (GUI) and voice user interface including chatbots and voice-assisted personal assistants (VAPAs), and any other device that may include voice as part of its interaction with the end-user. Under the larger topic of AI, there are far more digital products that work with human emotion, but for concision, I will only include the aforementioned uses.

Also worth noting is that the field of technology, specifically but not limited to AI and HCI, changes and progresses rapidly. Even in the time I have spent writing this thesis, I have found new resources and literature. I will strive to choose the most current

resources possible, however, I realize given the nature of the industry, much of this work will quickly become outdated.

Theoretical Scope. As introduced in earlier sections, HCI "is a multidisciplinary field of study focusing on the design of computer technology and, in particular, the interaction between humans (the users) and computers." As computing has become more ubiquitous and multimodal, HCI "has since expanded to cover almost all forms of information technology design" (What Is Human-Computer Interaction (HCI) n.d.). Historically, HCI has had academic roots while UX has a more recent past and focuses on the "practical application of HCI." While it has "become synonymous with designing websites and apps" it also includes a category of design that incorporates voice and conversation, VUI. For the purpose and methodology of this work, it is relevant to understand the relationships among HCI, UX, and conversational AI. HCI's longer existence and deeper presence in academia provide scholarly resources that are difficult to locate for UX and even more so for conversational AI (Human-Computer Interaction and User Experience, n.d.).

Conversational AI is academically relevant and interesting for me, beyond any other type of interface, because of its applicability to rhetoric. Erika Hall writes, "Taking a conversational approach to interaction design requires applying deeper principles of how humans interact with one another so we can create systems that succeed on human terms, no matter the mode of interaction" (Hall, 2018). This claim echoes my personal belief in conversation design: it has the capacity to create systems that work for humans, not that make humans work for it.

Rhetoric is of course my own academic discipline, but I see clear overlaps

between it and conversation design, leading me to operate on the assumption that a rhetorical lens may be particularly effective for this field. Conversation design piques my interest because of my studies in rhetoric; as an undergraduate and graduate student of rhetoric, I have been interested in learning rhetoric's ancient origins and how it moves and grows alongside human history; conversation is much the same. "It's the oldest interface," writes Hall, "[it] is how humans interact with one another and have for millennia" (Hall, 2018). Rhetoric and conversation agents also share similarities in function, they require at least two entities or agents and exist in the interaction of these parties. "Rhetoric," writes Anna Bendrat in her article, "Rhetoric in Digital Communication: Merging Tradition with Modernity" "deals with communication and interaction between people and anchors its analytical apparatus on concepts linking interpersonal communication with human action" (Bendrat, 2021).

Recent work with rhetoric, particularly "rhetorical ontology" or "how to do things with things" has provided useful theories by which to examine the digital world (Barnett et al., 2017). This rhetoric is important because it creates a space for non-human agents to exist within a rhetorical situation and provides a baseline for the human and non-human to exist equally.

Things provoke thought, incite feeling, circulate affects, and arouse in us a sense of wonder. But things are more than what they mean or do for us. They are also vibrant actors enacting affects that exceed (and are sometimes in direct conflict with) human agency and intentionality (Barnett et al., 2017). Giving "things" and their inevitable "thing-ness" the opportunity to hold the same weight in a rhetorical situation as the human, gives us access to "suspend the habituated emphasis on verbal language and

consciousness" that often occurs in other rhetorical practices (Hawhee, 2010). Conversational AI does include the use of verbal language, but it is obviously simulated and lacks consciousness, thus the suspended "emphasis" on that element is important in leveling conditions between thing and human.

Empathy Scope in Interface. It is useful to examine where empathy resides in a moment shared between interface and human. Employing the assumptions of rhetorical ontology creates the possibility to place device and human in the rhetorical empathy instance. Otherwise, it is unclear if the theories of empathy rhetoric would apply, considering the authors themselves do not consider the possibility that one agent may include some element of artificial intelligence.

In this circumstance, the device (or AI, or interface) plays the role of the subject or the object. For the purpose of this method, the human plays the role of the object or 'other' while the device is the subject. As a reminder, the subject offers, expresses, or performs empathy towards the object, or the 'other' which is experiencing some plight (Blankenship, 2019). While it is thought-provoking to consider human's empathetic relationship to machines, for example in the case of feeling empathy toward HAL, this methodology considers how interfaces are designed to perform empathy for humans, as a tool of usability and even likability.

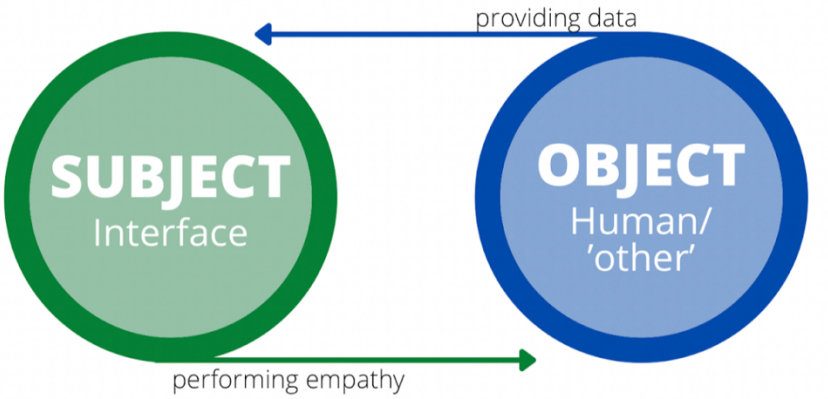

Figure 1. Visualization of an Empathetic Situation with Two Agents

Arguably, designers aim to create interfaces that are well-liked by their users and empathy is part of that effort. I term empathy in this vein "one-directional" because it is not occurring simultaneously between the subject and object. Performed empathy is intended to move from the subject to the object, and the object is meant to provide data to inform how that empathy should be informed.

As the literature review presented, much of empathy in interface design as it stands today relies on the research phases of design. Phases, where user research and data gathering occur, may be early on when the end-user is still uncertain, or later in the testing phase after a prototype is available for use.

Figure 2. Visualization of Design Thinking

Note. This is an image that I created based on the Hasso Plattner Institute of Design model.

In the five-stage design thinking model, popularized in part by the Hasso Plattner Institute of Design of Stanford, the first step is to empathize. Empathizing is often described as getting to know the end-user or seeing "the world from your user's perspectives." In order to do this, to collect the data on the user, designers are instructed to "observe and engage them." Observation may include tactics like qualitative or ethnographic research studies, where designers and researchers take time to learn more about their ideal end-users' wants, needs, desires, and most importantly, the problems they have that could be solved with the in-process interface (Moore & Arar, 2019). Indi Young's *Practical Empathy* builds on this idea by employing the act of listening. "Empathy is built by dropping into a certain mindset when the opportunity arises to gather knowledge," she writes. "Developing empathy is straightforward." It takes certain listening skills to get past the layer of explanations, preferences, and opinions to get at the intention and the why (Young, 2015).

In my own experience, I ask as frequently as possible to sit in and watch users interact with the app I work on. This means that gathering data on our end-user occurs primarily in the later testing phase. The researcher will design a study to gather specific types of data through a question-and-answer format. The researcher will then take this

data and interpret it into meaningful information. Designers utilize this information to alter or change the experience to work better for the end-users, or effectively, make the product more empathetic to the users' needs.

Defining Empathy

We have established the complexities of HCI, UX, and conversational AI, and how the overlaps in their respective literature can shed light on existing knowledge gaps. Conversational AI has also been named as the key focus for this project because of my personal proclivity for it and its applicability to rhetorical terms. Empathy between device and human has been introduced and it has been determined that interface plays the role of performing empathy as the subject while the human is the object or 'other' which provides data to construct perceivable empathy. The literature review will dive into how empathy is defined across disciplines, and the tenets section will elaborate on how the array of definitions are synthesized to provide a nuanced, working guideline for what is required to create or simulate empathy from a rhetorical standpoint.

II. RESEARCH QUESTIONS

What I gather from the reviewed literature is that the way the world of technology defines and utilizes empathy is lacking. I am searching for more direction and specifically more exploration into how empathy is designed. In both instructive and discursive resources on empathy in HCI, there is very little examination of how empathy works in a digital medium, how designers can employ it, and why it is important. There does not yet appear to be a framework or set of guidelines that designers or engineers are encouraged to work from. Definitions of empathy are largely scattered and borrow from a variety of fields outside of technology without, often, addressing why the particular empathy definition is valid in application. The questions I am left with for this body of work are, how are HCI generally and CAI specifically defining empathy? How can those definitions of empathy be implemented by designers? And how can rhetoric add to the conversation of empathy in CAI?

III. LITERATURE REVIEW

The three broad topics in this research, HCI, empathy, and rhetoric, all have their own vast and varied works of literature. The relevant conversations in both empathy and rhetoric are particularly difficult to summarize because of their shared chimeric and slippery natures. Culture, time, perspective, all influence empathy and rhetoric tremendously. This review is an effort at capturing the loudest and at times most common discourses in these three disciplines separately and naming where they intersect. It is what it aims to be, a review, not a weighty tome, which it certainly could be.

History of Empathy

Before diving into empathy rhetoric, here is a cursory review of how empathy is discussed in a larger sense. According to the *Chambers Dictionary of Etymology*, empathy as a meaningful word in the English language can be traced back to 1903. According to the Google Ngram viewer which tracks word usage in literature, the use of empathy in searchable archived publications stagnated until the 1940s. Since then, it has experienced a massive upward trend in use.

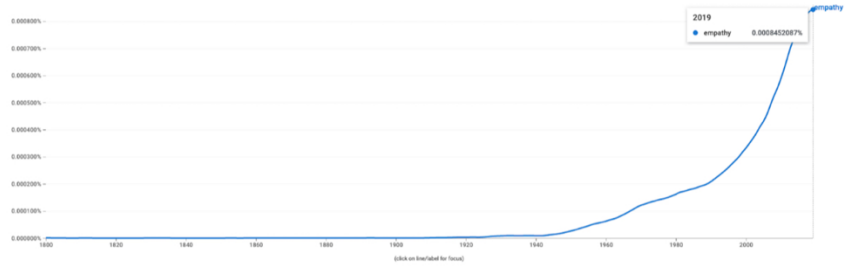

Figure 3. Google Ngram Viewer of Empathy

Note. Displays the delta of the use of "empathy" in works from 1800 to 2019 hosted on Google Books. (Google Books Ngram Viewer – Google Product, n.d.)

