



# Caring through: Engaging with the temporality of care in more-than-human design

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## ABSTRACT

Care is a political and ethical everyday practice with nested processes and relationships. In more-than-human design, care is a practice that allows a deep engagement with time and temporality. Existing terms such as caring *for* and *about* fall short in accounting for this engagement by not bringing to the fore the diverse temporal frames embedded in care relations and the fluidity of agency between caregiver and receiver roles. This paper provides a typology informed by different kinds of care based on engagement with time and labor, such as caring *for*, *about*, and *through*. Specifically, we contribute *caring through* as a concept emphasizing the role of more-than-human temporality in care practice. Caring through accounts for plural engagements with time, the interdependence between caregiver and care receiver, and mediated aspects of care where care becomes making time for the other.

## CCS CONCEPTS

- Human-centered computing → Interaction design theory, concepts and paradigms; HCI theory, concepts and models.

## KEYWORDS

caring through, temporality, design with care, more-than-human design, temporality of care

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## 1 INTRODUCTION

Care is a political and ethical everyday practice with nested processes and relationships. According to care ethicists, care includes everything we do to maintain, continue, and repair our world [54].



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These are practices that involve attention and commitment to respond to needs [37] and acts that promote the well-being of others and ourselves based on the responsiveness to the cared-for [15]. Recently, care as a broader activity encompassing more-than-human (MtH) entities such as animals, insects, plants, waters, soil, and microorganisms are becoming more important. Scholars call for more-than-human inclusion in the discourse [9, 14] to acknowledge all we do for more-than-human worlds, which necessitates care. Through care, we attune to the Earth and become responsive toward its myriad beings, living or non-living, with whom we cohabit space and time.

HCI and design have taken a natural interest in care as disciplines responding to challenges arising from a ‘lack of care’ for the environment, such as climate change and environmental injustices. Care is seen in design research as a sensibility and practice with which we repair, regenerate, and restore more-than-human worlds [56]. Noteworthy examples include the design of care practices towards more-than-human entities such as living (e.g., silkworms, bacteria) and non-living beings (e.g., objects, tools) [21, 42, 51, 60], the design practice becoming a way to care [28], care as a design ethic [23, 24, 52], and care as a moral stance [2, 16], with which we design tools, systems, and artifacts [29, 57].

Care is an ever-encompassing activity surrounding the design practice, and the ambivalence of care can make it challenging to decide what counts as care and who needs to be cared for. As traditional understandings (e.g., health care, tending to the elderly, and children) evolve into the emerging discourse around more-than-human care, there is a risk of care becoming a buzzword used without a nuanced understanding. We believe such an understanding can help researchers *carefully* and *attentively* find opportunities to relate to more-than-human worlds and to build relationships with more-than-human entities.

To promote such understanding, we provide a typology of care, addressing time and labor-related aspects. Not all care involves practical work towards the cared for; it can also refer to someone’s positioning and emotional involvement. We believe different types of care (i.e., caring about, for, with, and through) can unravel the dynamic relationship between caregiver and receiver and reveal the role of time in an ongoing care relationship. Specifically, we provide the notion *caring through* as a generative term to highlight the role of time in care and the fluctuating care roles that are not fully

captured via existing terms. In the paper, we first discuss related work in design-oriented HCI research, followed by a theoretical background on care ethics, elaborate why a typology of care is needed for design, and identify opportunities and implications for 'caring through.'

