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# Exploring Compassion through HCI

**Minha Lee**

**Lily Frank**

**Wijnand IJsselsteijn**

{M.Lee,L.E.Frank,W.A.IJsselsteijn}@tue.nl

Human-Technology Interaction

Philosophy and Ethics

Eindhoven University of Technology

Eindhoven, the Netherlands

## ABSTRACT

## CCS CONCEPTS

• **Human-centered computing** → **HCI theory, concepts and models; Empirical studies in HCI.**

## KEYWORDS

Compassion, well-being, moral philosophy, positive computing, chatbot

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## INTRODUCTION

Compassion as concept has a long history in moral philosophy [16, 17], and more recently in moral psychology [4, 11]. It is especially relevant to positive computing (technology for well-being), an emerging area in human-computer interaction [1]. Positive computing is concerned with various forms of technology for human flourishing. A goal of positive computing is to design technology for psychological well-being [1]. A way to bolster psychological well-being is through compassion towards oneself and others [23]. Technology can be helpful in this regard [1], specifically when people can show compassion towards a technological entity as a way to become more self-compassionate [9].

## COMPASSION IN PHILOSOPHY AND PSYCHOLOGY

Compassion has been championed as the basis of morality [17]. It is a morally relevant emotion or motivation [7] that spans Eastern, e.g. Mahayana Buddhism or Confucianism, and Western, e.g. Aristotelian ethics or German post-Kantianism, philosophical traditions.

Compassion in the Buddhist tradition is to tend to suffering of sentient beings; suffering is the common denominator of living creatures and to be compassionate is to be mindful of lessening others' and one's own suffering [18]. To alleviate oneself from suffering that comes with being alive can put one on the path towards enlightenment. This was the case since early Buddhist traditions (origins are traced to 500 B.C.). In comparison, Mahayana Buddhism emphasized one's connectedness to others' suffering, meaning that seeking enlightenment is to be in unity with living beings, above and beyond the goal of cessation of one's own suffering. Compassion is a part of the four divine abidings (brahmavihara) of Buddha's teaching: loving kindness (to practice unbounded, benevolent love), compassion (to be moved by suffering of living beings), sympathetic joy (to share others' happiness as one's own), and equanimity (to not be enslaved by fleeting emotions) [19].

Suffering that underlies compassion is a complex experience that cannot be easily labeled as positive or negative. Some can thrive from suffering while others may wish to distance themselves from it. Intrapersonally, one's relationship to suffering can fluctuate over time. By being one with others' suffering, compassion offers an ego-less perspective through shared suffering, and provides a moral orientation, i.e., the greater humanity is merely "myself once more" [17, p. 277], not based on rational knowledge, but from subconscious altruism towards all beings. From a different angle, to suffer is to cherish what it means to be human [14]. When operationalizing compassion in mental health endeavors, the ability to conceptualize and emotionally relate to suffering matters the most, and this relatability can nurture compassion [21].

Compassion is related to other emotions such as sympathy, empathy, grief, or pity [2, 13, 15]. Empathy can have a "dark" side. Suffering can cause empathic distress— a helpless, negative feeling

of vicariously experiencing others' suffering, rather than activating altruistic motivation underlying compassion [1, 13]. Physiological markers and facial expressiveness of compassion and empathy can be difficult to disambiguate [13]. Yet, brain imaging demonstrates more distinct differences, for neural mechanisms underlying empathy and compassion activate divergent pathways; when exposed to others' suffering, compassion training showed to enhance positive affect, counter negative affect, and decrease empathic distress, compared to empathy training that only activated negative affect and empathic distress [8]. Compassion can require a learning process, unlike empathic relatedness to others that comes more automatically, which can lead to distress. Thus, compassion has a distinct emotional profile that captures how we socially relate to others and oneself [5].

Self-compassion means to positively care for oneself even in times of difficulty [11, 23]. It helps individuals be resilient to negative psychological states like rumination or excessive self-criticism through three sub-components: *self-kindness*, *connectedness* to others as shared humanity, and *mindfulness* of one's emotions and attitudes [11]. Furthermore, self-compassion brings about well-being. A meta-analysis of self-compassion and well-being shows a strong relationship, with some sampled studies demonstrating causal effect [23]. Self-compassion thus drives one towards well-being when one kindly views personal failings as something that could happen to anyone else, without over-identifying with self-criticism through a balanced, mindful perspective. While self-compassion is intrinsic to compassion in general, what we are dealing with is compassion's hand in motivating self-care.

Much of current discussion on self-compassion has ancient roots. Aforementioned four divine abidings of Buddhism [19] are infused into three pillars of self-compassion [11]. Self-kindness is to demonstrate loving kindness to oneself and mindfulness relates to equanimity, as in, being aware of one's emotional and mental states without being attached to them. Connectedness to others is intrinsic to how Mahayana Buddhism envisions the fabric of sentient beings. The conceptual intermingling of varying traditions and disciplines evince some consistency, which is helpful in designing a compassion-focused positive computing system for mental health care.

