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A conceptual and ethical framework for empathy and communication technologies

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ABSTRACT

While there is an interest in questions related to empathy and communication technologies (CTs) in various disciplines, conceptual and ethical ambiguities on what empathy exactly is and whether and how it can be shaped by technologies make it unclear how to approach such questions. This paper sets out to provide such a framework: a way to understand empathy and its relationship to CTs in a conceptually and ethically robust manner. A critical reconsideration of the concept is needed, especially if we want to use the concept to evaluate technologies and their impact in terms of desirability and guidance to shape our future. I argue we need to understand empathy explicitly as a moral concept that is contextually situated, relational, and diverse, and to do so, I argue to understand empathy as a virtue. Section 2 lays down the theoretical foundation to explore empathy as a virtue, technological mediation, and CTs. In section 3, I apply these concepts to identify different ways in which CTs can mediate empathy and change what it means to be empathetic on both individual and societal levels. This multi-layered understanding of "CT-mediated empathy" provides a lens through which questions on CTs and empathy can be approached, such that we can reflect on, evaluate and improve specific technologies, their implementation, and their use. In section 4, I summarize this in a list of seven questions that require reflection in the design and implementation of a (new) CT. The paper ends with some forward-looking implications and recommendations for design, research, education, and policy towards an empathetic sociotechnical future.

1. introduction

Our social lives are changing rapidly with the integration of communication technologies (CTs). We have new ways to connect with other people and the ability to make connections we otherwise wouldn't have that easily. Intuitively, this has changed our social and moral landscape in various ways. Whether certain changes are improvements or not, and accordingly, where we want to go in the future, is to be reflected upon. This paper focuses on a specific element of our socio-moral domain: empathy. Some questions that connect empathy and CTs are: Do technologies make us more or less empathetic? Should we do something about this? And if so, what? And whose responsibility is it to do so? Questions on technology and empathy are being explored in various academic disciplines, relating to various cases and technologies. However, it is an often discussed problem that there is no consensus on what is even meant with "empathy". Crucially, not all conceptualizations of it can be easily applied to technologies, and not all of them are moral concepts that can appropriately be used for justification of normative claims in evaluation or guidance (e.g. claims on the desirability of a certain technology in terms of its effect on "empathy"). This paper aims to fill the gap between philosophical debates on empathy as a moral concept on the one hand and applications of this concept in ethics, psychology, and sociology of technology on the other.

This would be an excellent moment to provide a definition of empathy before we continue. However, I will not yet do so (I will in section 2), because this requires further argumentation which is at the heart of what this paper aims to do. The concept of empathy is used to refer to a wide range of different phenomena [1,2]. This is not only confusing, but it also causes problems related to normativity. While empathy is often *used* with a positive connotation, i.e. calling someone unempathetic is considered an insult and vice versa, many formal academic conceptualizations of empathy are of a descriptive rather than normative nature [3]. This misalignment between how it is used and how it is conceptualized creates problems. This is particularly tangible in the societal impact of research on empathy and autism [3,4]. To complicate things further, it is unclear whether we can simply apply an

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existing understanding of empathy to CT use. Some trends in popular conceptualisations of empathy are particularly limiting or even problematic when applied to an evaluation of technologies, as I will further argue in this paper. A critical reconsideration of empathy as a phenomenon in a social environment that is more and more shaped by CTs is needed. I argue that if we want to use the concept of empathy normatively, i.e. for reflection and guidance, with regards to the evaluation, design, and implementation of CTs, we need to understand empathy explicitly as a moral concept (in a way that grants the concept this normativity), as well as contextually situated, dynamic, relational, and diverse.

This aligns with a conceptualization of empathy as a virtue that is dynamically situated in a changing sociotechnical world [5,6]. Virtue ethics as a moral theoretical framework and tradition of thought has been regaining more attention in recent years, particularly in relation to ethics and philosophy of technology [7]. Briefly put, virtue ethics is an ethical theory concerned with the conditions necessary for human beings to flourish, emphasizing the development of virtues as integral to this endeavour. Among its benefits (or virtues, if you will) is inviting a complex and nuanced perspective on the relational dynamics between humans, society and technologies [8–10]. It encourages an approach that centres moral agents as embedded in a constantly changing sociotechnical world in which they try to flourish. This suggests a sense of responsibility for individual people, as well as a critical role for technologies and sociotechnical systems in how they challenge and/or support us to live virtuously. In this paper, I propose to approach questions on empathy and technology in this manner. While historically empathy has been overlooked or rather not conceptualized as a virtue, more recently it has been argued that we should understand it as one moving forwards [5,6][5]. This way of conceptualizing empathy will be introduced and contrasted with other approaches to empathy in section 2.1. This virtue concept of empathy will form the lens through which CT-mediated empathy will be analysed in what follows, and from which, then, a seven-part framework for reflection on empathy and CTs will be developed.

As stated, the aim of this paper is to develop a conceptual and ethical framework that can be used to approach questions on how empathy can be mediated by CTs, and provide guidance to design, implementation, and use of CTs that aims to support and not stand in the way of empathy. The ambition for this framework is for it to be serviceable to various disciplines working with questions on CTs and empathy (for example, as part of responsible innovation, value sensitive design, or ethics of technology), and for it to be conceptually and ethically sound. I will approach this by exploring different ways in which CTs can mediate empathy, empathy development, and the social context in which people empathise. I will then summarize these different dimensions of "CT mediated empathy" as a comprehensible framework that can be used as a lens through which to approach questions CTs and empathy.