Empathy, as a concept and outside the English language, appears to have been introduced by German philosopher Theodor Lipps who theorized on "aesthetic empathy" or "that art appreciation depends on the viewer's ability to project his personality into the object" (Chambers Dictionary of Etymology, 2021). According to Susan Lanzoni's *Empathy: A History*, empathy belonged to the "imagination of writers, art psychologists, and dance critiques" by the late 1920s. During this time, empathy was more defined by "the lines of paintings or the shape of an object than with persons." Empathy does appear in psychology work during this time: Carl Jung's "Psychological Types" touch on empathy as do other personality type scholars. But the topic gained more popularity in the late 1940s and into the 1950s when it became an area of interest in social work and psychotherapy (Lanzoni, 2018). Again, according to Lanzoni, founder of talk therapy Carl Rogers published work on empathy and "active listening" in 1954, just after students at Cornell participated in a study designed by psychologist Rosalind Dymond. These are a mere few of the many experiments, studies, and books that contribute to that sharp upward trend of empathy word use.

Work during this time began the process of refining and dividing empathy into specific areas. Robert Hogan's 1969 article was part of the discussion that defined cognitive empathy, which is understood as "the intellectual or imaginative apprehension of another's condition or state of mind" (Hogan,1969). A more "emotional" branch that may be "referred to as affective empathy," emotional empathy or emotional convergence explains the phenomenon when the subject "matches" the object's emotional status, "beyond a simple matching of affect" (Davis, 1994). The third part of this discussion

includes the motivation of empathy. Martin Hoffman suggests that:

An individual interprets the meaning of information transmitted by others and anticipates the justification and perception of this information. The motivation component of empathy is sufficient to elicit responses beneficial to others, producing empathy with the feelings of others when misfortune falls upon someone else, not oneself. The object of such conduct is to help others (Hoffman, 1984).

"An understanding of empathy can thus be broken down into three constituent components, namely, perception, emotion, and motivation" write Archer and Finger. The "broad agreement" of these three categories can be summed up visually in a graph adopted and adjusted for the scope of this work from Joris Janssen.

Table 1. Empathy Categories

Component	Related Concepts	Measurement
Cognitive empathy	Theory of mind, Mentalizing, Empathetic accuracy	Classification of facial, speech, posture, or physiological signals to emotion categories
Emotional empathy	Mimicry, Motor empathy, Emotion matching, Imitation	Synchronization analysis between expressions of two or more individuals
Empathetic responding (Motivation)	Sympathy, Personal distress	Detection of specific nonverbal behavior or thresholding emotional convergence indices

Empathy in Fields Outside Rhetoric

This brief, early history introduces art and aesthetic's use of empathy which centers closely on the German word *Einfühlung* or "the ability to feel into" and the use of

objects as part of the empathy equation. "'Einfühlung' described how the spectator felt-into'" or "extended the self into the swirling lines of a design, into a mountain rising upward toward the skies, or into the curving line of an archway" (Lanzoni, 2018). Empathy has continued to be a major topic in psychology and psychotherapy. "Empathy is a central concept in social psychology as well as psychoanalytic psychiatry," writes Robert Michels, "It refers to a way of knowing about the inner experience of the other, knowing without seeing or hearing or being told (Michels, 2021). Empathy has received recent popularity from the famed speaker, writer, professor, Brenė Brown. Brown, whose academic roots are in social work, writes "I believe that what we regret most are our failures of courage, whether it's the courage to be kinder, to show up, to say how we feel, to set boundaries, to be good to ourselves. For that reason, regret can be the birthplace of empathy" (Brown, 2017). Brown is not alone in the popular press category of empathy work, but her video explaining empathy is the number one search result for the term "empathy" on Youtube and boasts 17 million views (2013). Personally, this video was my intro to defining empathy years ago when I did my training to work in Apple retail. My husband also uses it on a weekly basis to teach empathy to his psychotherapy clients.

Outside of psychotherapy, and as the NGram shows, "the concept of empathy has received an enormous amount of attention in the past few decades, appearing in the popular press, political campaigns, and in the study of a wide range of topics" (Coplan, 2011). An example of empathy for broader audiences is the book *The Empathy Exams*. This collection of essays is written for a general audience and became a New York Times bestseller in 2014 (Jamison, 2014). *Empathy Diaries* by MIT professor Sherry Turkle, published in 2021, also garnered wide acclaim and received a glowing review from the

New York Times (Garner, 2021).

Pro-empathy work has some criticisms against it. Psychology professor Paul Bloom released the book *Against Empathy* in 2016, telling New York Times reporter Simon Baron-Cohen he is on an "anti-empathy crusade." Bloom views empathy as an anti-social force that "doesn't reflect the normal functioning of the human mind" (Baron-Cohen, 2016). Apart from responses to this book in the form of opinion pieces and blog articles, the discussion of empathy as an anti-social threat does not appear to have continued, at least in forums that are open and accessible to outside viewers.

An essay in Jamison's *Empathy Exams* touches on an area that frequently conducts empathy research is medicine. In her first chapter, also called "The Empathy Exams," Jamison plays a medical actor whose job is to be part of a test for medical students. In addition to giving them data that they can extrapolate a diagnosis from, she is meant to act as a practice subject for their bedside manner and the empathy they extend toward their patients (Jamison, 2014). In a 2017 article from the *Journal of Patient Experience*, the authors define empathy as, "play[ing] a critical interpersonal and societal role, enabling sharing of experiences, needs, and desires between individuals and providing an emotional bridge that promotes prosocial behavior." The study notes that physicians' ability and performance of empathy declines during medical training. However, "without targeted interventions, uncompassionate care and treatment devoid of empathy, results in patients who are dissatisfied." This creates negative outcomes because patients are then "much less likely to follow through with treatment recommendations, resulting in poorer health outcomes and damaged trust in health providers" (Riess, 2017). Another more recent article shows similar findings, claiming,

“It has been proven that health professionals with high levels of empathy operate more efficiently as to the fulfillment of their role in eliciting therapeutic change” (Moudatsou et al., 2020).

My experience examining empathy in the medical field found that its benefits were largely uncontested. However, there were criticisms that its execution is often poor and ambiguous. In a Lancet article titled, “Examining Empathy,” the authors state that, “empathy has become a hackneyed term in medicine.” They elaborate by saying that “the untidy complexity of empathy can be frustrating to physicians and educators” (Jurecic & Marchalik, 2015). The authors of this article bemoan a theme I have noticed across disciplines that work with empathy: the definitions of empathy are brief and feel cursory, and how empathy can be performed, felt, utilized, is often unanswered. The Lancet article builds on this quandary with questions of their own, “is it always beneficial for doctors to feel and display empathy? What happens when doctors and patients have different expectations about how and when empathy is expressed?” (Jurecic & Marchalik, 2015). While empathy certainly does not belong to any one discipline or field, a more universal understanding could be helpful to efficiently reap the benefits of encouraging it. “Further confusing things is the fact that researchers approach the examination of empathy with differing, often incommensurable approaches,” writes Amy Coplan whose work will be explored further in the empathy rhetoric section. For the definitions that do exist, there is much diversity, which bears some benefits, more nuance, more potential use cases, but also some concerns. The approaches can be “incommensurable” (Coplan, 2011).

Empathy Rhetoric

This brief overview is to say, empathy is not beholden to rhetoric, or vice versa,

but rhetoric incorporates many elements of these other disciplines' use of it. In the words of Lynch, "Empathy is thus not just a particular brand or stripe of rhetoric" (Lynch, 1998). Rhetoric seems to recognize that empathy has no set definition, and yet still provides methods by which to analyze it. "Empathy is a complicated subject with definitions that vary by field," writes Eric Leake (2016). Most works of rhetorical empathy pull heavily from philosophy, psychology, sociology, to only name a few disciplines. *Understanding Empathy: Philosophical and Psychological Perspectives* by Amy Coplan, informs rhetorical empathy work, such as the quoted Leake piece; however, it builds from theories of empathy that originated from philosophy, psychology, and neuroscience. Coplan's goal is to, "narrow [the] conceptualization of empathy [as] informed by recent psychological and neuroscientific research. Coplan's proposed interpretation, names empathy as "a complex imaginative process in which an observer simulates another person's situated psychological states while maintaining clear self-other differentiation" (Coplan, 2011). For my research especially, the use of the word, "simulates" is intriguing since arguably, interfaces will be simulating interacting with empathy, not truly experiencing it.

Nathaniel Teich draws on Carl Rogers' "active listening" and the theory that has become Rogerian Empathy in *Rogerian Perspectives: Collaborative rhetoric for oral and written communication*. This book examines Rogerian Empathy rhetorically and distinguishes it from other, frequently evoked concepts in empathy rhetoric like identification. "The development of Rogers' ideas about empathy," writes Teich, "is nearly inseparable from the evolution of his client-centered therapy and the articulation of the three facilitative attitudes that he insisted therapists must hold to provide the

psychological conditions for growth and wellness" (Teich, 1996). The three attitudes are, congruence or genuineness, caring and prizing, and the therapist's empathetic understanding. These attitudes build what is now known as client-centered therapy, or the "ability to see completely through the client's eyes, to adopt his frame of reference" (Teich 1996).

Another key part of Rogerian Empathy is reflection, specifically in dialogue. Teich touches on this, and a quality he refers to as, the "believing game" in The *Rhetoric of Empathy: Ethical Foundations of Dialogical Communication*. The "believing game" is a way of employing the three attitudes in dialogue, and consciously combatting the type of argumentation that is meant to "defeat others" as well as utilizing "active listening" or the "say-back method" to affirm, and non-judgmentally understand others." The "say-back method" asks the receiver of a dialogue that could or should elicit empathy (in this specific case, the therapist) to repeat key phrases from the speaker's account. This theory, which Teich aptly mentions is "often parodied in popular culture," allows the receiver to briefly take the speaker's perspective, or "feel into" their experience (Teich, 1992). Rogers posits, "It would simply mean that before presenting your own point of view, it would be necessary for you to really achieve the other speaker's frame of reference—to understand his thoughts and feelings so well that you could summarize them for him" (Rogers, 1952). The Rogerian method can also mean using words and phrases that reflect on the receiver, without reciting back the exact same phrase. Zimmer and Alexander refer to this as "self-reproducing" language. They provide examples like, "You are welcome just as you are" and "Your feelings and views are being heard" (Zimmer & Alexander, 1996). I think it is important to note here that I am not looking to make interface or

conversational AI, analogous to a therapist. However, there are AI-powered tools that can act as mental health support, like Woebot, for example (Relational Agent for Mental Health | Woebot Health, 2021). There is an intriguing echo in the three relationship models that show up in rhetoric, therapy, and interface at play here. In rhetoric, we have the speaker or orator and audience, in therapy the therapist and the client or patient, and with interface, we have the technology or designers and the end-user. There are also similar phrases in each, human-centered, client-centered, and user-centered. So, while I am not, in this thesis, positioning interface as a stand-in for therapy, I do think the echoed concepts across the three disciplines are useful for my intended work and worth highlighting upfront.