## 2 RELATED WORK

### 2.1 Care as a lens in HCI and design research

In HCI, care has been used as an interaction framework for health care, IoT, and community engagement [7]. Recent scholarship increasingly considers care as a design lens beyond health care or care of dependents such as the children and elderly [53]. Integrating care into sociotechnical systems through technology is becoming an important research avenue [10] while emphasizing care as a fundamental everyday activity. This has highlighted understudied aspects of care through different terms and notions. For instance, Toombs and colleagues use *everyday care* to address the ever-encompassing nature of care [53], while Zhou and colleagues use *mutualistic care* to point at the reciprocity in care and that the things we care for also care for us in return [60]. Feminist ethics of care have been influential in focusing on complex aspects of care in HCI, where researchers *unsettle* care by paying attention to interdependence and relationality instead of fixed power relations between caregiver and receiver [24]. Similarly, Helms and Fernaeus [19] reveal tensions around domestic care by foregrounding the unease, negative feelings, and painful relations associated with care work. They develop orientations for *wickedness* in design by emphasizing that these tensions are not to be resolved but rather to be seen as sources of contradictory desires that go beyond normative expectations [19].

**2.1.1 Care in more-than-human design.** As an emerging research avenue, more-than-human design represents a paradigm shift in HCI and human-centered design where the assumption of human superiority is challenged, and the well-being of more-than-human entities alongside humans is considered paramount. More-than-human design thus prioritizes the ways of relating to more-than-human entities in less human-centered ways, such as through acts of noticing [32, 46], attunement [31, 33], and repertoires [41]. Care is seen in more-than-human design as a practice with which we relate to more-than-human worlds [56] to live together "as well as possible." Research in this realm includes the sustained growth of living beings such as fungi, bacteria, plants, and more [17, 21, 42, 51, 60], caring for non-biological entities such as AI [22], and feminist, tactful, intimate care practices [1, 11]. Recent work explores the materiality of everyday care through living with silkworms [21] and Cyanobacteria [59]. Sondergaard and Woytuk show how caring for oneself through menstrual care practices can extend to caring for other beings such as soil [51]. Lastly, at the intersection of care ethics and posthumanism, Key and colleagues urge practitioners to contribute to a feminist unsettling of HCI's methodological commitments based on a posthumanist design agenda, which deals with relational understandings and temporalities of more-than-human entities [24]. In design research, more-than-human care is multi-layered, ongoing, and continuous, requiring a deep engagement with time and more-than-human agency. Who cares for whom, when, for how long, and who decides what are all relevant aspects

one needs to address in care involving more-than-human worlds [40]. Specifically, more-than-human care, as inevitably bound up in more-than-human rhythms and motions, makes **temporalities of more-than-human care** a vital research avenue so far under-studied [40]. Therefore, we see an opportunity to bridge the two strands of research on temporality and care.

### 2.2 Time and temporality in HCI and design research

Research in HCI and design has dealt with multiple aspects of temporality. These range from deliberations over *temporal forms* in interaction design [55], temporal characterization of living media [3], *slow design* and *slow technology* [38], investigating longer-term human-technology relations (i.e., interaction beyond use) [39], to designing for slowness, solitude, and mental rest. Other works that approach temporality from an empirical perspective include designing for breakage and repair [20, 47], with traces and patina [48], as well as the afterlife as a state of things beyond immediate interaction [58]. More recently, researchers have been critically approaching time and temporality by looking at the underlying definitions of time. The most well-known example is the conceptualization of 'temporal design' by Pschetz and Bastian, in which time is seen beyond dichotomies of speed (i.e., fast or slow) or duration (i.e., long or short) towards social, cultural, and political dimensions of time. According to tenets of temporal design, time is multiple, heterogeneous, and arises from the unequal entanglements between various social formations [44, p.174].

Designing with living beings naturally engages the researcher with more-than-human temporality, as they involve processes of growth, decay, degradation, and other more-than-human rhythms. Current approaches to more-than-human temporality consist of 'working at the pace of the nonhuman' [5], which is framed as an opportunity to slow down, particularly through the time it takes to grow and cultivate nonhuman entities such as SCOTBY (symbiotic culture of bacteria and yeast). Additionally, differences in human and nonhuman temporalities (temporal dissonances) can open up valuable design spaces and opportunities for alignment [60]. These differences in temporality invite discussions around more-than-human temporality, presenting an alternative to our relationship with time, shaped by global industrialization and the Anthropocene [21]. As evident, designing with more-than-human temporalities is gaining wide consideration as a way to attune to ecological worlds [6, 12].