I will start by introducing the conceptualization of empathy that will be used in the analysis, namely empathy as a *virtue*. I will also explicate how *communication*, *CTs*, and *technological mediation* (as a theory in philosophy of technology) are understood in this paper. Then, in section 3, I will explore different ways in which empathy, understood as a virtue, can be mediated by CTs. Importantly, I will focus not only on mediation at the level of individual users (micro), but also at a societal level (macro). There has been some rightful critique on the individualistic focus in the ethics and philosophy of technology, including mediation theory [11]. Thus, in the exploration of CT mediated empathy executed here, both the individual users (micro) and the society they are embedded in (macro), will be considered. Finally, in section 4, I will condense my virtue ethical analysis into a framework consisting of seven questions that can be used for reflection in technology design, implementation and policy to support the virtue of empathy in an ecosystem of humans and technologies, along with other implications and recommendations.

Before we begin, there are some remarks about what to expect (and what not to expect) of this paper. While providing various examples throughout, I do not analyse a specific technology in detail. Rather, the analysis aims to serve as a broad framework that can be applied to a variety of CTs. Additionally, it should be clear that this paper is not a descriptive review of how current CTs mediate empathy. Instead, it is a theoretical investigation and normative ethical argumentation on how to best approach questions related to empathy and CTs. It provides a lens through which, then, empirical findings in the context of CTs and empathy can be interpreted and collected in a conceptually and ethically robust manner.

2. Theoretical approach

Before we begin the theoretical and ethical analysis of empathy and CTs, the main concepts used need to be clarified. First and foremost, I will introduce and argue for my virtue ethical approach to empathy, which will be the structural foundation of the analysis. Then, the terms *communication* and *communication technologies* will be defined, to explicate the meaning of these concepts as used in the context of this paper. And finally, technological mediation as a theoretical approach in philosophy of technology will be introduced – in particular the way in which it will be applied in the investigation of *CT mediated empathy* that follows.

2.1. Conceptualizing empathy as a virtue

To work towards a sociotechnical future that allows us to flourish as social beings, a better understanding of how CTs shape our social relational lives and some of its ethical dimensions is needed. However, the question remains whether and how we can use the concept of empathy to do so. As mentioned above, the term *empathy* is used in many different ways. Importantly, while the concept is often *used* normatively for evaluations or guidance, many *conceptualize* empathy descriptively and not as a moral concept, which leaves its moral connotation inappropriate [3]. To continue using it normatively, we need to conceptualize empathy in a way that grants the concept with such normative moral authority.

Another concern is that many popular conceptualizations of empathy (implicitly) have built into them or invite limiting theoretical approaches [1]. Over the past decades, advances in cognitive science have been providing reasons to rethink various dualisms including mind-body, perception-action, affective-cognitive, internal-external, and individual-collective. Instead of thinking of first-person experiences, such as emotions, as something hidden in a "mind" that lives in or uses a "body", it has been widely argued that they cannot be separated from and are, in fact, embedded in the body – in other words, embodied [12–15]. Furthermore, this subjective experience is to be understood as situated in a social and environmental context, in a dynamic manner of reciprocal influence and scaffolding [16]. In the context of empathy, this is relevant for both the empathizer and empathizee. A philosophical tradition that has been taking on and developing such a perspective on empathy at its core is phenomenology (see [17]) for a historical account of the meaning of empathy and embodiment in phenomenology). In phenomenology, empathy refers to our perceptual access to another's experience. It suggests that another's experience is not hidden inside (or behind) the other's body and we can only have a conception of it indirectly, through inference, but instead, we encounter an other as expressive from the start [18]. Yet, this direct experience of an other's experience is not complete and not always reliable. It is a *descriptive* account of how empathy is experienced, which has deep moral relevance [19], but it does not *qua concept* provide the normative resources often ascribed to empathy. As such, this is not exactly the approach to empathy I will continue with. Instead, I will now move to a conceptualization of empathy that is also aligned with a nuanced understanding of experiences as embodied and situated, while also providing a foundation for it as an inherently moral and normative concept.

Namely, empathy can be understood as a virtue; a normative concept that is evaluative of character [5], [6]. In everyday use, empathy is already something often ascribed to character, a "trait" one can have more or less of. In alignment with this, empathy can be formally conceptualized as a virtue in the following way. Amidst varying understanding of the concept, two common associations[1] with empathy can be distinguished [2,3].

1) a sense of *sharing* an experience, identification, with an other
2) the ability to take a *different* perspective, recognising the distance between oneself and an other.

Normatively, both associations are not entirely appropriate, because in reality our experiences partly overlap, but also partly differ. For example, we may appreciate different foods - but share what it's like to taste food we enjoy. Yet, it is not uncommon to take either 1) or 2) too far; namely, to attend to others' life world by projection, i.e. disregarding differences between our lived experiences, or to stigmatise, discriminate and think in an in-group/out-group manner, i.e. disregarding similarities. These tendencies can be understood as vices or deviations from a balanced, empathic engagement with others. To these vices I have referred as *proximism* and *distantism*, respectively [3]. Both vices disrespect part of the other's life world and disturb intersubjective relations. It can be challenging to properly attend to other subjects as subjects with their own first-person subjective experience[2] and relate them to one's own life world. Empathy, understood as the balance between proximism and distantism, is *the virtue that allows one to appropriately attend to experiential differences and similarities between the self and others.*

A virtue can be understood as similar to *a skill* developed with a *commitment* towards a moral goal [20]. In the case of empathy, this (implicit) commitment refers to the moral goal of respecting another subject as a subject (not an object) with an experiential life world that partly overlaps but also partly differs from one's own [19]. In a concrete social situation, this commitment should translate into a *readiness* to empathise with the other. Empathy can be developed over time, like a skill, through practice and refinement away from proximism and distantism.