Teich writes that “Rogers' definitions of empathy, differentiating it from identification, distinguish themselves from Kennth Burke's (1969) ideas of identification in the rhetorical process of persuasion” (Teich, 1996). Burke writes on identification, not in the context of empathy, but as a rhetorical concept however, the work is frequently cited in empathy rhetoric, as seen in Teich and the next reviews of Blankenship and Lynch’s work. Burke redefined the purpose of rhetoric, he moved it closer in a way, to empathy. He writes, "You persuade a man only insofar as you can talk his language by speech, gesture, tonality, order, image, attitude, idea, identifying your ways with his.” Burke writes that identification makes two parties consubstantial, or of the same “common spirit.” He continues that identification may, “identify as a titular or ancestral term, the “first” to which all other terms could be reduced and from which they could then be derived or generated, as from a common spirit.” Burke’s ‘identification’ is not solely about sameness, it equally addresses division. “Identification is compensatory to

division." He writes, "If men were wholly and truly of one substance, absolute communication would be of man's very essence. It would not be an ideal, as it now is, partly embodied in material conditions and partly frustrated by these same conditions; rather, it would be as natural, spontaneous, and total as with those ideal prototypes of communication, the theologian's angels, or 'messengers'" (Burke, 1969) From that ideal, or from the reality of how far we are from that ideal, comes a necessity to identify and focus on the difference so that we can create consubstantiation.

Lisa Blankenship builds on this theory while acknowledging the impact of Rogerian rhetoric and empathy. She also notes that Rogers' theories do not account for privilege. Criticism of Rogers' work, according to Blankenship, included asking "women and those in marginalized subject positions to set their bodies and experiences aside to objectively summarize the arguments of others. Burke's identification allows for "cooperation, not persuasion" to be the "primary focus of rhetoric and listening and empathy." Blankenship also outlines her "four characteristics of rhetorical empath" which include:

"Yielding to an Other by sharing and listening to personal stories

Considering motives behind speech acts and action

Engaging in reflection and self-critique

Addressing difference, power, and embodiment"

Blankenship forms her definition of rhetorical empathy from these tenets and the idea that "Rhetorical empathy functions as an inventional topos and a rhetorical strategy, a conscious choice to connect with an Other, and also as an unconscious, often emotional, response to the experience of others" (Blankenship, 2019).

Lynch situates rhetorical empathy within its larger history. Claiming that, "Empathy used to be at the center, at the heart, of rhetorical studies," and that it can be "rhetorically productive not in spite of but because of the dangers to which it is prone." Lynch defines empathy as, an "attitude and a practice: it attunes our minds to the needs of others; it permits people who are arguing to discover, not just premises, but premises that work." This rhetorical use of empathy gives it a function. By this assertion, empathy can be a tool for solution-finding in concert with an 'other.' Lynch also expresses concerns for empathy rhetoric, similar to those expressed by Blankenship regarding Rogerian empathy. Those concerns center on "speaking in someone else's voice, its potential to further oppress marginalized people, and the potential "dialogic" and "tense" relationship it could create between speaker and audience (Lynch, 1998).

The table below organizes the key definitions of empathy that are discussed in the literature review and will become part of the methodology. Examining a variety of definitions helps to build a more nuanced and holistic definition for empathy that can work in other fields, including of course HCI and its respective subfields. The column labeled, "Empathy for the Audience" displays how the person receiving empathy from, "the other," may view the experience. The goal of analyzing the varied definitions in concert is not to become overwhelmed by the potential "incommensurable" qualities that empathy ambiguities can elicit, but rather to create a robust framework that can be applicable across human-centered disciplines.

Table 2. Empathy Rhetoric Concepts

Author	Empathy Definition	Empathy for the Audience
Amy Coplan	"Conceptualization of empathy as a complex imaginative process in which an observer simulates another person's situated psychological states [both cognitive and affective] while maintaining clear self-other differentiation."	Simulation is an important element in this definition. It implies that empathy may not always be biologically acting in a body. It could be performative on a surface level. It can be an "imaginative process" that occurs in two, separate agents who do not become or transform into one another. The 'other's' perceptions are valid (Coplan, 2011).
Lisa Blankenship	Empathy alone: "Empathy has signified an immersion of an Other's experience through verbal and visual artistic expression." Allows for "topoi of empathy in terms of how the subject positions themself in relation to the object." Rhetorical empathy: • "Yielding to an Other by sharing and listening to personal stories • Considering motives behind speech acts and action • Engaging in reflection and self-critique • Addressing difference, power,	Rhetorical empathy situates the agents by "yielding" to the 'other' through storytelling, the performance of self-awareness, and awareness of possible privilege or disparate qualities (Blankenship, 2019).

	and embodiment” • Signified immersion asks for “the other’s” experience to be expressed visually or artistically and takes into account the relationship between the other and the empathy receiver.	
Dennis A. Lynch	“[an] attitude and a practice: it attunes our minds to the needs of others; it permits people who are arguing to discover, not just premises, but premises that work.”	Empathy can be a tool for solution-finding in concert with an ‘other. Similar to Blankenship, there is acknowledgement that attempting to perceive an ‘other’s’ reality can be potentially “dialogic” and create a “tense” relationship. Lynch suggests an awareness of the limits and proximities of the agents of empathy.
Nathaniel Teich in conversation with Carl	Rogers and Kenneth Burke “active listening” and the “say-back” method	Acknowledgement of differences so consubstantiation can be created (or strived for). Repeating or engaging in reflective language to create a sense of alignment and to “feel into” the ‘other’s’ experience.

These definitions of empathy are the foundation for the tenets which will inform the empathy lens that my methodology requires. The intention is that these tenets address different key elements that empathy rhetoric has provided substantial analysis for already and highlight what is potentially lacking in the interface literature research thus far. The

tenets will be discussed further in the methodology.

Interface Design

I have been gathering resources on empathy in user experience for the past two-and-a-half years. As mentioned, there is more work on HCI since conversational AIs are relatively newer. The history of HCI seemingly dates to 1943 with the world's first electronic numerical integrator and computer "ENIAC" (Greenberg, 2018). Whereas the earliest VUI, in a form relatively close to what we know them to be now, is attributed to 1984 (Oberoi, 2020). Truly for user experience, academic research is still fairly limited -- an assertion that was confirmed by speaking to UX designers in person. The popular publishers that produce books that could fall into the category of textbooks include, A Book Apart, Rosenfeld, Interaction Foundation Design Organization (an online resource), and Springer. The latter defines itself as, "a leading global scientific, technical and medical portfolio, providing researchers in academia, scientific institutions and corporate R&D departments with quality content through innovative information, products and services" (About Springer, 2019). Academic research certainly exists for user experience and its umbrella discipline of (HCI), but this research becomes limited when focusing on interface elements, especially for conversation design. It becomes even more limited when it comes to empathy. Two valuable works I found include "A three-component framework for empathic technologies to augment human interaction" by Joris Janssen published in 2012, and "Walking in Another's Virtual Shoes: Do 360-Degree Video Stories Generate Empathy in Viewers?" by Dan Archer and Katharina Finger published in 2018. Both offer solid definitions of empathy that delve into where they came from and how they are meant to be utilized. The Janssen article examines empathy multi-

modally in several devices while the Archer and Finger is focused on virtual reality. I was unable to find an equivalent that addressed voice user interface solely.

When I struggled to find many peer-reviewed, academic resources on empathy in interface, I started asking the experts. I spoke with Dr. Kiran Mascarenhas, who formerly worked on Amazon's VUI tool Alexa and currently works on Facebook voice interface projects. We connected over Twitter in October of 2020 after I published a tweet pleading for any information on empathy in conversation design. She shared as much as she could about her two very proprietary positions but had nothing to offer in the ways of empathy frameworks or key pieces of research on the topic. I spoke with Shymala Prayaga, the founder of a professional school for conversation designers and current conversational AI designer at Ford Motor Company. She shared her book manuscript on writing for conversation agents and specifically a worksheet she was developing to design for voice with empathy in mind. It was an interesting discussion, but I did not learn any specifics of how designers can create empathy through writing, tone, or any other mechanism besides essentially, knowing the end-user. They both acknowledged that there was a need for empathy in interface design, but neither provided any reference material nor offered new information to me based on their own research. All this to say, I have diligently searched for academic works to explore and potentially understand my theories and have come up short. I don't mean to assert that it absolutely does not exist, but in my exhaustive efforts, I could find very few scholarly sources that define empathy in interface and describe how to utilize it in more than a sentence or two. Furthermore, if industry experts like these two, both of whom have rigorous academic backgrounds (Kiran has an English PhD and was formerly a professor) could not name scholarly

resources, the work that may exist is not readily available or well-circulated. I could include hundreds of blog posts, medium articles, and Twitter posts on empathy in interface, which I do condone as relevant work because the living, breathing world of UX exists from and of the internet and user-generated content. However, for this thesis, I present the types of literature that echo what can be found for the respective fields. Some are more academic in nature, more from websites and user-generated content platforms.

Empathy in HCI

Googling the search term, "HCI" returns 38,600,000 results. Google Scholar returns 1,420,00 and Alkek has 123,469. While I could not possibly sort through all these references to search for their use of empathy, I did my due diligence to research broadly to gain a picture of what types of resources seem to be popular within the HCI, UX, and VUI communities.

Usability.gov, the federally run and self-described, "leading resource for user experience (UX) best practices and guidelines, serving practitioners and students in the government and private sectors" (About Us | Usability.gov) only references empathy as a useful tool in the often early, research phases of design. It also did not provide any applicable steps for how empathy may be implemented. Google, an industry leader in user experience design, offers a certification course hosted on Coursera.com to provide individuals with a "UX Certificate." The course aims to prepare people for their role as user experience designers. They define this as a job that "might include empathizing with users, defining their pain points, coming up with ideas for design solutions, creating wireframes, prototypes, and mockups, and testing designs to get feedback" (Coursera | Foundations of UX Design). In the section that addresses empathy, the most direct line on

the topic states, “You’ll conduct interviews with real users to build empathy maps and create personas. These hands-on activities will help you understand user perspectives and pain points” (Coursera | Empathize, Define, Ideate & Create). Empathy often arises as a part of design thinking and a way to solve the users’ perceived problems. “In order to truly understand the needs and wants of a user, it’s necessary to have empathy as a designer” is a frequent sentiment in discussions of empathy for interface. Empathy is introduced and its value is espoused, but the “how-to” is not addressed, nor is there any nod to how empathy is continued. Because designing thinking is a singular stage that does not continue, in most cases, to easily evolve with the users’ changing needs.