To bridge this research on care, time, and temporality, we unpack the term *temporalities of more-than-human care* [40], which contain multiple chronologies, past, present, and future, that may be enacted and lived simultaneously in care relations. For example, a tree that a human cares for lives long beyond the human, such as the living root bridges of Meghalaya [25], taking shape through the collaborative work of generations that span across centuries. Anticipating that the tree will live on long after the human is experienced in the present by the caregiver. In parallel, we owe the present conditions with which the tree grows to the care work done in the past by our elders and all the material (e.g., soil) and social assemblages that have come before us. Additionally, there is *duration* and *delay* in care; that the effects of care may reveal themselves much later than when care

is implemented. Delays, mismatches, and alignments are part of any ongoing care practice. Experienced as latency (e.g., delay in care), asynchrony (e.g., differences in human and more-than-human rhythms), and synchrony (e.g., alignment of rhythms) through the enactment of care, thus compose temporalities of care. Yet, the engagement with more-than-human temporality can express time beyond the fast-paced experience of everyday life, characterized as experiences that are *devoid of duration* [18]. Care thus has a temporal richness, which warrants generous thinking about time and temporality (subjective experiences of time). We believe the notion *caring through* encourages such generous thinking, along with other typologies of care such as caring about, for, and with, which shed light on different types of care based on engagement with time and labor.

## 3 BACKGROUND

### 3.1 Typologies of care

Care can be broadly defined as "physical and emotional labor" towards the other (e.g., humans, pets, plants, soil, water, and so on) [8]. It is a practice with temporal and relational implications: it takes time to care, and through care, we relate to the ones we care for [14, 27, 37, 54]. This rich view on care is indebted to the work of multiple care ethicists. To give a few examples, Noddings (2008) claims that care is, first and foremost, a relationship, and an ethically caring relationship consists of reciprocity, dynamism, and dependency. Kittay (2019) associates care with labor and attitude towards the cared-for [26]. Despite abundant scholarly efforts to define care, it remains elusive and hard to grasp [49] due to its omnipresence in everyday life [59]. Care can mean performing bodily labor for the well-being of others, being distant, or having an emotional attachment toward the other. To develop a nuanced understanding of care, we provide a typology based on different types of care, i.e., care as labor, emotional attachment, or one's positioning. We scaffold this typology through categories such as caring *about*, *for*, *with*, and caring *through*. To illustrate each category, we provide multiple definitions that we associate with each term. These categories should not be taken as absolute or fixed; we invite designers to also *unsettle* these categories, as they unsettle care itself.

- *Caring about* – It involves anticipating needs, our positioning, and moral stance, such as 'caring about the environment' or 'caring about sustainability'. Researchers may care about their users, area of focus (i.e., sustainability), and methods. Caring *about* does not necessarily lend itself to any labor or time put into care; there can be a tendency to objectify or alienate what is cared about when care is seen as a relation. Caring about others does not immediately substantiate practices that involve making time for them.
- *Caring for* – It involves our intentionality towards the needs of the cared-for and charting out a trajectory for care (i.e., planning how to meet different needs). Caring *for* often indicates the subject-specific recipient of care work without objectifying or alienating the subject of care. It involves the practical work and physical labor of making time for the other.

- *Caring with* – It involves our attention to those with whose agency we perform care with, in a *reciprocal* sense, i.e., infrastructure, materials, systems, and the labor of other beings that *enable* care.
- *Caring through* – It involves temporally flexible practices that are based on being responsive towards plural temporalities of care (i.e., delays, mismatches, and alignments), as shown by the synchrony between the caregiver and care receiver, often dissolving the distinction more between giving and receiving care more strongly than caring with, given the temporal flexibility of how care also morphs the sense of time.