To understand what this translates to in practice, the societal context needs to be considered. Features of the society one lives in can introduce particular challenges to live virtuously and opportunities to overcome these challenges [21]. Societal and relational factors in (developing) empathy need to be considered in order to understand what it means to be empathetic in a particular society, towards actual other persons [22]. Besides the individual, there is to be considered at least another subject (the empathisee), but also a larger societal context, with social norms, relationships, hierarchies, culture, and also technologies. It is in this way that a virtue approach to empathy allows us to critically consider the effect of CTs: how they change the ways in which people are challenged to navigate their social lives well, and what it means to develop empathy, like a skill, in practice. Section 3 will explore both aspects: how communication technologies can impact an individual's empathy (micro-level), and how they change the society in which we are trying to be empathetic persons (macro-level).

There are several benefits to and arguments for conceptualizing empathy this way. Firstly, this concept of empathy is explicitly normative, it being a virtue. As such, it can be appropriately used this way. The focus lies on the morality behind the concept; the commitment to appropriately attend to experiential differences and similarities. This narrows down our understanding of empathy in terms of its goal and value, while opening it up for a wide range of possibilities to approach it in practice. Specific behaviours, expressions, and practices are to be understood in a highly contextualised manner, leaving more room for expressive and behavioural diversity compared to some other popular conceptualizations of empathy [1]. This narrow behavioural approach is problematic as it does not account for, for example, neurodiversity [3,23] or cultural diversity [24]. The bone structure of the concept is the principle of balancing between proximism and distantism, while the flesh is to be understood as embedded in and shaped by personal, interpersonal, and sociocultural context, which can change over time. This dynamic approach to the concept is particularly important in the exploration of empathy and CTs. Because, contrastingly, a static and decontextualised conceptualization of empathy is at risk of granting the way empathy has been experienced, developed, and understood historically - "empathy without technology" - with normative authority without further reflection or justification (a similar point has been made for the concept of sociality [25,26]).

To summarize, empathy is:

the *virtue* that allows one to *appropriately attend to experiential differences and similarities between the self and others,* and it.

1. involves the *commitment and readiness* to attend to others subjects as subjects,
2. is like a *skill* balancing between the vices *proximism* and *distantism*, and
3. can be *developed* over time.

2.2. Defining communication & communication technologies

Communication is understood in this paper as the exchange of signals between subjects.[3] This exchange can be done through spoken language, bodily gestures, but also noticing the speed of someone's heartbeat. To clarify, with "exchange" it is not meant that the subjects "use" their body for movements to signal a message, as the relationship between experience, movement and meaning-making is more dynamic and not unilateral [27,28]. Furthermore, communication is to be understood as complex, diverse, and situated in a social and sociotechnical context [29]. With this in mind, it comes into view how technologies can not only be used as instruments that we utilize for communication, but they can themselves texture the interaction and play an active role as they dynamically couple with communicators (this will be further conceptualized in 2.3). Communication technologies (CTs) are defined here as technological artifacts that facilitate and shape communication between subjects understood in this broad sense. Some examples of CTs are social media, e-mail or video chat. Another group of CTs that I will sometimes mention in the following analysis is alternative and augmentative communication technologies (AAC), a range of technologies designed to assist people whose daily communication needs cannot be met with the use of speech.[4] All these technologies can play a

[1] Sometimes, this distinction is theorized as the distinction between affective and cognitive empathy. However, these terms are also sometimes used to distinguish elements of empathy in a different way, as revealed in a systematic review ([Redacted]). I avoid this sub-conceptualization because of its ambiguous and inconsistent usage and incongruency with the virtue conceptualization I argue for.

[2] This notion encompasses phenomena referred to by concepts like thoughts, feelings, perspectives, beliefs, emotions, ideas, etc. There are different ways to conceptualize and distinguish between these various (cognitive and affective) dimensions – but the notions of lived experience and life world as used in this paper are meant in a broad and holistic manner that stays neutral to how to theorize such distinctions further down.

[3] I am not endorsing that communication should be understood this way, but only clarifying that this is meant with communication in the context of this paper.

[4] This definition of complex communication needs (CCN) might also need revision, as the argument can be made that almost no one can meet their daily communication needs through the use of speech. However, this should not trivialise the experiences of AAC users.

role in what (kind of) access we have to another subject's life world. As such, it can facilitate or undermine our abilities to empathise, as well as influence the readiness to empathise in a social situation. Communication skills and the skill aspect of empathy as a virtue are deeply related in that sense. Good communication skills can help one to make sense of another's life world and appropriately attend to it, so be empathetic. However, communication skills are not to be conflated with empathy. For example, outstanding communication skills may be used for manipulation [30]. By the same token, very poor communication skills don't signify a lack of empathy, though they can stand in the way of putting the intention to empathise into practice. Note that not only one's own skills, but also the other's, the context, the medium used, and many other factors can obstruct or support effective communication [31]. Correspondingly, technologies can mediate communication at various levels and in various ways.

2.3. Introducing technological mediation

This brings us to the notion of technological mediation. Post-phenomenologist Don Ihde [32] described different ways in which technologies can shape or "mediate" between a human's experience of and relationship to the world. Directly relevant to this paper is the *hermeneutic* human-technology relationship, which refers to cases where the technology provides a way of accessing and interpreting information about the world. In the case of CTs, they mediate hermeneutically *between* people; they can mediate how the expressions of one person get interpreted by another person. When communications are bi-directional, the interpretation of an expression shapes the reaction of the other person in turn, which then affects how the first interprets the response, and so on. From the perspective of a single actor, developing the practical skills needed for using a technology might involve what Ihde terms an *alterity* relationship, interacting with a technology like a quasi-other.[5] One needs to learn how to "instruct" a technology to "help" get across a message. These different relationships CTs can have with users will be considered in analysing how CTs can mediate empathy. This is not to say that these are the only possible human-technology relationships for CTs, but these are the ones mainly focused on here in relation to CT-mediated empathy.