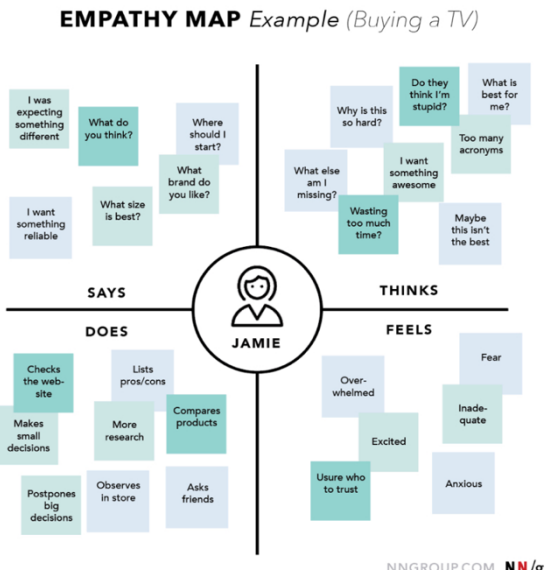

Figure 4. Example of an Empathy Map (Nielsen Norman Group, 2018)

Leah Buley writes in *The User Experience Team of One* published by Rosenfeld, a trusted publisher in the world of UX instruction, “Understanding and empathizing with the user’s perspective is a vital foundation for user experience design” (16). This is in a

section early in the book called, “Research, sociology, anthropology, and psychology.” As mentioned with the coming anecdote about Shymala Prayaga, empathy tends to exist solely in the “research” phases of interface design. From what I can glean from my research, this does not seem unhelpful; however, it also does not inform designers what actual actions they should be taking to create a more empathetic interface. The most recent (July 2021) Springer publication of articles presented at the *10th Annual Conference of Human-Computer Interaction* includes 17 uses of the word empathy. Most are from Zhang's (2021) work, focusing on empathy in the research steps of designing, “The design adopted the five-phases process of DT [design thinking], including empathy (data collection based on user research).” This implies to me that empathy exists solely in data collection from researching the user. The article does not go on to describe how the word empathy is defined nor how it is put into practice beyond data collection.

In a book on writing for interface from the same publisher called *Writing is Designing*, the authors Michael J. Metts and Andy Welfle work on writing for interfaces indicating, “Empathy is all about understanding the emotions and motivations another person is going through” (Metts, 2020). This is also in a chapter that explains user research and methods for understanding the end-user’s needs. I think it’s noteworthy that this is the entirety of their mention of empathy. They say what it is “all about” but nothing on how to put it into practice or even why that is an important step. *Practical Empathy* (Young, 2015) centers on employing empathy both in a design team, but also for the end-user. In its forward, Tom Gruber offers concrete advice on how to understand and practice an empathetic mindset toward other people involved in the conception, design, or implementation of a product” (Young, 2015). The book offers concrete advice

for understanding empathy, especially in groups or types of people who may greatly vary from ourselves. And, like the previously referenced works, it establishes empathy as a tool that exists in the research phases of design. Young writes that "developing empathy starts with listening, of course" (Young, 2015). She then moves on to illustrate "applying" empathy, which largely focuses on "listening." Listening is a step in the research phase like what Metts, Welfle, Shymala, and the Coursera course mention. We have a theme! Researching the user is a good first step. But again, I am still looking for what we can do with our research. I want some concrete steps. "Listening" is keen advice in most areas of life, I don't think I need a source to make that claim, but I keep coming back to one question, which is, "what do I do next?"

The Design of Everyday Things, by Donald A. Norman, is a foundational work for designers of all fields. A cursory Google search of "best books for user experience" seems to always return this book as the top recommendation. This book is a wealth of information and frequently a source I reach for; however, it does not use the word empathy one time. Another keystone work in user experience design written by Steve Krug called, *Don't Make Me Think* also offers any exploration of empathy and again, does not contain the word one time. One objection to this work may be that it was originally published in 2006 and again in 2013 which leaves almost a decade of time for technology to grow and change; however, according to Aaron Walter, the author of, *Designing for Emotion*, the study of empathy alongside developing consumer technology products has roots as far back as 1983. The founder of Intuit, Scott Cook, "believed the empathy resulting from [the practice of observing customers' pain points] would be the foundation upon which they could innovate" (Walter, 2021). Other than that reference, in

Designing for Emotion, empathy is not named again; however, the author does effectively back into empathy, by Burke's definition, in a section focused on identification. "If your teammates feel safe sharing personal information," writes Walter, "it's helpful to have open conversations about the identities each team member brings to their work to help you see the breadth of perspective and the gaps you may need to address" (Walter, 2021). This is from a chapter focused on inclusion.

Empathy in Conversational AI

The sources referenced largely focus on general UX, and of course, HCI, which shares tenets to conversational AI since conversational AI is a form of UX, but there is not always a complete overlap in ideas. Again, conversation design is, "a synthesis of several design disciplines, including voice user interface design, interaction design, visual design, motion design, audio design, and UX writing" (Conversation Design |, n.d.). This subsection of UX design shares much of the same instructional work but diverges in that it is a newer technology and therefore the literature is somewhat lacking. When I began researching these topics in 2019, work on chatbots and voice apps was difficult to find. Two-and-a-half years later, the options have expanded but in my searching so far, seem to be equally sparse when defining and describing how to implement empathy. Robert J. Moore and Raphael Arar, the authors of *Conversational UX Design, A Practitioner's Guide to the Natural Conversation Framework*, write that. "Many good designers recognize that creating a great user experience requires empathy with your prospective users [...] The better you can see the world from your user's perspectives, the better you can design an effective and engaging experience for them" (Arar, 2019). This holds a very similar sentiment to the HCI resources. It recognizes that empathy is important and

then situates it in the research phase with vague directions on how to use it. As with other elements of UX like GUI, there are blog articles and speculative pieces addressing empathy in chatbots, voice user interface, and conversation design. An article that exemplifies this from "Chatbots Magazine," a platform that publishes content largely written by and for chatbot designers. The article titled, "Programmed Perspective; Empathy > Emotion for Digital Assistants" suggests that currently conversational interfaces are not personal and that to solve this, they should be more empathetic. The author writes, "Empathy does not need to be emotional. Empathy requires that we put ourselves in the place of others to imagine how they feel, and to act appropriately." That is the sum total of explaining what definition of empathy is in use for the article, and the how is unsurprisingly also uninformative, relying mostly on a theory from French philosopher Jean-Paul Sartre (Gilburt, 2018). It's not an unhelpful article, but it simply demonstrates the issue that continually arises: empathy is discussed but in vague terms with little direction for action.

The Tenets

To thoughtfully examine the selected artifacts and analyze them through a rhetoric empathy lens, it is helpful to have a framework or set of guideposts by which the lens operates. The word or concept of a tenet is inspired by the work of linguist Paul Grice and his book *Studies in the Way Words.* Dr. Mascarenhas recommended this book to me in our first discussion, and I began to see it frequently referenced in LinkedIn communities for conversation designers. Grice's Conversational Maxims, also known as the Gricean Maxims arise from the pragmatics of natural language and are rooted in his Cooperative Principle. They set requirements for the relational behavior in a conversation

between the speaker and the listener. The Gricean maxims, in broad strokes, are:

1. Quantity - use the number of words necessary to clearly convey a message, no more or less
2. Quality - contributions and responses should be genuine
3. Relation - responses should be relevant and appropriate
4. Manner - remarks should not be ambiguous and should be orderly

Not only are these maxims useful in principle, but their use of the subject and object is analogous to demonstrating empathy structure. In conversation, human to human, or human to device, agent, bot, etc. The object is the human, and the subject or listener whose responses must adhere to the maxims is the interface (or for Grice, the partner conversationalist). In other words, the “us” and whatever “thing” we are interacting with have specific actions to perform and requirements to those actions (1991).

Amy Coplan proposes a “conceptualization of empathy as a complex imaginative process in which an observer simulates another person's situated psychological states [both cognitive and affective] while maintaining clear self-other differentiation.” This conceptualization, in my mind, is the most applicable to the scenario of human and non-human agents experiencing empathy. The word “simulates” is an important description because empathy and the actions related to performing it are ultimately not “real” but rather simulated when carried out by any form of AI. This can also be explored with cognitive empathy or the “classification of signals” that signify emotion and empathy. Thus, the first tenet asks that the way empathy is used is clearly defined and determined for whether it is genuine, human, even biological, or simulated and performed only.

Tenet 1. Define the experience. The manner and category in which empathy is felt, expressed, and performed is clearly stated.

Lisa Blankenship’s work in empathy rhetoric thoroughly discusses the importance of the ‘other’ in empathy. “Empathy,” she writes, “has a signified immersion of an Other’s experience through verbal and visual artistic expression.” Blankenship posits that immersing oneself in another’s experience requires yielding to their story and listening closely. This may mean “addressing difference, power, and embodiment.” Emotional empathy falls in line with this empathy concept as the “synchronization analysis between expressions of two or more individuals.” The second tenet asks for close listening and appreciation of the ‘other’s’ reality, without attempting to convince, fix, hurry, or judge their situation.

Tenet 2. Listen, hold space, recognize differences. An empathetic situation must include true listening and synchronization to the object, without urgency to change or fix

their circumstances.

Empathy can be a solution-finding tool, but in alignment with Dennis A. Lynch's work, it must be cooperative. Empathy "permits people who are arguing to discover, not just premises but premises that work." Empathy may be the precursor to solving issues or building trust, however, it cannot be employed solely with this gain in mind. Moving from a place of listening to a place of action requires dialog between the object and the subject. The third tenet highlights this by asking that when action is born from empathy, it comes from seeking resolution, "in concert with the other."

Tenet 3. Action from resonance. Empathy can lay the foundation for solving a problem but both agents must be aligned first.

Nathaniel Teich's discourses on Carl Rogers and Kenneth Burke shed light on how alignment may be achieved. "Consubstantiation" as Burke views it, may be worked toward after differences are acknowledged. Acknowledgment may look like repeating key phrases that the object offers, in the style of Rogers' "say-back" method. This allows the subject to "feel into" the 'other's' experience and let some of the perceived differences fall away. Empathetic responding, or the "detection of specific nonverbal behavior" is present here. Responses may take shape outside of speech acts, including the way interface is designed or the way bodies move to express understanding. The fourth tenet asks that empathy include elements of reflexive expression, either in speech, action, or image.

Tenet 4. Feel into and say back. Empathy asks that the subject demonstrates their commitment to finding convergences and moving forward by reflecting words, phrases, actions, or images.

IV. Methods

My goal is to create recommendations for a framework for empathy, informed by empathy rhetoric, for conversational AI designers that pulls from the work of HCI and UX that may not exist yet in conversation design. My methods center on analyzing carefully chosen artifacts through an empathy rhetoric lens. The lens is constructed by the four tenets of empathy rhetoric which are indicative of the substantiated nuanced definitions, functions, and utilizations of empathy. The tenets are both generously broad and keenly focused; generously broad with the intention of allowing for various interpretations and presentations of empathy without eschewing slight differences in language or use in different contexts. For example, a phrase like, "feeling into" is semantically concurrent to "feeling another's feelings." Contexts change from artifact to artifact which means that interpretations must too. One article from the DUXU compilation centers on a robot device while another article is more of a survey of empathy in various forms of design. With situations like these, care was taken to appreciate the boundaries of their contexts. An article as an artifact that speaks on empathy generally will require a slightly different analysis from an artifact that highlights one device.