Existing terms such as *about* and *for* imply different kinds of engagement with time, including noticing, anticipating, and meeting one's needs. These bring forth different rhythms into the care relationship. However, they do not imply how care practices involve the interdependence among (and blurring of) the roles between the caregiver and care receiver due to diverse *temporalities*. Recent studies respond to an imperative for more-than-human care and question how relationality and temporality are becoming essential to consider. One response belongs to Puig de la Bellacasa, stating that care practices involve the carer with the rhythms of motion and change that the cared-for goes through [45]. To illustrate, she shows how caring for soil helps the caregiver to align themselves with the pace with which soil metabolizes nutrients, renews itself, and so on. This means any care practice directed towards soil needs to follow the pace of the soil itself. Another response is to the reciprocity and subjectivity requirements defined by Noddings and Kittay, respectively. Brelje argues that reciprocity is not a human-exclusive element; indeed, *non-humans are very receptive to care* [9]. This reciprocity is established beyond human-centered means, such as language and verbal communication. An organism's growth rate (i.e., fungi respond to different nutrients with different growth rates), chemical indicators (the pH level of soil speaks to its level of quality), and wagging tails (dogs express enthusiasm and affection to care through wagging their tails) can all be elements of reciprocity as much as a human's confirmation of the care received. This *reciprocity* confirms a more-than-human agency in care, a quality that we most frequently attributed to human-to-human care relationships so far. More-than-human reciprocity moves beyond a fixed relationship between an independent carer and a dependent cared-for towards an interdependent and harmonious one, where subjects in the care relationship are bound up in a pluralistic sense of time.

Acknowledging the interdependent nature and more-than-human temporalities of care, we must broaden the current ways we think and design with care. These acknowledgments are needed to inform better the technologies, systems, artifacts, and relationships aimed toward more-than-human care. To expand the current ways we design care, we introduce the notion *caring through* to emphasize the role of **time** emerging in care practices.

## 4 CARING THROUGH

More-than-human care is a relationship that involves deep and diverse engagements with time. Current concepts of relating to more-than-human entities in HCI and design research, such as noticing,

	Association	Examples
About	Emotional attachment	Thinking of someone in an emotional way
	Positioning	A researcher caring about the environment, sustainability and their users
	Moral stance	Caring about social justice and being attentive to what it means.
For	Intention to meet one's needs	Providing nourishment for the soil
	Bodily labor to meet one's needs	Maintaining optimal growth conditions for plants
	Practical work to meet one's needs	Ensuring a safe and comfortable environment for house pets
With	Systems, materials, and infrastructures that enable care	UN Sustainable Development Goals for someone working within sustainability
Through	Cascading effects beyond the act of care	caring for fungi can allow fungi to care for the soil,
	Consequences of care unfolding over time that requires staying involved with the cared-for	caring for plants can allow plants to care for the soil,
	Ripples of care: the possibility of extending care beyond its recipient to include others in an ongoing fashion	caring for wolves can allow wolves to care for the ecosystem,

attunement, and repertoires, all bring forth ethical and responsible ways of building relations with more-than-humans. Noticing [32] brings forth different ways of sensing the world around us, while paying attention to dominant perspectives and subversive ways to provide alternatives. Attunement [33] aims to expand our dominant senses of vision, hearing, and touch and invites us to attune to other senses that might play a more important role with more-than-human entities, such as attuning to temperature, pH, or other chemical and environmental indicators. Lastly, ‘repertoires’, as introduced by Wakkary [56], and in work by Oogjes and Wakkary Oogjes and Wakkary [41], serve as an inclusive term to encompass everything we do to ensure the participation of nonhuman agency. Building on these works, we see an opportunity to bring forth the role of time in more-than-human care practices as an inseparable element of relating to more-than-humans. Thus, we contribute ‘caring through’ to encompass diverse and plural engagements with time in care practices, emerging through interdependent relationships in care. Caring through means more-than-human care occurs via rhythms beyond the human-centered rhythms of the clock or the institutional rhythms (i.e., work, school) that we synchronize our daily lives with. This allows us to synchronize our human-centered rhythms with those of more-than-human paces and rhythms, or work with asynchrony as a direct contributor to care practices.