Rosenberger [33] argues for the importance of complementing mediation theory with an outlook on the relationship between technologies and wider societal and political systems and practices. This is in line with the virtue approach to empathy discussed earlier, that not only considers empathy as developed by an individual person, but also as situated in a context that can support and challenge this. Therefore, in section 3, the investigation of technologically mediated empathy will consist of two parts: micro-level and macro-level.

Crucially, the same technological artefact can be used for *different* purposes and in different ways – but not just *any*, depending on how they are used or implemented but also depending on what their own features afford [33]. For example, you can't use a calculator to iron clothes. However, you can use it to calculate how many seconds there are in a day, or to spell out some words when you hold it upside down. This phenomenon is referred to as multistability.[6] Multistability indicates that both technology *use* and technology *design* play a role in what a technology can bring about, the good and the bad. Thus, to understand how CTs can mediate empathy, I will consider how 1) *features* of a CT itself can support or undermine empathy and 2) what users need in order to *use* the CTs virtuously.

Importantly, a consideration of diversity and (in)equality is needed with regard to differences in experiences of technology mediation between users [33]. Alper, Katz et al. [34] suggest that research pursuits on adolescent media and CT-use typically focus on the user experience and behaviour of a specific demographic, while projects focusing on other communities demonstrate how heterogeneous experiences of technology mediation can be across identities. So, when investigating technologically mediated empathy, it should not be assumed that experiences of empathy (with or without technology) are uniform. Variability within the status quo and in changes brought about by technologies needs to be considered. This includes recognition of diversity in individual human-technology relationships as well as consideration of inequality on the societal level.

3. Dimensions of technology-mediated empathy

Using the theoretical approach introduced above, I will explore different dimensions in which CTs can mediate empathy - first on a micro-level and then on a macro-level. Throughout this analysis, I will use various examples of CTs. These examples cannot do justice to the complex ways in which a specific technology can mediate empathy. Instead, the examples are meant to clarify specific elements of technology mediated empathy. By using a variety of examples, I hope to demonstrate the multiplicity of ways in which CTs change empathy and how my theoretical framework is applicable to a wide range of technologies.

3.1. Micro-level: empathy and using CTs

I will start with an exploration of what it means for a person who uses CTs to connect to others to be empathetic and develop empathy. CTs can mediate your experience of another, and at the same time mediate the other's experience of you. In the following, I will set out how CTs can mediate different aspects of empathy understood as a virtue: the moral commitment behind empathy, skills to put this to practice, and the development of the virtue over time.

3.1.1. CTs and the readiness to empathise

To recall, the virtue of empathy involves being *committed* (implicitly or explicitly) to appropriately attending to experiential differences and similarities between oneself and others. In practice, this translates to a *readiness* to approach an other as a subject, not as an object, and recognising how their experience is partly the same and partly different from yours. Technologies can mediate how we experience another, and how we interpret them (hermeneutic relationship) – as such they can mediate whether and to what extent we experience them as an experiencing subject in the first place, and to what extent we recognise their experience as similar to or different from our experience.

An essential difference between CT mediated and non-CT mediated interaction that is often proposed to obstruct empathy is physical distance - the possibility of interaction in the absence of each other's body and a shared physical environment. Bodily absence in communication is not new, recalling letter exchange, for example. However, the integration of CTs has increased the prevalence of communication across (literal) distance, including frequent new social connections. The "disembodied" nature of online communication has been proposed as a reason for the severity of online hate speech and bullying compared to how people would talk to each other offline [35]. The absence of the other's body and a shared environment could promote distantism – disregarding the subject status of the other and the shared humanity.

However, the relationship between empathy, embodiment, and technology might be more nuanced. Lucy Osler [36] argues that we should acknowledge a form of digital bodily presence when interacting in digital spaces – which would facilitate the possibility for online

[5] Communicating with an artificial agent like a chatbot would also classify as an alterity relationship, but in the context of this paper, CTs are understood as technologies that mediate communication between humans.

[6] To clarify, this paper focuses on CTs in the sense of their use for communication. Multistability in the sense that some technologies originally meant for communication that can be used for art, for example, is out of scope. Instead, the multistability of interest here is how technologies can play different roles within the realm of communication.

empathy. Drawing on phenomenological approaches to embodiment,[7] Osler calls attention to the difference between the objective body and the expressive body, arguing that how we experience ourselves and others as embodied can extend beyond physical bodies. It is the lived or expressive body that is most relevant to empathy. To explain, when communicating online, the other's objective body, the flesh and blood, is indeed not directly present to us. However, she argues, we *can* perceive the other's expressive body, which includes both verbal and written speech. When we text with someone, we typically attend to the words and emoticons that appear on the screen *as* expressions of the other person's lived perspective – rather than the characters as visual stimuli. This implies that we *can* perceive the other as an expressive embodied subject, even though their physical body is not perceptually accessible to us. So, in theorizing technological mediation of the readiness to empathise, this suggests that perceptual access to the objective body is not *required*[8] for attending to another as a subject. This is important to note, as a claim to the contrary would reject the very possibility of empathy in non-face-to-face interactions – excusing both users and technology developers from efforts towards such forms of CT-mediated empathy.

Actually, in some cases the absence of the objective body and a shared physical space may be beneficial. Features of bodies (for example gender, race, perceived attractiveness, disabilities, etc.) and environments (for example a doctor's office) may introduce an interpersonal imbalance that can affect how we attend to experiential differences and similarities. Let's take a doctor-patient relationship[9] as an example. A recent study that explored the effect of technology mediation in the form of teleconsultations on the patient's experience provides a nuance to the widely discussed negative outlook on teleconsultations in healthcare [37]. Namely, the research suggests that the absence of the doctor's office was perceived as empowering by patients and as challenging by care providers, in a way flattening the imbalance typical of doctor-patient relationships. While this is an example of a physical environment, note that features of digital environments (for example algorithmic bias) could also impact relational power dynamics.