The tenets are keenly focused in that they ask for a definition in no uncertain terms in addition to some intimation of all three categories of empathy. It would be specious to require the exact representation of the tenets down to the word given that the tenets come from a rhetorical foundation and the artifacts originate from technology-based disciplines. Therefore, it is efficacious and even fair to allow for some derivation and room for interpretation between the tenets and the artifacts. Again, they are

generously broad. However, the focus does arise with tenet one, where the ask is intentionally specific. I am seeking a definition of empathy, some indicator that even before the design process began, designers understood what they wanted by way of empathy. Another example of focus is with tenet two; "listening" may not apply to the artifact at hand. Listening may be interpreted differently to include a collection of data, recognizing user inputs, or actually physically sitting down with a user to listen to their story.

The process of analyzing the artifacts with the empathy rhetoric tenets consists of examining the artifacts, identifying possible overlaps, examining in greater detail the perceived overlaps, and recording the results. Examining the artifacts in all cases means reading them, as that is the nature of their capacities. In some cases, the selected artifact may be reviewing an app, device, or interface. In these circumstances, the examined content is still the article and what is written about the app, device, or interface, not the thing itself. It is salient that the analysis concentrates on the materials that inform conversational AI designers, and again, not the thing itself. Moreover, I analyzed the artifacts in an information silo. Some artifacts center on topics that have clout or are frequently mentioned in other literature. In part due to scope, I did not account for how the artifacts may or may not fit within a larger discussion. The artifacts are meant to stand on their own without any influence from outside parties.

While reading the artifacts, a coding system is employed to annotate which tenets may be identified in the text. If a definition of empathy is clearly presented, this without fail falls into the category of tenet one as it asks for a definition. However, it may not fully satisfy all the appeals of tenet one if it does not also examine an additional

element, or attempt to categorize how empathy is felt, expressed, and performed. With tenet one, both a definition of empathy is required, and a plan to connect it to the use and explanation of cognitive empathy, specifically.

Elements of the artifact that resonate with tenet two must indicate that there is a deliberate attempt to fully listen to the subject and make calculated responses that may not be immediate. This is also a representation of emotional empathy which imparts the quality of synchronization between two or more individual agents in the empathetic instance. There may be technological reservations to this, for example, GUI-based interfaces, swiftly shifting the visual experience based on a user's input is, at this time, typically a less accessible feature than with a conversational experience which is by nature synchronous. Thus, an attempt at this is stressed. It may not be reasonable to require meaningful pauses, pauses that do not become meaningless through overly long durations, depending on the technology.

Tenet three is where action or problem-solving from an empathetic space may occur, but only after alignment has been achieved. Alignment may be represented in many ways; a smattering includes making interfaces accessible to varying abilities and disabilities or altering the tone of text from a conversational AI to better meet the user's mood. There is flexibility in how alignment manifests, but there is no flexibility that alignment must occur before solutions are presented.

Tenet four arises from empathetic responding which is at the heart of Carl Rogers's "say-back" method. Like tenet one, this tenet is disclosed more obviously, in providing a reiteration or reflection of the user's input or interaction. This replicates the human practice of demonstrating and feeling into another's experience by repeating or

reflecting the performance of it. This may be multifarious, depending on the artifact itself or the description of how reflective responses are indicated in an app, device, or interface. In some cases, it may be impossible, again given current development limitations, for an interface to be immediately reflective of a user's experience. For this tenet, however, some effort of timely empathetic responding is a requirement. A device that has no "say-back" misses a major part of empathy. In reiteration, it is not effective to seek exact replication of these tenets in the artifacts, rather, unity in the major and defining components of empathy rhetoric as outlined by the tenets, and strong indications of the nuances.

While reading the artifacts, I actively notated and coded sentences or images that exhibited factors from the empathy rhetoric tenets. I then further and more closely examined the noted segments to determine whether they fit the requirements previously discussed. Was there a true and explicit definition of empathy or did the author simply use the word empathy? The latter may have been extracted only to realize upon further investigation that the former was not fulfilled. This process eliminated pieces that were close yet not fully applicable to the tenets. After visiting the areas of text or graphics in question and searching for content that did or did not work within the constraints of the tenets, I was able to distill and clarify the results. In the process of categorizing and coding the artifacts, I utilized the following table to organize my findings.

Table 3. Artifact Analysis

Artifact	Tenet 1	Tenet 2	Tenet 3	Tenet 4
DUXU International Conference Article A				
DUXU International Conference Article B				
Google Coursera UX/UI certification course				
Empathy's Role in Experience Design				
The Design and Implementation of XiaoIce, an Empathetic Social Chatbot				
Conversational UX Design, A Practitioner's Guide to the Natural Conversation Framework				
Emotional AI: Empathy in Chatbots				

The left column lists the name of each artifact, and the following columns leave space to mark whether they incorporate an empathy rhetoric tenet. While working, the cells of this table were filled with notes which eventually became yes, no, or partial. Yes or no results are self-explanatory, partial indicates that tenet may have been relevant if

one or two details were in better alignment. This completed table can be found in the results section.

My final goal with this methodology is to take the conclusions from both analyses and begin to identify tenets for a framework for conversation designers to reference that explains the why behind empathy in VUI and most importantly the how. I believe that by establishing tenets that ask for a more nuanced, complex, and aware use of empathy, I can deduce the important features that conversation designers should bear in mind while designing.

V. ARTIFACTS

The artifacts are a selection of works that include mention of empathy in relation to HCI, UX or conversational AI. The first goal with these selections is to choose work that is representative of the materials that are readily accessible to both new and seasoned interface designers alike. My second goal is that the materials are the most likely to inform the answers of the five research questions stated above. I did not select resources that intentionally do not mention empathy, which was a phenomenon I noticed in the literature review. It is also important that due to how swiftly shifting the field of HCI is, the works are as recent as possible; I aimed to choose work published no earlier than within the last decade.

HCI

The HCI artifacts represent work mostly in HCI and UX very generally, without a discrete focus on one singular type of technology. For HCI, the scholarly source that will be examined is the publication of the 2021 DUXU International Conference. DUXU is an annual UX conference that focuses on, “Usability, usefulness, and appeal are fundamental requirements for effective user experience design.” In addition to bringing UX professionals and academics together, the conference “solicits papers reporting results, covering a broad range of research and development activities” (DUXU | HCI International 2022, n.d.). The conferences’ papers, posters, and panels are published in a volume by Springer. Springer is a well-known academic publisher and the work presented at this conference and subsequently in the book present the recent research in HCI and UX that occurs in universities internationally.

I have also chosen the Google Coursera UX/UI certification course, another work

referenced in the literature review. This course offers what UX/UI bootcamps offer for $10,000+ for $39 per month. It currently boasts nearly 324,224 currently enrolled students (Google UX Design, n.d.). The final artifact is an article from UXMag.com, by website contributor Jen Briselli. The article is called, “Empathy’s Role in Experience Design,” and it takes a broader look at empathy in the design process.

Conversational AI

The scholarly conversational AI-specific resource I selected is an article called, “The Design and Implementation of XiaoIce, an Empathetic Social Chatbot.” The popular press works that I have chosen are a book also referenced in the literature review called *Conversational UX Design, A Practitioner's Guide to the Natural Conversation Framework*, and a Medium article from a group that publishes content mostly on chatbots called Kevit Technologies. The article I have selected is called “Emotional AI: Empathy in Chatbots.” I maintain these resources are indicative of the various types of work on HCI and conversational AI that are readily available today and that inform designers in their decisions to incorporate empathy into their products and projects.

VI. RESULTS

Each artifact is listed with the result of the analysis in the proceeding columns. A partial result indicates that it did not fully meet the criteria of the tenet. The most influential takeaway from these results is that conversational AI by its very nature contains the building blocks of empathy. Conversational AI allows for synchronous changes in responses to user input with far more flexibility of content and timing. Technology that represents empathy in non-conversational ways, for example, the robot in "Design of Form and Motion of a Robot Aimed to Provide Emotional Support for Pediatric Walking Rehabilitation" perhaps has the capabilities, but without designers making a point to understand and examine empathy more thoroughly, they cannot begin to utilize it. As made clear in the table, the conversational AI artifacts touched on a greater number of the tenets for empathy in technology design with more consistency than the HCI and UX-related artifacts.

Table 4. Artifact Analysis Results

Artifact	Tenet 1	Tenet 2	Tenet 3	Tenet 4
DUXU International Conference Article A	No	No	No	No
DUXU International Conference Article B	No	Partial	No	No
Google Coursera UX/UI certification course	Partial	Partial	Partial	Partial
Empathy's Role in Experience Design	Yes	Partial	Partial	Partial
The Design and Implementation of XiaoIce, an Empathetic Social Chatbot	Yes	No	Yes	Yes
Conversational UX Design, A Practitioner's Guide to the Natural Conversation Framework	Yes	No	Partial	Yes
Emotional AI: Empathy in Chatbots	Yes	Partial	Yes	Yes

VII. ANALYSIS

Artifact Analysis for HCI

2021 was the 10th year of DUXU International. This UX-focused conference is an affiliate conference with HCI International, whose 2021 conference volume was included in the literature review. DUXU focuses on presenting recent research and work on all aspects of the user's interaction with a product/service, how it is perceived, learned, and used, and addresses design knowledge, methods, and practices, with a focus on deeply human-centered processes. Usability, usefulness, and appeal are fundamental requirements for effective user experience design" (DUXU | HCI International 2022, n.d.). Individuals who contribute to this conference represent academia, research institutes, industry, and governmental agencies from 81 countries. DUXU and its affiliate HCI conference represent 1276 papers and 241 posters on topics surrounding HCI and UX. As one of the only academically centered conferences I found on these topics, I assert that the information it contributes to the discourses of HCI and UX is demonstrative of the disciplines overall.

This conference's thematic focus was "Design for Diversity, Well-being, and Social Development." If there was ever a place for empathy to enter the scene in a bold and meaningful way, I'd assume this would be it based on the title alone. Diversity, well-being, and social development all indicate to me that there is an emphasis on the human, or "soft" side of UX. In the 686-page book, there were five articles that incorporated empathy while only two examined empathy as part of the artificial intelligence or interface's design and behavior. The other five incorporate empathy into their studies by way of empathy mapping or similar research methods, for "A Study on the Application of

Innovative Strategies on Intelligent Mutual-Aid Delivery Services on College Campuses." This study examined the effects of an "intelligent mutual-aid service platform" that was designed to cover the "last mile" in parcel delivery routes to college campuses. This study incorporates an empathy map as part of the researchers' methodology. The empathy map is postulated to "better help discover users' concerns as to find better solutions."

As mentioned in the literature review, the empathy map is indicative of questions that the researchers believe should be answered to best serve their users. There is no exploration of what empathy means to them or even why the map is particularly helpful, other than it "may better help discover users' concerns" (Hong et al., 2021). This is interesting, although not relevant to the work of this thesis and the aim of examining empathy existing in and between the agents in the HCI relationship.