Existing prepositions in English do not emphasize this possibility, e.g., caring for implies a temporally one-way relationship between an independent carer and a dependent cared for, which limits the interdependence and the temporalities that arise from the reciprocity, given that sometimes caregivers are also care receivers. Similarly, caring about does not reflect the investment aspect of

more-than-human care in terms of energy, labor, and time, in the way that *it takes time to care* and care manifests itself primarily through *making time for the other*.

Caring through encompasses previously defined kinds of care: caring about, caring for, and caring with. Additionally, it recognizes the diverse temporalities of care involved in the care relationship, which is bound by the blurring of the roles between the caregiver and care receiver. Below are some examples that illustrate caring through in practical terms:

- Grazing animals such as goats, cows, and sheep eat ‘fire load’: bush and plants that can be hazardous in creating a fire risk [50]. Through this grazing behavior, they create cleared paths in forests, lowering the risk of wildfires. Here, the land, the forest, and the flora are cared *through* the agency of grazing animals. This means paying attention to the landscape’s and animals’ rhythm (i.e., the pace and timing of grazing).
- In 1995, Yellowstone National Park in Wyoming, U.S.A. reintroduced wolves back into the park [43]. The reason was that the deer’s overgrazing largely destroyed its streamside vegetation, resulting from overpopulation without a predator. By bringing back the wolves, the deer population was balanced. And by diminishing the deer population, the vegetation flourished in six years. Caring for vegetation happens *through* the agency and labor of wolves via preying on the deer.
- Practices that employ natural biological processes to eliminate toxic contaminants, broadly defined as bioremediation [35], is another example of caring through. In this ecological technique, microorganisms, fungi, green plants, or their

enzymes return the natural environment to its original condition, altered by contaminants and effluents. Care happens *through* the agency and labor of microorganisms and fungi in the context of land restoration, conservation, and regeneration.

'Caring through' makes space for the multiple temporalities of care, labor, and agency of the intertwined roles of the caregiver and receiver. Compared to caring *for* or *about*, caring *through* extends the care work to initiate a 'ripple of care': *cascading effects of care*, where whom we care for may end up caring for others and ourselves as a result of extending the temporal reach of care acts. Below, we expand on one of the examples we previously provided to illustrate further our conception.



**Figure 1: Mycelium placed on soil. (a) The moment of placement. (b) After two weeks. (c) After three weeks, with increased vitality via the arrival of worms**

**4.0.1 Example: Caring through fungi.** To illustrate caring through further, we share an example of caring through fungi: The practice of remediating soil and freshwater sources through the mycelium, the root network of fungi. The first author(FA) has been involved in practicing this method, called mycoremediation [34]. Within mycoremediation, acts of care for fungi (i.e., growing fungi, maintaining their growth with nutrients and proper conditions) create ripples of care that extend beyond the keeping alive of fungi and towards other more-than-human entities, such as the land, soil, and freshwater.

In her practice, the FA cares for fungi by growing them in optimal conditions, providing enough rich nutrients for maximum growth, and keeping them in sterile conditions to prevent contamination, i.e., the presence of harmful bacteria that can hinder the growth of fungi. The *through* part of this care work begins outside the lab environment, where the FA places composites of living mycelium in places that may warrant *care*: areas of toxic waste, poor vegetation, and so on. The act of placing living mycelium in a place that needs care thus initiates a ripple of care: one act of care extends to become an act of care for another.