Not all CTs are used in an online environment. For example, AAC technologies are typically used in a shared physical environment. Communicative disability can pose an asymmetry with regards to perceptual access to each other's experience between individuals. Technologies that mediate self-expression and thus support such perceptual access, can enable empathy as such [38]. However, they may also introduce distantism in the form of stigma or othering, or proximism in the form of projection and wrongful assumptions about the other's experience [39].

To conclude, CT mediated communication does not necessarily preclude the possibility of approaching the other as a subject and having the readiness to empathise. At the same time, the readiness to empathise is also not to be considered a given. With and without technological mediation, humans don't always attend to each other empathetically. CTs can work along or against human limitations and problematic tendencies, by either facilitating perceptual access to each other, or obscuring the other's status as an expressive subject.

3.1.2. CTs and skilfulness in empathy

Having the readiness to empathise is one thing, but putting this into practice is another. While we may not *need* specific ways of perceiving the other, as just has been discussed, navigating changes in what we do and do not have perceptual access to requires skill. To recall, empathy cannot and should not be reduced to communication skills because of its distinct moral dimension and status as a virtue. That being said, communication skills are important to put empathy into practice. Depending on the specific technology and the corresponding technology-specific skilfulness of an individual, CTs may improve or reduce one's sense of perceptual access to another's life world. Some may find this more difficult than others (as is the case for traditional communication skills), changing the landscape of communicative advantages or disadvantages. For example, challenges in navigating new technologies and the digital divide do not only introduce all kinds of practical limitations in today's society, but also impose disadvantages in how to practice and develop skills needed for empathy in this context. And vice versa, for others historical disadvantages in this domain may be relieved by the increasing significance of CTs in how we connect to one another (see, for example, Bortolan [25]).

3.1.3. CTs and developing empathy

So far, this section has explored how CTs can impact the readiness to empathise, and how to put this into practice through skill. Like any virtue, empathy can be developed over time through self-regulation towards a moral goal [20]. For empathy, this means recognising tendencies or instances of proximism or distantism, learning from them, and making adjustments accordingly. CTs can mediate such self-reflection and –improvement in different ways, again some positive and some negative.

To start, new sensibilities may need to be developed to recognise mistakes. For example, subtle cues of discomfort by the other may get lost – or actually get enhanced when users feel more empowered or safe to stand up for themselves and others using CTs. In general, there is a significant challenge as the variety of modes available for communication is increasing, requiring a more complex development of new skills to not only improve but to keep up with our empathic abilities in practice. This in itself can be limiting, anxiety-inducing and demotivating. Some level of confidence and believe in one's ability to develop virtue is needed to adequately respond to and learn from mistakes towards improvement [40].

A safe learning environment, both internal and external, is essential for developing empathy and other virtues [40]. The confidence to recognise mistakes and having a feeling of ability to improve is a feature of the internal learning environment (mindset, attitudes, beliefs, etc.). A feature of the external learning environment is how moral failure is dealt with socially. CTs can contribute positively or negatively to the environment in which the user is supposed to develop the virtue. Social (moral) accountability can be very beneficial to individual virtue development because it can help one recognise mistakes and learn from them. But if the execution and consequences of the social ascription of praise and blame are too harsh, narrow, or even unjust, this limits self-improvement and growth ("cancel culture"). What a virtue approach shows us is the importance of social and emotional safety as conditions for moral progress.

There are also ways in which CTs can positively contribute to such an environment. To provide an example, the "Am I the Asshole" subreddit provides a platform where individuals can anonymously share a story where they might have been in the wrong and ask the community for feedback and moral insights. This way, not only the poster can learn

[7] While not conflating phenomenological empathy (descriptive) with virtue empathy (normative), we can use insights from the former to have a more detailed understanding of how (descriptive) we experience another as an expressive subject and what role technology can play in this, as this is fundamental to the readiness to empathise in my virtue account of empathy.

[8] Osler remarks that we need to be careful with assuming what kind of access to the other is required for empathy, considering ableist implications. For example, claiming that seeing another's facial expression is required for empathy (note the term "required" – not "can be helpful"), would rule out the possibility of empathy by blind people. A similar thing goes for hearing tone of voice and deafness. She also remarks that while CTs may limit our perceptual access to another, having more details does not necessarily have to be better, and she takes sensory overwhelm (as particularly common for autistic people in face-to-face social engagement) as an example.

[9] Empathy is particularly important in this context for effective treatment and wellbeing, but also challenging Howick). There is a power and knowledge imbalance, where the patient is in a vulnerable position. Additionally, a healthcare professional may require slightly more distantism compared to a non-professional context, while not going too far in this direction.

from the answers provided by the platform users, but others can learn from the mistakes and improvements made by others from reading them. The anonymity and relative openness not be created without the mediation of CTs. Without anonymity, the social implications of sharing such a story might be restraining, and without this openness the diversity of perspectives represented in both the stories and the comments would be limited. In general, CTs can provide us with more diverse stories to learn from – inviting us to develop empathy across the borders of our physical social environment. Another example of how technologies can provide or facilitate an environment for empathy development is the interaction with virtual agents such as chatbots or Virtual Reality (VR) applications. These fall outside the scope of what is considered a CT in the context of this paper, as they do not mediate communication *between* subjects, but rather appear as a quasi-other (constituting an alterity-relation, in Ihde's framework). While not considered as actually mediating empathy (or being empathetic [41]), they can play a role in individual skill-development in a similar fashion as interacting with fiction [42], as proposed by Cotton [43]: a "dramatic rehearsal" for empathy. The topic of VR and artificial agents will be discussed a bit more at the end of the paper.