The second study that mentions empathy is "Design of Form and Motion of a Robot Aimed to Provide Emotional Support for Pediatric Walking Rehabilitation." This study examines the "emergence of robots that provide physiological and mental care, in the walking rehabilitation field." These robots are specifically designed to cheer on children as they engage in physical therapy. The study incorporates empathy in the "ideal flow of interaction" between the patient and the walking rehabilitation support robot. The third step in the flow is that the robot moves alongside him/her to show empathy and build a sense of unity, as well as to encourage to achieve the goal" (Alvarez et al., 2021). Here, empathy is part of the AI's requirements, however, it is not defined or explored beyond mentioning it in the explanation of the intended flow.

The second article that asks for empathy from an interface is "Persuasive

Design of a Mobile Application for Reducing Overcrowding in Saudi Hospital Emergency Departments." This study looks at the use of an app designed to mitigate overcrowding in emergency departments. The authors observe users interacting with an app that was developed using "persuasive design principles." The authors add that the success of the app was also influenced by "aspects related to the time-saving and empathy principles" of the design.

The study asserts that "persuasive design principles" are commonly used in different technology domains," that have proven to be effective in different types of technology. The authors incorporate empathy as a design principle that works with persuasive design principles. They refer to it as the "empathy principle" which was in no way explained in the article, instead simply named as a term. The results portion of this article named that the "empathy principle" along with the "time-saving principle" were two of the most influential design aspects" according to the users, however again, any further explication of what empathy meant to the designers or how it was incorporated into the interface's design was not included (Majrashi et al., 2021).

It is difficult to apply the tenets of empathy rhetoric to these two articles because they offer so little in the way of matter around empathy. The second article, "Persuasive Design of a Mobile Application for Reducing Overcrowding in Saudi Hospital Emergency Departments" does not include anything to define empathy beyond naming it as a design principle. The articles it cited as their sources of persuasive design also did not include empathy, so I am uncertain how their use of empathy was informed. Due to the lack of substance around empathy in this article, I cannot apply the empathy rhetoric lens and tenets because there is simply not enough to sustain analysis.

"Design of Form and Motion of a Robot Aimed to Provide Emotional Support for Pediatric Walking Rehabilitation," asks for empathy from the robot as part of the user journey. The robot is meant to move alongside the user, more specifically the child in physical therapy, which is asserted will "build a sense of unity" and therefore empathy. This does slightly touch on the second tenet of rhetorical empathy, or emotional empathy, in that it does include synchronization with the object. When the robot moves alongside the child, it is synchronizing movement. The surrounding context of this tenet that asks for differences to be recognized for the user as well as listening without a sense of urgency in solving the problem is not discussed, however, in the interest of being gracious to the authors, it could be implied. Implied in that it is not discussed if the robot moves at the same speed as the child or stops to wait if the child slows, falls, or blunders. Similarly, it is not mentioned whether or not the robot has functions beyond small physical movements, but it may perhaps alert professionals or adults if something has happened with the child. This last postulation is a stretch in relation to the bounds of the tenet and I do not assert that the second tenet truly applies holistically.

The fourth tenet which incorporates empathetic responding does hold up in the analysis of this robot's empathy. It does not appear that the robot has any voice or audio capabilities, however, it is reflecting the child's actions by following along while the child walks. Again, what is not discussed in this study is whether or not the robot stops when the child stops or if the robot mimics any other actions besides forwarding motion.

In summary, "Design, User Experience, and Usability: Design for Diversity, Well-being, and Social Development" is an example of the most recent and ostensibly most academic work in the field of user experience and human-computer interaction, and

this conference provided data in its title that it could have been an environment ripe for empathy discussions. Unfortunately, the articles that included empathy meaningfully did not provide definitions of empathy or any information that could truly be analyzed by the rhetoric empathy tenets nor inform recommendations for empathy in voice interface.

The second artifact is the Coursera Google UX Professional Certificate Course, specifically the second section of the course which is called, “Start the UX Design Process: Empathize, Define, and Ideate.” This course consists of a series of videos, worksheets, and projects intended to give students all the resources they need to thrive on a UX team. Coursera is a widely known method of obtaining high-quality professional certifications and training. This course maintains that it prepares its students ``for a career in the high-growth field of UX design, no experience or degree required.” It also claims that “75% of Google Career Certificate Graduates in the United States report an improvement in their career trajectory (e.g new job or career, promotion or raise) within 6 months of certificate completion.” This latter quote includes a footnote that this data was based on program graduate responses students located in the United States in 2021 (Google UX Design, n.d.). Suffice it to say, this course has a wide reach and seemingly provides adequate and updated education to individuals seeking a career in user experience.

This chapter of the course is centered on research, so empathy is intended to be a quality that belongs in the research phase of design. To borrow from the design thinking diagram (See Fig. 2), “empathize” is a very early step. Empathy is not set up to be part of the actual interface that the user interacts with, empathy is meant to be introduced as part of the design process with the expectation that it is reflected in the end-user's experience.

In the introductory section of this part of the course, Emily, a UX researcher from Google says in a video that "Over the next several videos, you'll learn how empathy is key to creating phenomenal experiences for our users. Every activity you will do will bring you closer to empathizing with your potential user." In a proceeding video Emily includes that "qualities of a good UX researcher include empathy, pragmatism, and collaboration." She defines empathy as, "the ability to understand someone else's feelings or thoughts in a situation."

The next section is called, "Learn more about UX research." It begins by introducing foundational research which it notes should, "always be done before you start designing." It is meant to happen "during the brainstorm stage (stage one) to help you empathize with users, understand their needs, and inspire new directions." The course explains that the common methods for foundational research include interviews, surveys, focus groups, competitive audits, field studies, and diaries studies. All of these with the exception of competitive audiences are focused on understanding the end-user and their needs. The explanation of interviews notes that this is "a research method used to collect in-depth information on people's opinions, thoughts, experiences, and feelings." This part of the certificate course has 31 sections made up of videos, readings, projects, quizzes, and a glossary. There are no more meaningful mentions of empathy included in the glossary which I felt confident would include the term and the definition that Emily shared, considering that empathy is in the chapter name.

Nonetheless, the use of empathy does provide more content for analysis than the first artifact. To begin, the course does include a definition of empathy, "the ability to understand someone else's feelings or thoughts in a situation." This definition does not

diverge wildly from many of the definitions explored in the literature review. For example, “the ability to feel into” which is the direct translation of *Enfühlung*, the German word for empathy. Essentially what the course is asking empathy to do is understand or feel into another’s feelings. Determining a definition fulfills the first tenet of rhetorical empathy but does not fully achieve cognitive empathy which corresponds to the first tenet. It falls short in that the definition does not clearly define or categorize how the thoughts or feelings may or can be conveyed, or in what situation. This also makes it difficult to reconcile the second tenet, especially in terms of synchronization. Something that I personally find potentially problematic about only collecting user data or feedback in the early steps of the design process is that it doesn’t allow for any temporal alignment. By that I mean that empathy is not occurring concurrently between subject and object unless the user data collected is incredibly accurate. The part of the second tenet that does apply is the ask to listen to the user. Incorporating user interviews is a direct way to incorporate listening and by the nature of the design process, space is provided before a solution is provided. In short, the second tenet is partially successful for this artifact.

Tenet three asks for action from resonance or knowing the user well and acting about alignment between subject and object. Conceivably, if the researchers were able to reach a wide enough pool of users in their research phase to collect varied and accurate data that included all edge cases, resonance could occur. Because the course only looks at empathy in the research phase, it’s difficult to understand how the collected data is intended to inform and materialize in the end product. Therefore, I deem tenet three partially accurate, in that the way the course uses empathy can create alignment but it’s unclear how they see that alignment can be put into action.

Similarly, tenet four implies some action; it asks that the subject feels into and returns something to convey empathy. Because this section does not delve into the how of employing what has been discovered in the process of "feeling into" or understanding "someone else's feelings or thoughts in a situation" there is no direction for reflecting back words, phrases, actions, or images.

Overall, the Google UX Design Professional Certificate chapter on "Empathize, Define, and Idea" is helpful in providing recommendations for empathy in voice interface in that it emphasizes the importance of listening to the user. It is also indicative of much of the work I found in researching this thesis. It begins to discuss empathy but omits key steps for putting theory into practice, and it does not approach empathy within the interface, strictly speaking, instead, it focuses on how designers and researchers can bring empathy into their process, which, in my opinion, holds some prosocial merit in and of itself.

The final artifact in the HCI and UX portion of the analysis is the article from the online platform UXMag.com. This website claims to host a community of over 578,000 individuals. The website's "About" page explains that the magazine "has been exploring, promoting, and discussing the realm of experience design for more than two decades." This website is largely composed of user-contributed content. "Writers and industry experts with something to say that elevates the conversation surrounding experience design" are welcome to provide articles, according to the "How to Contribute" page. This is a source that I found frequently shared and linked in professional networking sites like LinkedIn and Polywork. It also tends to return a highly ranked article in a Google search related to user experience design. The article that I selected from this website is

"Empathy's Role in Experience Design." This article was written by Jen Briselli and published in May of 2017. UXMag.com does have additional, more recent articles on empathy in user experience, however, this one claims to be the most foundational and broad, versus articles that touched on more specific topics. I wanted to give an article a chance that set up the opportunity to dive into the how and why of empathy.

"Empathy is nearing played-out-buzzword status: overused and overhyped" begins Briselli. She continues to make the claim that "empathy is a critical component of, but not the complete center of, the design universe." She believes that empathy is a key part of the design process, but not the only part and certainly not what all UX should revolve around. The detriment of rapidly rising in popularity, as seen in the N-gram in the literature review, is that designers tend to "grow tired of the word" and not understand what to really do with it.

Briselli defined empathy as, "feeling what someone else feels" and "walking in someone else's shoes." She also makes a point to make empathy distinct from sympathy, mentioning that empathy is more about "what it feels like to experience something from another's perspective." She believes that it is critical for designers to understand this distinction. "What are we to do with it?" she writes. To answer this she incorporates Indi Young, a source also mentioned in the literature review. Briselli quotes Young in saying, "cognitive empathy requires not a face, not preferences and demographics, but the underlying reasoning, reactions, and guiding principles." She continues by suggesting that "activities such as shadowing, empathy mapping, gamestorming, and journey mapping help us develop empathy." This echoes much of what was uncovered in the Google Coursera artifact. An emphasis on getting to know the user, but in this case, there

is a greater focus on processes that do tend to involve more assumptions rather than data collection. Empathy mapping, for example, is a practice rooted largely in making assumptions about what the end-user thinks, feels, needs, without necessarily connecting directly with them. From the confines of this article, it is unclear how Briselli suggests that activities like empathy or journey mapping should be done.