Wherever placed, the living mycelium increases vitality in its surroundings and invites other creatures (e.g., worms, termites, and insects) to the area (see Figure 1). Additionally, through the enzyme-releasing capacity of mycelium, harmful compounds in the soil, such as petroleum, pesticide, or industrial dye, are broken down into simpler molecules that the soil can metabolize. The process involves working with multiple rhythms of fungi, soil, and their interaction. The effects of placing the living mycelium at a chosen site make its outcomes appear in a mediated fashion: it takes time and blends the rhythms of soil and fungi to work together. Reflecting on this practice, daily visits to the site can become a

source of disappointment, as mycelium operates on a different timescale and pace than the anticipated minutes, hours, and days of human labor.

Bringing together the examples and characteristics defined so far, below we present the main contribution of 'caring through,' which we hope to explore and discuss with the HTTF community:

**4.0.2 We care through time.** : Caring through accounts for synchronous (temporal alignment between subjects), asynchronous (temporal misalignment between subjects), and latent (delays in care) aspects of care practices, which encompass plural temporalities that take care beyond notions of immediacy and linearity. An act of care may make its effect appear long after the moment of implementation, which speaks to the previously mentioned aspect of latency. In the Yellowstone example, bringing back the wolves shows its result after six years. Similarly, we can design multiple ways of caring for ecosystems that will outlive their human caregivers. Thus, caring through responds to the need to think generously about time and temporality, meaning that more-than-human care is continuous and ongoing, moving past our notion of time. Caring through time means staying with the consequences of care long after it is implemented: it makes explicit how care practices encompass plural and layered engagement with time, with unknown effects. Most importantly, humans are not the only caregivers in more-than-human worlds. More-than-human entities care for, with, and through us and others as much as humans' capacity to do the same. In the next section, we discuss the implications caring through may have for HCI and design research.

## 5 DISCUSSION

We typologized kinds of care and the engagement they bring with respect to time through categories of caring about, for, with, and through. Specifically, we highlighted caring through as a notion that pays attention to temporal divergences (e.g., synchrony, asynchrony, and latency) and longitudinal temporal frames, as more-than-human care takes time and is an ongoing practice. Caring through extends the temporal reach of care practices by emphasizing the role time plays in care. In this section, we discuss opportunities where caring through can mobilize generative thoughts and practices in HCI and more-than-human design.

### 5.1 Accessing more-than-human temporalities with care

The notion of 'caring through' can enrich and bridge the emerging discourses on care and temporality in HCI and more-than-human design. So far, these discourses have been handled separately, c.f., temporal design [44], seldom touching upon temporality and care together [5, 21, 60]. Caring through offers a richer understanding of the entanglements between care and time, to approach more-than-human temporality through the unfolding and evolving of caring relations. This perspective has two key implications: First, in contrast to how modern life is experienced and characterized as devoid of duration [18], more-than-human care practices invite us into a realm of time that emphasizes *duration*. This may manifest itself through anticipation, delay, and reflection, allowing for possible synchrony with other beings' rhythms and asynchrony through rhythmic differences. Second, engaging with more-than-human

temporality through care involves respecting the pace and rhythm of other beings in their own right rather than considering them to be slow [4] or something to wait for. This acknowledgment brings more-than-human agency to share the stage with humans [56], while enabling us humans to quietly leave the stage in favor of more-than-human agency to shine without our interference.

Wakkary interprets more-than-human care as not just acts of care but also creating *possibilities for care*. Informed by Puig de la Bellacasa's work on speculative ethics of care [14], possibilities for care expand through speculating on *how relations with more-than-human entities could be*, rather than how they already are [56]. The emphasis on possibility and alternatives is imbued with expressions of time beyond dominant narratives of progression and an accelerated sense of futures. With caring through, the temporal aspect of such speculative alternatives is capitalized. Thus, more-than-human care is not just about creating forms of care [1, 11, 17, 21, 42, 51, 60], but actively imagining evolving relationships with more-than-human entities through care. To mobilize such possible relationships based on imagining alternatives [30], we ask researchers to deliberate on how time and temporality can be made explicit and become generative elements in more-than-human care practices.