3.2. Macro-level: empathy in a society with CTs

CTs have been incorporated to such an extent in our daily lives, that they have considerably altered our communicative and social practices and the social fabric of our society. The way CTs have changed the context we live in poses new challenges as well as opportunities to empathise. CTs are an integral part of the system in which we connect to one another, mediating the kinds of relationships we have, who we are able to connect with and how. It can be easier to cross geographical and cultural boundaries, reducing perceived distance. The human population has become more interconnected – a phenomenon sometimes referred to as Global Village. With the alleviation of practical barriers for connection, the scope of our social world has drastically changed, and thus how to navigate it virtuously has as well. I will expand upon this macro-level technological mediation of empathy in what follows.

3.2.1. CTs and interconnectivity

As CTs allow us to connect with more people, we can, in principle, be confronted with more diversity and be part of a larger social network across geographical, cultural, and experiential boundaries. While human diversity may not necessarily increase in itself, it can become a more salient aspect of social life, and with it has the importance of challenging the so-called similarity bias. This bias refers to observations in empirical research according which people tend to feel more with people who they have more in common with [44]. An explanation given for this tendency is that, evolutionarily, empathy has had the function of promoting altruism and protection within communities, contributing to survival of the community and its members [45]. However, in this narrative, empathy refers to something like emotion contagion, simulation, or identification. This is not congruent with the use of empathy as a moral concept, a virtue[10]. Rather, this is closer to proximism. A lack of such identification, what is observed more often towards persons considered "out-group", is distantism. An interpretation of these empirical observations of similarity bias in line with my virtue approach to empathy, is that humans have the tendency to be somewhat proximistic in-group and distantistic out-group. We might be quite accurate in projecting or simulating another's experience if that person is a lot like us. However, if we would want to expand our in-group to the whole widely diverse human population, these strategies do not suffice. Mechanisms of projection, identification, and emotion contagion to navigate our social lives have become more unsatisfactory and problematic. An undesirable alternative is distantism – considering those we cannot relate to through identification as out-group. These phenomena are not new, but the interconnectivity facilitated by the integration of CTs can amplify the salience of existing human vices of proximism and distantism and make true empathy more challenging in daily life (a similar argument has been made on critical thinking and social media in Steinert, Marin et al. [46]). This emphasizes the importance of developing this virtue.

Contrastingly, instead of facilitating interconnectivity (with its challenges and opportunities), CTs can just as well play a role in division between communities. Recall the notion of multistability. Specific elements of some CTs, like social media algorithms rewarding emotionally triggering content, filter bubbles, and hyper-personalized recommendations, may support a fragmented sociotechnical system rather than one that facilitates connection; creating or reinforcing boundaries instead of removing them.

3.2.2. CTs and empathic equity

Existing social disparity is an important factor to take into consideration when investigating how CTs mediate sociality on a community level. For example, CTs might remove barriers for expression and recognition of historically marginalised groups, for example AAC technologies [38]. The new ways of expression that these technologies afford can be empowering for both majority and minority, facilitating communication, supporting expression and understanding, and providing new opportunities for relating to another's life world. Another way in which CTs can be of particular benefit for minorities is the notion of interconnectivity mentioned before and the broadening of the "in-group". The assumption that in-group relationality can be achieved on the base of projection and identification presupposes a specific kind of privilege, namely fitting in to the norms and identity of the "in-group" community. While interconnectivity for many people introduces more differences, it can also provide a way of finding similarity for those who fall outside the local norms. Consider, for example, experiences of online community building with regards to gender and sexual minorities [47, 48], religious minorities [49], and racial minorities [50].

3.2.3. CTs and social norms around empathy

As mentioned earlier, different modes of communication require different skills for expression and interpretation. In addition to skills such as reading facial expressions, body language, and tone of voice (and expressing yourself in a way another can apply these skills to), skills such as text messaging, the use of emoticons and memes, and understanding of other technological communicative devices are needed. For some this might be a challenge, for others these skills might be easier to learn than the ones historically needed for effective communication. Societal expectations of mastery over these skills might shift. For example, would it be fair to expect everyone to be able to read facial expressions – an often-used indicator for empathic ability [1] - but excuse people for not being skilled at using emoticons? Or vice versa? What would this mean for older generations? Or for autistic people, whose empathic abilities have been overlooked through the limiting focus on particular skills [23]? Such changes in social norms and expectations could increase or resolve

[10] To clarify, the majority of empirical research done on empathy has a descriptive approach, while I argue that empathy is a normative ideal. Humanity consists of both virtue and vice – so descriptive empirical research does not actually capture "empathy", but a realistic intertwinement of empathy, proximism, and distantism. It is important to recognise the difference when engaging with empirical findings. They can give us insights into tendencies to vice (proximism, distantism), how we can overcome such tendencies and develop and refine empathy, and specific technologies can relate to this.

existing inequalities.[11]

To summarize, communication technologies have changed our social landscape. They have widened the scope for potential connection, as well as for ways to connect. This introduces new moral responsibilities and challenges as well as opportunities for empathy. This is reason to re-appreciate the importance of empathy as a virtue in our society, how it is developed, and how we evaluate praise and blame towards (shortcomings in) empathy. To what extent do we have the duty to change the way we navigate our social lives? And to what extent should this be an individual or societal endeavour? Encouragingly, next to new challenges and problems, there are also new opportunities to empathise with people we otherwise wouldn't have known about, and to develop and refine our empathic abilities with the help of CTs.

4. Supporting the future of empathy with CTs

As CTs pose both challenges and opportunities for empathy, we need to reconsider the way we think and talk about empathy; what it means, and how it is achieved. As demonstrated in section 3, CTs can mediate empathy in various ways and at various levels. In many of these dimensions, both positive and negative impact of technologies are possible.