Briselli does push further than the other artifacts by suggesting that additional activities such as "generative making, collaging, and collaborative sketching help us to put that empathy into action for solution ideation." These are group-centered design activities that allow multiple individuals to contribute and work together. Collaborative sketching, for example, "is a process to generate ideas through a collective effort" (Briselli, 2020).

This artifact does have a definition of empathy that even provides some additional nuance in differentiating it from sympathy. However, the Indi Young quote does directly include a mention of cognitive empathy and the importance of understanding the "underlying reasoning, reactions, and guiding principles" of the user. It also touches on the importance of listening as per tenet two, in the mention of incorporating activities like shadowing. Although, it was unclear whether empathy and journey mapping should be informed by user research. Tenet three is not directly answered, but Briselli does often use terms like, "feeling and responding to another's emotional state" which does imply to me, as a reader, that alignment between the subject and object occurred. I do not see any use of tenet four, the question that empathy is manifested through echoing words, actions, or images. In fact, the answer to "What do we do with it?" did not appear to answer the question comprehensively (Briselli, 2020). The takeaway from this analysis that is useful

for informing the voice interface recommendations is that it is important to understand the user fully and that a cooperative process can perpetuate empathetic problem-solving in the design phases.

The commonality that all of these artifacts share is the heavy influence on empathy in the research phases of interface design and the lack of addressing how empathy can exist in the interface itself. An argument could certainly be made that these are two very separate topics that would exist in different sources. The issue that is identified, however, is that the transition from the research phase to the end-users' experiences is vague. It is abundantly clear from these artifacts that collecting user research is key, however, I have not found useful information or even anecdotes that communicate how the empathy that researchers have evidently cultivated can be communicated or demonstrated to the user. Other than the obvious broad stroke assertion that the data collected informs design decisions. That still does not consider the temporal quality of empathy, that empathy isn't stagnated and therefore the interface conceivable should not be either. In understanding the end-user, what I would hope would be abundantly clear is that users are individual people, and what works for one user does not inherently work for the next. In none of the literature included in my review is empathy defined or considered a generalized phenomenon. It is always identified as personal. This is the gap that has become abundantly clear to me. In an effort to learn comes generalizing, and to me and my understanding of empathy, especially as influenced by the rhetoric empathy tenets, empathy is not meant to be one size fits all.

Artifact Analysis for Conversational AI

"The Design and Implementation of XiaoIce, an Empathetic Social Chatbot" is

a study of XiaoIce which is quoted as “the most popular social chatbot in the world.” The authors note that it was designed as an “AI companion with an emotional connection to satisfy the human need for communication, affection, and social belonging.” The study aims to show how XiaoIce successfully “recognizes human feelings and states, understands user intent, and responds to user needs throughout long conversations.”

The study outlines the differences between IQ and EQ and notes empathy and social skills as key components to the latter. The authors define empathy as, “Empathy is the capability of understanding or feeling what another person is experiencing from within her frame of reference, i.e., the ability to place oneself in the other person’s position.” They go on to identify that “a social chatbot with empathy needs to have the ability to identify the user’s emotions from the conversation, detect how the emotions evolve over time and understand the user’s emotional needs.” They also elaborate on this to include that users’ varied backgrounds, interests, and needs all require different responses from the chatbot. What is socially acceptable to that specific user may change depending on these factors.

Within the chatbot's “Conversation Engine Layer,” is the “Empathetic Computing” segment which includes user understanding, social skills, and XiaoIce’s personality. In the simplest terms, the way this conversational AI responds empathetically is by interacting with the user “over a sequence of discrete dialogue turns.”

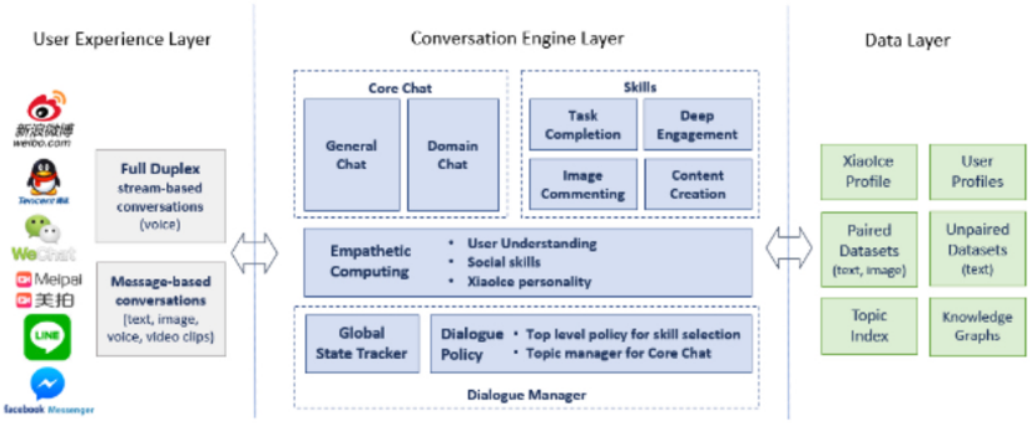

Figure 5. XiaoIce System Architecture (Zhou et al., 2020)

Each turn allows the conversational AI to observe how the user is using dialogue, which can then be reflected in the responses that XiaoIce returns. XiaoIce generates an "empathy vector" which "consists of a list of key-value pairs representing the user's intents, emotions, topics, opinions, and the user's persona." These support the conversational AI in matching the user's features, like their persona or the context of the situation.

This article is by far and away the most robust use of empathy I have encountered in my research. It clearly defines how the designer's empathy, "empathy is the capability of understanding or feeling what another person is experiencing from within her frame of reference." They also show how empathy can be expressed within the situational boundaries of conversational AI and humans, by outlining XiaoIce's reflection of language. This also ties into tenet four which is inspired in part by Carl Rogers' say-back method. XiaoIce reflects users' language and roots its responses in contextual awareness of the conversation.

Users have different backgrounds, varied personal interests, and unique needs. A social chatbot needs to have the ability to personalize the responses (i.e., interpersonal responses) that are emotionally appropriate, possibly encouraging and motivating, and fit the interests of the user [...] XiaoIce demonstrates sufficient EQ as it generates socially acceptable responses (e.g., having a sense of humor, comforting, etc.), and can determine whether to drive the conversation to a new topic when e.g., the conversation has stalled, or whether or not to be actively listening when the user herself is engaged in the conversation.

In addition to this empathetic response, XiaoIce can simulate emotional empathy by "listening" to the user and recognizing the differences both between itself and the user and among various users. This means that XiaoIce can lay the foundation of solving a problem with the user, in other words, achieve what tenet three asks for as well. The authors include an example of this with one specific user who chatted with XiaoIce after breaking up with her boyfriend. "Through a long conversation, XiaoIce has demonstrated human-like empathy and social skills, and eventually helped the user regain her confidence and move forward with a positive attitude" (Zhou et al., 2020).

There are a lot of takeaways from this article that are helpful in creating a framework for empathy in conversational AI. The impressive technical aspects aside, XiaoIce shows how interfaces can engage in the performativity of empathy, and that collecting data from users in real-time is possible and can be used to meet the user where they are at through language. User experiences that rely more heavily on graphical user interfaces do not have the same real-time flexibility to change with the user as a chat experience does. With chat or any kind of conversational experience, there is the

opportunity to adjust the dialogue to better fit the user with each turn. By the very nature of a GUI experience, there is not the same type of dynamic response. Still, I maintain it is valuable to have a clear understanding of how understanding the user can directly create a more empathetic user experience, beyond the obvious, surface-level requirements. The steps that a conversational AI can do in real-time to perform empathy are not necessarily impossible for other HCI situations, they would instead have a different means by which empathy is conveyed and a different timeline. Where conversational AI can be instant, GUI or other types of interface experiences tend to have elongated design cycles where research by humans is key to editing the end product to be more empathetic to the user.

When I began researching conversational design, the book that was recommended to me over and over by industry professionals was *Conversational UX Design, A Practitioner's Guide to the Natural Conversation Framework*. This book was previously referenced in the literature review. It was published by the Association for Computing Machinery in 2019. The book is divided into chapters that explore different elements of the designing, strategizing, researching, and writing that goes into creating a conversational agent. Echoing the conversational AI artifacts, the pages that reference empathy can be found in the "Conversational UX Design Process" chapter. The authors suggest that "many good designers recognize that creating a great user experience requires empathy with your prospective users." They then go on to define empathy as "developing an understanding not only of your users' needs but also of their meanings, motivations, as well as their behaviors." In order to do this, the authors suggest observing users in ethnographic fields studies or interacting with users in the context of the conversational system that the designer is hoping to build. The benefit of ethnographic

studies, they explain, is that it allows for interviewing, "in which you ask users open-ended questions and encourage them to talk." From there, the authors recommend creating user personas and ideating on the conversational agent itself.

One immediate strength of these resources is that this section is several pages and provides examples – like mentioning ethnography specifically – and how those examples can be helpful. Again, it would be beneficial to see more direct utilization of the data collected in the conversation itself, but suggestions such as making note of the users' specific language styles.

The clear definition of empathy satisfies tenet one in that it describes how empathy as a word is used and touches on the importance of user behaviors. It is still broad, but more specific than many of the previously cited definitions. The word "motivation" in this source's definition stands out and touches on tenet four which references empathetic responding and the nuance of understanding the user or object's motivations. Suggesting that researchers note the way users use language, conceivably in order to use the same type of language, is also akin to reflecting words as a demonstration of convergence, as tenet four dictates. Tenet three is nearly incorporated in that the authors do recommend aligning with users by "observ[ing] and engag[ing] them." Tenet two is addressed in neither the definition of empathy nor the exploration of it. Still, there are valuable takeaways for an empathy framework. The emphasis on ethnography and collecting true user stories versus created ones, and the importance of understanding user motivation.

The last VUI artifact is an article published on Medium.com by chatbot technology developer Kevit. A cursory glance at Google search results will display a

myriad of chat development companies. Kevit does not appear particularly special or unique other than their prolific library of articles on conversational design. “Emotional AI: Empathy in Chatbots” was published in 2019 by Pankti Dholakia. The author begins by positioning AI as capable of “understanding, interpreting, replicating and reacting to human emotions.” Dholakia defines empathy as, “the ability to understand and share the feelings of another. Empathy itself can be categorized into – cognitive empathy, emotional empathy, and compassionate (affective) empathy).” The author suggests that the sum of these three types of empathy come together to mean, “understanding the emotions and taking relevant actions to assist them.”

Dholakia asks “how can chatbots implement this humane trait in order to create a compassionate conversational environment for its users? How can these robotics be trained to imitate a human?” This is the first obvious incorporation of “why” questions in the artifact analysis and I think they both introduce valuable ideas. Dholakia, similarly to the XiaoIce article, looks toward the technology that enables the simulation of empathy for answers.