## 5.2 Ripples of care

The possibility of caring for one being through another over time makes explicit how we depend on the entities to whom we provide care. Caring through means tending to the care practice beyond instantaneous enactments of care toward its relational trajectory, to the displacement of established roles between the caregiver and care receiver. Current design research on more-than-human care often involves practices focusing on a single organism such as lactic acid bacteria, slime mold, and silkworm [13, 21, 42]. Yet, care is more than seeking to keep an organism alive. While this is definitely an example of care, it does not address how caring for one organism can extend to caring for each other and yet-to-be-imagined beings. The notion of caring through invites researchers to think of acts of care towards one being (i.e., growing fungi, keeping bacteria alive) as not an outcome to achieve but the beginning of *ripples of care*: the cascading effects of care that allow caring for diverse beings through another in a temporally pluralistic manner. In their work, Sondergaard and Woytuk discuss possibilities for how menstrual care for the self can extend into caring for the soil through blood becoming a nutrient source for soil [51]. We see this as an example of how caring through can be mobilized to think in extended and relational ways about care. Similarly, caring through extends the act of care to possibly account for caring for another being in more-than-human design.

## 5.3 Intermediate engagement

Our last implication for caring through is Artificial Intelligence (AI) as a more-than-human entity [36]. Research in this realm includes community-oriented care through online moderation [57], enhancing individual's self-compassion via caring for a chatbot [29], unpacking social, ethical, and political implications of AI via exploring 'how to care for' creative-AI tools [22]. AI as a recipient of Mth care has been approached from the caring *for* aspect, which,

as discussed before, limits what care can initiate beyond the act of care. On the other hand, caring *through* AI extends caring for and caring about by making the intermediate role of AI more explicit in design. This opens up opportunities to think of AI as interdependent with potential partners in care practices (i.e., living beings, ecosystems, communities).

## 5.4 Positionality statement

In the spirit of reflexivity, we find it important to share our positionality. All authors have diverse social, cultural, and academic backgrounds, spanning Middle Eastern, Western European, East Asian and North American contexts. The first, second, and third authors are non-native English speakers, while the last author is a native English speaker. For all authors, English is the primary language used in their personal and professional lives, shaping their shared understanding of care.

The notion of care through should be understood in the context of the English etymology of "care," which embodies the dichotomy between object (the cared-for or care receiver) and subject (the carer or caregiver). The relevance and implication of the presented framework for other languages and cultures, where this distinction is more fluid, warrant further attention beyond the scope of this paper.

We acknowledge that this linguistic framework may narrow one's perspective on care, as language shapes how we categorize care through prepositions such as "about," "for," "with," and "through." We feel these prepositions are essential for clarifying interactions, particularly between caregivers and receivers, and for indicating temporal and spatial dimensions in language, though may encourage a partial perspective on care. However, we want to emphasize that our categorization of care types is not intended to create divisions but to enrich our understanding of care, towards a more comprehensive and nuanced one, through diverse engagements with time and place. Specifically, we use "through" to signify the process-based and rippling aspects of care, inviting a temporally pluralistic and open-ended understanding of time.

## 6 CONCLUSION

There is an imperative to acknowledge more-than-human agency and temporality in care practices. We care for, with, and through more-than-human entities as much as they do the same for us. This brings forth the need to develop generative notions that emphasize the role of time and the reciprocal elements of care. We contributed 'caring through' to encompass the complexity of more-than-human agency and temporality as connected elements of more-than-human care. We offered typologies of care with particular attention given to *caring through* as a generative term that connects temporality and care, two inseparable aspects that weave the rich fabric of our relationships with more-than-human entities. We always care through; it is the *through* part that a thick involvement with more-than-human entities exists for relationships that make living together possible in temporally generous ways.

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