To recall the notion of multistability introduced in section 2.4, technologies can bring about different uses, but not just *any*. The way a technology is designed can invite or entice users to use it a certain way and discourage or obstruct others. At the same time, within the restrictions and affordances brought about by the technology, users can have some freedom in how to use it, and to the extent of these possibilities ("ought implies can"), some responsibility to use it virtuously – and in the context of this paper; empathetically. Moving towards an empathetic technological future means both designing technologies that support rather than hinder empathy as well as users developing empathy in the current sociocultural CT mediated context. Both technology design and user behaviour may benefit from a general cultural shift towards a more explicit appreciation of empathy and its challenges in a CT mediated social world. This section will consider possible future steps for different sectors/actors.

4.1. Innovation, design, and implementation of technology

The way in which CTs are designed can support or hinder empathy, by moving along or against tendencies towards proximism or distantism, partly dependent on how they are designed. To move towards CTs that actually support empathy rather than stand in its way, empathy can be part of the design process in two (complementary) ways: design *for* empathy, and design *with* empathy. The first involves consciously using empathy as an evaluative and guiding factor in the design process, similar to other aspects such as safety, effectiveness, or sustainability. The second refers to the importance of empathy as a virtue for designers, engineers, and technology developers.

4.1.1. Design for empathy

Because the specific features of a CT can make a difference in its mediating role in empathy, this can be reflected upon already in the design process, aiming for a technology that effectively supports rather than stands in the way of empathy. This is aligned with the idea behind Design for Values– referring to a process of actively implementing certain values in an innovation process [51]. For this, the abstract value concept needs to be translated to specific operationalisations, and then to specific technological features. The analysis of technologically mediated empathy developed in this paper can be used exactly to this end. The virtue approach to empathy is explicitly normative, so it can appropriately be used to give guidance in a design process.[12]

The aim of this paper was to develop and provide a conceptual and ethical framework for empathy and communication technologies. To this end, the diagram below summarises the seven aspects in which CTs can mediate empathy – either positively or negatively, that have been discussed in section 3. These correlate with the different subsections, except for equality; a theme discussed throughout the analysis both on micro and macro level. Together, they provide a comprehensible roadmap to integrate empathy as a value into the design of a specific CT by consideration of its potential impact and use. Namely, this framework provides a starting point for sociotechnical imagination for the specific technology at hand. This involves creative imagination and reflection on potential future scenarios where the CT is featured in a sociotechnical system. This is the first step in translating the abstract concept of empathy to an operationalization for the application to the specific technology, and then to specific technological features. It is likely that not every dimension is relevant for each specific CT. The answer to one or some of the questions may be "not applicable". However, these questions should invite critical reflection on the potential impact of the technology on various levels with regards to empathy. What they mean for a specific development, and how they would translate to specific design choices, should be considered on a case-to-case basis.

Technology mediated empathy: a framework for reflection

Readiness	Does the technology obscure or highlight **the status of another as a subject**?
Development	Does it contribute to a **safe and constructive learning environment and culture** to develop and refine empathy?
Skills	What **skills** are **required** to successfully empathise using the technology?
Norms	Could this technology **change societal expectations/norms** on empathy?
Equality	Does the technology **relieve or introduce an asymmetry/imbalance** between users?
Equity	How are the **challenges and opportunities** for empathy with this technology **distributed** among the population?
Interconnectivity	How does it relate to **existing human tendencies** towards proximism and distantism like similarity bias **on a larger scale**?

A technology designed for empathy acknowledges a user as a subject who relates to other subjects and recognises human tendencies towards proximism or distantism. The first part of this statement may sound obvious; that the users are subjects. However, bearing it in mind explicitly can make a great difference. Consider for example cases where users are reduced to consumers or data sources to be used for personalized advertisements, and in that sense objectified. This starkly contrasts to CTs designed to empower users to express themselves more effectively towards other expressive subjects. Of course, the first CT may nevertheless be used to empathically connect with other users, and the latter category could be used inappropriately (again recalling the notion of multistability). However, this does not excuse technology developers from taking responsibility in working along or against empathy.

4.1.2. Design with empathy

This brings us to the importance of empathy as a professional virtue for CT developers. This starts with where the previous section ended: approaching the end-users of the technology as expressive experiencing subjects, whose experiences are partly similar to and partly different from those of the designer's. A balance between proximism and

[11] Another example is that for international CT mediated communication English is often used as a common language. To participate in this new social environment, being able to communicate in English, next to one's native language, is a requirement. This disproportionately puts native English speakers to an advantage, as well as people in non-English speaking countries who have received high quality language education.

[12] In contrast to conceptualisations of empathy with a descriptive approach, which are not necessarily suited to use in such a normative ("design *for* empathy") manner.

distantism needs to be found here too. Consideration of the diversity between users poses an additional challenge. There is not a single user who needs to be empathised with, but a potentially widely diverse community. Taking it even a step further, the designer needs to empathise with users who use the technology to empathise with other users (which could be considered "meta-empathy").

This is quite a big challenge, and presumably an impossible task to do alone. Humility is an important part of empathy; knowing that one does not know the exact experience of another. In a one-to-one interaction, this involves asking questions, listening, and being open to what the other is expressing. However, this is simply not possible for each individual user in a design context. Various methods have been and are being developed in acknowledgement of this challenge.[13] User-centred design is an umbrella term covering all sorts of strategies that are being created to involve users in a design trajectory [53]. These methods range from performing interviews to better understand the user's context, desires, challenges etc., to participatory design methods, where users are actively involved throughout the innovation process as co-designers [53], to meta-design approaches where users are involved even throughout the existence and use of the technology [54]. These approaches do not only empower users, but they also empower designers with the opportunity to *be* empathetic towards users in their work, by providing access to the users' experiences. And through continuous practice, the virtue can be further developed over time. The framework developed in this paper aims to support this development by providing an understanding of what it means to be empathetic and the roles CTs can play in supporting or hindering empathy.