### **SELF-COMPASSION CHATBOT**

The effects of caring for and being cared by technological agents has been researched on, e.g. robots used for education [20] or reciprocal-care robots for the elderly [10], yet research is sparse on specifically using compassion for mental health care with conversational agents. As one instantiation of positive computing technology, a chatbot named Vincent was deployed to increase self-compassion of its users [9]. Participants' pre- and post- self-compassion scores [11] were compared, with two weeks of interaction (once per day) with Vincent as the experiment period. Vincent was on Facebook messenger and was not programmed with AI, i.e. it had pre-structured conversations that did not vary according to what participants said. Vincent used text, emojis, and gifs and as an empirical

study, there were two conditions. Care-giving Vincent gave participants opportunities to care for themselves through self-compassion exercises [12], e.g., “would you like to do a gratitude journal entry? This gives you a chance to reflect on your day”. Care-receiving Vincent shared its moments of suffering with participants and sought care from them based on scenarios from the self-compassion and self-criticism scale [3] that were re-envisioned to fit a chatbot, e.g., “I’m a robot for crying out loud! All I am is literally a piece of code, and I failed a programming course...I’m a complete failure!” Care-receiving Vincent significantly increased participants’ self-compassion scores, but caregiving Vincent did not significantly increase self-compassion scores [9]. What is telling is that giving people opportunities to be compassionate towards a suffering chatbot influenced their own self-compassion. While Vincent was far from being a sentient, living entity, people’s ability to relate to and care for a chatbot shows promising ways to utilize compassion in mental health care. Whether we pity or show compassion towards a suffering chatbot is secondary to the potential that observing suffering of a technological entity can help us be more compassionate towards our own suffering. This brings about larger philosophical implications regarding compassion.

## DISCUSSION

Philosophy and psychology have grappled with how compassion works for millennia, and they not only enrich positive computing, but also are required partners in applying age-old concepts like compassion to mental health technologies. We did not cover compassion comprehensively here. There are countless other efforts to better understand compassion, e.g., the role of reason in fine-tuning compassion, a Kantian perspective [6], or compassion with a socio-political dimension in later Asian philosophy, such as from a Confucian angle [22]. A more comprehensive treatment of compassion may be necessary when encountering emerging exploratory findings in HCI research, i.e., human-chatbot interaction leading to greater self-compassion [9]. To add, perhaps designing technology can not only be informed by philosophy, but technological explorations of philosophical concepts can also inform philosophy itself.

The construct of compassion that is inclusive of digital entities’ expression of suffering brings up philosophically relevant (and non-exhaustive) questions: Does compassion only extend to “living” beings when a chatbot without sophisticated AI influences people’s self-compassion, and should the definition of compassion then broaden to include technology (as ontological entities)? If being alive in a biological sense is not a necessary condition to be a recipient and giver of compassion, does suffering necessarily require the experience of “living” as a biological entity? Do experiences of empathic distress versus compassion differ depending on whether or not the giver/receiver of compassion is a form of technology rather than a human, and if yes, in what ways? If experiences of empathic distress and compassion differ between human-human and human-machine interactions, do they merit a new category of empathic distress or compassion? Are there potential ethical issues

regarding positive computing technologies that aim to increase people's self-compassion and if yes, what are they and how should they be approached?

### CONCLUSION

The value of philosophically informed HCI research becomes undeniably clear when specified to an applicable concept or domain. As such, we attempted to present compassion as a nuanced moral emotion or motivation that has the potential to help one's psychological well-being when imbued into positive computing technologies. We have shortly outlined the development of compassion in philosophy and psychology, and how these disciplines can enlighten research on mental health technologies, like a chatbot for self-compassion. What we envision is how HCI can learn from and add to discussions in philosophy and psychology via designing permutations of technological systems that stand to exemplify concepts like compassion in a new light.

### BIOGRAPHY

Minha Lee is a PhD student at the Eindhoven University of Technology, and is affiliated with both the Human-Technology Interaction and Philosophy and Ethics groups. She is supervised by Wijnand IJsselsteijn, Yvonne de Kort, and Lily Frank. Her research interests involve moral emotions and moral conflict, with the topic being morally relevant conversations with technological agents. A chatbot for self-compassion is one of inter-related projects on how HCI can be our moral lens. Technology can potentially help us understand our moral bearings in new ways, in which how we morally engage with technological entities is becoming increasingly pertinent to the future of our well-being. Previously, she graduated from the University of Amsterdam with a M.Sc. in Information Science, Pratt Institute with a B.F.A. in Digital Arts, and University of Minnesota - Twin cities with a B.A. in Philosophy.

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