The answer to this question lies in the development and implementation of NLP (Natural Language Processing) models and Sentient Analytics that are implemented within a chatbot to make it far more emotionally equipped to respond to users especially when it detects negative.

Dholakia attributes the capabilities of NLP tools to creating empathy in a chat environment. These types of tools more specifically “read and understand” what has been said. Sentient analysis pulls key information to assign value or “entities” to. For example, it can identify, or guess at identifying how a user may be feeling based on the language or

"utterances" that the user provides. Then, broadly, the NLP can sort the information into positive or negative feelings. Dholakia included a helpful example of this. If a user was using a chatbot to locate a late package they might be expecting in the mail, these two different utterances convey vastly different emotional tones. A.) My package may have been lost in the mail; can you find out if it's still on the way? Versus, B.) My delivery is late for the third time.

It is not a sweeping assumption to make that most English-speaking individuals who used something akin to option A still have some curiosity and optimism for a positive outcome, whereas option B implies frustration as this instance has happened previously. NLP that has been trained to recognize these types of semantic intricacies will return a response that is designed to adequately meet the user where they are emotionally. To continue the example, based on this article's suggestion, an answer to the first option could remain light-hearted and may not even need many pleasantries, however, the second one should be something like, "That is quite disturbing, I understand your disappointment, let me look into this immediately."

There are a few elements of this article that work well with the empathy rhetoric tenets. Most obviously, this is the first popular press or user-generated article that I have read in preparation for this research that mentioned three different categories of empathy. The author names them cognitive, emotional, and compassionate empathy. The categories utilized in this work are cognitive, emotional, and empathetic responding. There is not an explanation of compassionate empathy in the article, however, ironically there is the description of empathetic responding (Dholakia, 2021b). The way Dholakia describes the function of NLP and sentient analytics to return empathetic responses

depending on the users' utterances is an example of empathetic responding. In that vein, this description of empathy answers the asks of tenet four, the chatbot, in a simulated manner, feel into and says back. It attempts through NLP to parse the users' feelings and say back. Not in a strictly literal sense of saying the exact same words, but in saying back a similar emotional tone to convey understanding. In doing so, and again much like the XiaoIce article states, the NLP must attempt to align with the user but categorizing the users' inputs into their emotional status, this is a form of the actions required in tenet three. It is difficult to know if tenet two is realized because this article is not examining dialogue flows or anything that could convey the timeliness of responses. However, based on the types of responses the author provided as examples, there are indications that the idea is that the chatbot first recognizes the issues, then attempts to solve them, which does effectively do what tenet two prescribes. Lastly, yes! The author does provide a clear definition of empathy that, as mentioned, even acknowledges different empathy categories. Considering the relative brevity of this article – less than 1,200 words – the definition was nuanced, lengthier than many others examined, and provided with some context.

In many ways, this article echoes the article on XiaoIce. It breaks down some of the technical aspects of simulating empathy on the backend of conversational AI. It is noteworthy to add that this article was very cursory in its explanation of these functions, and my summary simplified it even further. That said, it is relevant to see how empathy can be performed in real-time with user interactions. This article also introduces the sentient analysis which illuminates more specifically how NLP can provide emotionally accurate responses to users efficiently. It is likely difficult to know the success rate of

sentient analysis given that it is extremely dependent on how the algorithms are designed for each individual, separate platform. This article also evinces that there is a place for discussing and even acting upon a more nuanced definition of empathy that incorporates cognitive empathy, emotional empathy, and empathetic responding or "compassionate empathy." The recommendations for a framework for empathy in conversational AI that I extract are the benefits of exploring empathy as more than a single sentence definition and how it can interact with the user in a multitude of ways, in the types of response it provides, in the timing of responses.

VIII. DISCUSSION

The artifacts showed that the work on empathy in HCI and non-conversational AI UX met my initial suspicions of largely neglecting to include a definition and context about how empathy is meant to be used. Referring to Table 4, only one HCI artifact out of the three included a definition of empathy and none of them went deeper into the implications or nuances of empathy. This seems potentially problematic to me as a rhetorician and a designer because, without a baseline understanding of how something is intended to work, it is challenging to put ideas into action. Robotics engineers would not attempt to create a bipedal robot without closely studying the mechanics of walking. My analysis of these artifacts has led me to the same conclusion about empathy. Referencing empathy in passing as included in an app, device, or interface does not necessarily mean that the device is empathetic, at least not by the empathy rhetoric tenets.

This leads me to the somewhat obvious conclusion that my initial assumption that HCI would contribute applicable wisdom to the newer field of conversational AI was incorrect. It also provides an overlooked realization that conversational AI already contains the foundation for empathy in a much more agile form than many other types of UX. Conversational AI, by its very design, can adjust in the moment of interaction to respond to where the user is at emotionally. Empathetic responding is more accessible for conversational AI because the interactions occur in dialogic turns versus, for example, pre-designed, static GUI.

How is HCI generally and conversational AI specifically defining empathy? In short, very differently. As demonstrated by the artifacts, HCI does not define empathy particularly thoroughly, “the ability to understand someone else’s feelings or thoughts in

a situation," "feeling what someone else feels," and "walking in someone else's shoes" are a brief smattering of the definitions found in the HCI literature. These definitions are applicable in relation to the descriptions of empathy presented in the literature review and empathy rhetoric tenets but lacking and somewhat shallow. The artifacts for HCI did not go much further than this, apart from the "Emotional AI: Empathy in Chatbots" article. The conversational AI artifacts defined empathy as,

"The capability of understanding or feeling what another person is experiencing from within her frame of reference, i.e., the ability to place oneself in the other person's position." Also, "the ability to understand and share the feelings of another. Empathy itself can be categorized into – cognitive empathy, emotional empathy, and compassionate (affective) empathy)." And finally, "developing an understanding not only of your users' needs but also of their meanings, motivations, as well as their behaviors." The conversational AI artifacts continued to explore how empathy could go from listening to action; in essence, they defined empathy with execution in mind.

How can rhetoric add to the conversation of empathy in conversational AI? Repeating a statement that has been made before, the very nature of conversation allows for empathy to work. Perhaps this is a conspicuous outcome, however without dialogues, literature, and frameworks on empathy, it is unclear where empathy exists. However, it could be argued that by the very inherence of tenets influenced by rhetoric, there is a greater emphasis on conversation. Rhetoric is a discipline that celebrates the interlocutor, but I think that underestimates how broad rhetoric can be. Additionally, turning to an ontological reading of rhetoric, where "things" may exist as an interlocutor in the situation, opens the possibility of where rhetoric can exist, and how it can be a tool for

analysis. It makes it possible to see empathy rhetoric as something that can and does exist outside a conversation. Thus, I am intrigued that even with that in mind in the formulation of the empathy rhetoric tenets, and with the ability to apply their uses to non-conversational circumstances, the results show that conversational AI nearly automatically includes the ingredients for empathy. Rhetoric adds to the conversation of empathy in conversational AI by allowing a digital agent to belong in the object/subject equation with the same gravitas as a human agent. It provides a baseline for analysis, much like having a definition for empathy provides a baseline for design. Without the literature of empathy rhetoric, we would not have varieties and facets of empathy that also allow for empathy to work in a simulated context. Rhetoric, I think, makes empathy in conversational AI possible.

IX. RECOMMENDATIONS

Many of the recommendations that are informed by the artifact analysis are actions that are already underway in the process of designing empathetic conversational AI. I do not view these recommendations as an overhaul, so much as a step back. Before the work of writing and implementing conversational AI, intentionally working from an empathy framework may yield even more positive results.

The building blocks I offer for this framework include:

- Work from a clear definition of empathy that is multi-faceted and available for everyone on the design team and even the backend development teams. This was something that the XiaoIce and Kevit article both espoused. There are the beginnings of software-based mechanisms to perform empathy. First and foremost, discuss the definition and explore how or where the different categories of empathy may enrich the use of empathy.
- Listen closely to the users and the team members on the project. Collecting real, meaningful stories or ethnographies from actual users provides the data needed to customize the empathetic experience. Briselli's UXMag.com article touched on this, as did the Conversational UX Design book.
- Collecting data in real-time allows for each dialogue turn to be an opportunity for an empathetic response. XiaoIce shows how this can be a valuable aspect of empathy in the case studies included on the woman turning to XiaoIce to seek solace after a breakup.

I add the recommendation to state where empathy is meant to exist in a conversational AI. This can be done by asking and answering questions such as:

- Is the interface itself meant to provoke feelings of empathy from the user?
- Is the interface meant to perform empathy toward the user?
- Are the designers, researchers, engineers asked to be empathetic toward the user experience in the hope that will translate into an empathetic experience overall?

This recommendation comes from the lack of clarity I observed in many of the artifacts, for example, the DUXU articles. The articles note that empathy should be part of the experience, but they do not state how or where.

Empathy in the design and research process is a popular step as indicated by references in the literature review, the artifacts and the artifact analysis echo its importance. User studies are not a new phenomenon in the historical scope of focus groups or even socializing ideas. What is pivotal for enacting empathy not only by the designers but through the interface, are the building blocks mentioned above. These include steps and ask questions that I have not yet seen demonstrated in either related literature or professional practice. These directions aid in taking all that user data from the "empathize" phase and providing usable outcomes for the user.

X. CONCLUSION

During the two years I spent working on this thesis, my life has changed dramatically and the research and work around empathy in many forms of technology has too. When I was writing the thesis proposal, I was betting on a wild dream that I could make a career out of writing for artificial intelligence. To everyone's surprise, including my own, in the midst of this thesis, I started working for a major technology company as a conversational designer. I love that every day I use the same books that I referenced in this research to do my job.

The more I learn about empathy the more reticent and cautious I am to incorporate empathy in my own conversational AI. I do firmly stand behind empathy in technology, and my vision remains clear that I am keenly interested in not existing in a world where we are dodging concerns of murderous HAL-like AIs. However, I also recognize that our history coexisting with nearly sentient machines is incredibly brief. We don't know what we don't know, and sometimes this is the sentiment I hear the loudest. I do stand behind the importance of creating empathy frameworks for anything we wish to incorporate with empathy because I struggle to see any negative in understanding this graceful yet weighty essence of humanness. And by the same token, I wish to remain open and observant of humans' relationships with AI. That door has just been opened, it may be too soon to dictate what is right and what is wrong.

I chose to go to graduate school with the express interest in becoming a better humanities-based technologist. I know that I can make an impact, being a good human to design good HALs. I am a deeply feeling, empathetic, rhetorician thriving in tech, and in the words of Maya Angelou, "I've learned that people will forget what you said, people

will forget what you did, but people will never forget how you made them feel" (Dr. Maya Angelou Foundation, n.d.). So, for me, technology will always be there. It is not leaving our reality any time soon. While we learn and navigate our relationships with machines, I will pull from wisdom gained from learning and navigating relationships with people. The one certain thing I will take away from this work is that to do better as a designer and as a human, I must first "feel into."

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