4.2. Empathic technology use

This section started with the notion that a mutual effort between technology development and technology is needed towards technology mediated empathy. For a CT to support and invite empathy with and between users, the exact design and implementation matters, but also the skills and intentions of the users. As discussed throughout this paper, empathising with CTs requires skilfulness in the technology and new communicative practices. It requires the ability to navigate new ways of how other's experiences are (un)available to us. Continuous research efforts are needed to investigate new CTs and the specific skills they require from users, and how they can be developed. Empathy development in a technology driven world could be promoted and supported through education, policy, art, and other domains. To recall, this comprises of the readiness to approach other subjects *as* experiencing subjects, balancing between proximism and distantism, improving one's empathy over time through self-development, and using CTs accordingly.

4.3. Limitations and future directions

Though extensive, the framework developed in this paper should not be considered to be exhaustive and final. As the development of CTs and their impact on society evolves, other dimensions may be discovered and explored. Furthermore, both the analysis and framework itself do not provide any specific guidance on certain CTs. Rather, they are meant to provide guidance in how to approach such evaluations to start with. This may seem like a step backwards compared to existing current research that explores the impact of a specific CT on "empathy" in practice. However, as argued at the start of this paper, it is crucial to critically assess how "empathy" is conceptualized and whether it is justified to use it normatively in that context. For example, a recent meta-analysis concluded that current research suggests that VR as a medium does not significantly impact empathy [55]. Yet, it is important to note that the ways in which empathy is measured in experimental settings do not directly correlate to empathy understood as a virtue and the moral weight it holds [3]. VR and other immersive technology is thought to potentially have an impact on what is sometimes called empathy and sometimes called perspective-taking, by providing a simulation of a "first-person" perspective of experiences that would otherwise not be available to the subject [56]. However, conceptualizing empathy as relying on simulation and first-person perspectives is not aligned with empathy as a moral concept. It invites problematic notions such as similarity bias into the conceptualization of empathy itself and is actually what is called proximism in the theoretical approach taken in this paper: not attending to experiential differences with the humility that the reality of not having first-person access to other's experiences asks us to take on. Rather, as proposed in 3.1.3, VR, just like interacting with artificial agents such as chatbots or robots, can be more appropriately connected to empathy by taking it as providing opportunities for skill development and practice ("dramatic rehearsal" [43]). This raises a different set of ethical concerns on how these technologies are designed, for example which communicative norms are perpetuated by the technology. The framework developed in this paper could be taken into consideration when reflecting on such ethical concerns.

Finally, I will raise some suggestions for future directions. Primarily, this includes applying the framework to specific technologies and working with it in collaborative design projects. In an iterative process, the framework may be tweaked to better suit and serve practical applications in specific domains. Furthermore, empirical work conducted on technology, communication and behaviour may be reinterpreted in light of this approach to empathy, and new studies can be initiated to explore, for example, *how* a specific CT can be designed to provide safer and more constructive spaces for development, or *which* skills are needed to effectively use a certain CT, and *how* opportunities are distributed among society. Lastly, a practical and theoretical challenge that is getting more attention that could perhaps benefit from being explored with the virtue-empathy approach developed here, is extending empathy agents to which co-design and participatory methods are not accessible, e.g. future generations and more-than-human subjects.

5. Conclusion

While there is a growing interest in questions related to empathy and communication technologies in various disciplines, conceptual and ethical ambiguities on what empathy exactly is and whether and how it can be technologically mediated are making it unclear how to approach such questions. This paper set out to provide a framework capable of guiding such questions: it offers a way to understand empathy and its relationship to CTs in a conceptually and ethically robust manner. In order to use the concept of empathy to evaluate these technologies and their impact in terms of desirability and guidance to shape our future, it is particularly important to use a clear, fair, and ethically sound conceptualization of empathy. Thus, I argue to use a virtue approach to empathy in which empathy is conceptualized as appropriately attending to experiential differences and similarities between the self and other, balancing between the vices proximism and distantism. I have explored how CTs can mediate empathy at both the micro and macro level. CTs

[13] The virtue approach to conceptualizing empathy can be a valuable contribution to research on empathy in design processes. In their meta-analysis of how empathy is conceptualized and operationalised in design research, Surma-Aho, A. and K. Hölttä-Otto (2022). "Conceptualization and operationalization of empathy in design research." Design Studies **78**: 101075 [52]. stated that the ambiguity about how empathy should be understood affects this field as well. They identified five different general meanings of the term. Virtuous empathy maps onto a combination of three of them, namely: empathic orientation (the commitment to centralise the user experience), empathic mental processes (different ways to make sense of the user's expressions of their experience), and empathic understanding (accurately grasping their experience). The other two meanings of empathy they found in design research were empathic design research and empathic design action, referring to methods (doing research or undertaking activities, respectively) to gain access to user experiences. This is exactly in line with the approaches suggested here.

introduce new challenges as well as opportunities to be empathetic towards one another. This paper identified and discussed the following dimensions in which these can occur: readiness to approach another empathetically, skills needed for empathy, empathy development, social norms around empathy, equality, empathic equity, and interconnectivity. I summarized this in a list of seven questions that require reflection in the design and implementation of a (new) CT. Crucially, CTs can work along or against empathy through a combination of how they are designed and how they are used. As such, both empathic technology use and empathic technology innovation should be promoted and supported.

CRediT authorship contribution statement

Caroline Bollen: Writing – original draft, Methodology, Formal analysis, Conceptualization.

Data availability

No data was used for the research described in the article.

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