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MATERIALITY AND MACHINIC EMBODIMENT

A Postphenomenological Inquiry into ChatGPT's Active User Interface

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Abstract

The rise of ChatGPT affords a fundamental transformation of the dynamics in human-technology interaction, as Large Language Model (LLM) applications increasingly emulate our social habits in digital communication. This poses a challenge to Don Ihde's explicit focus on material technics and their affordances: ChatGPT did not introduce new material technics. Rather, it is a new digital app that runs on the same physical devices we have used for years. This paper undertakes a re-evaluation of some postphenomenological concepts, introducing the notion of quasi-materiality to better understand the role that user interfaces (UIs) play in affording different stabilities in technological mediation. We propose the term "active User Interface" (aUI) to denote the specifics of how ChatGPT makes use of LLMs within its UI design to afford seamless, intuitive conversations with a quasi-other in what Ihde termed "alterity relations". Drawing inspiration from Peter-Paul Verbeek's work on the intelligification of our material world through (AI) technologies, our analysis leads to the formulation of a novel stability afforded through aUIs: "machinic embodiment stability". This concept sheds light on how ChatGPT's aUI integrates with our established habits of digitally mediated social communication. As the use of LLMs is expected to become increasingly prevalent, this provides a new perspective on the current evolution of the technological landscape.

1 INTRODUCTION

Large Language Model (LLM) apps like ChatGPT have taken philosophers' interest by storm. Yet, they seem hard to grasp with Don Ihde's postphenomenological conceptions. This has partly to do with the fact that it is still being determined what specific kinds of typical, (multi-)stable uses will emerge in our everyday praxis (Laaksoharju *et al.,* 2023, 33). In their foundational contribution, Laaksoharju *et al.* (2023, 33) note that although ChatGPT "and its ilk" seem to "change everything", they mainly change the way we "communicate" with our computing devices (Laaksoharju *et al.*, 2023, 32).

In our article, we explore how LLM chat apps challenge Ihde's original focus on material technics and his corresponding conception of materiality (Section 2): ChatGPT did not introduce new material technics, but runs on the same physical devices we have used for years. Especially for the discussion of affordances of LLM apps, it is thus necessary to analyze the seemingly informational user interface (UI) as part of that materiality. In order to allow this while preserving Ihde's premise of embodied perception, we propose the concept of quasi-materiality for app UIs (Section 3.1). We then continue to show that, as opposed to other types of LLM apps, the UI of ChatGPT affords a qualitatively novel form of conversational interaction (Section 3.2): the apps are turned into active counterparts (Verbeek); they become active User Interfaces (aUIs). These aUIs afford what Ihde termed alterity relations. Still, they are different in that they go beyond previous smart assistants by mirroring natural human conversation (Section 4.1) and by leveraging established habits of technologically mediated social interaction (Section 4.2): because we have habitualized using phones and chat apps in human-human conversations, ChatGPT's aUI can mirror these interactions as a quasi-other. Referencing Ihde, we propose terming this stability in technological mediation "machinic embodiment stability".

2 THE MATERIALITY OF DIGITAL DEVICES IN HUMAN-TECHNOLOGY RELATIONS

Postphenomenology allows micro-scale analyses of how technologies mediate our relation to the world. Its re-conception of intentionality posits that today's relation between subject and world can typically be formalized as a subject-technology-world relationship (Rosenberger und Verbeek, 2017, 12). Don Ihde (1979, 6-14, 55) originally distinguished four complementary forms of human-technology relations (embodiment, hermeneutic, alterity, and background relations).

Laaksoharju *et al.* (2023) laid the critical groundwork for a postphenomenological analysis of LLM apps by going through each of these relations: when technologies in *embodiment relations* work as expected, they become transparent. The technologies become a kind of prosthetic extension of our body through which we act and experience the world (Ihde, 2002, 7, 14). Embodied relations to chatbot-style LLM apps could "help users perform tasks and interact in the world", for example, by aiding users in suggesting well-formulated or briefer versions of what they want to say in digital conversations (Laaksoharju *et al.*, 2023, 37).

In *hermeneutic relations*, technologies mediate our experiences of the world by providing information or representations. When posing questions to LLM apps relating to our lifeworld, their answers can be seen as highly flexible ways of providing such information: we can ask them to reformulate or explain their answers or pose follow-up questions. "When asking ChatGPT and Bing AI in which of Ihde's relationships they are with their users, they both lean toward describing the relationship as hermeneutic" (Laaksoharju *et al.*, 2023, 38). This is consistent with postphenomenologists' stronger focus on hermeneutic relations regarding digital technology use (e.g. Wiltse 2014; Wellner 2020, 2023, Kudina 2021).

LLM apps like ChatGPT may, furthermore, become anthropomorphized "partners" in conversations, thus establishing *alterity relations*: "Ihde is clear that it is in the perception of the human, rather than a reciprocal relationship; the relationship does not require an 'other' but will suffice with a 'quasi-other'" (Laaksoharju *et al.*, 2023, 41). This type of relation will become our central focus in this article.

Finally, *background relations* denote situations where technologies are not directly related to but form contextual factors in the lifeworld – like air conditioning. As Laaksoharju *et al.* (2023, 43) note, background relations with LLM apps may be characterized by a sense of seamless integration that entices us to "no longer think about its role or even recognize its presence … Imagine your video calls being seamlessly translated, what you say being instantaneously backed up by illustrative facts and figures and your rambling being clarified with the help of assistive technology" (Laaksoharju *et al.*, 2023, 43; cf. Orland, 2023 for an empirical example).

For Ihde, the human-technology relations outlined above concern material *technics* such as machines, technical devices, and instruments that we see, touch, or handle in some form. In Ihde's exchange with phenomenologist Andreas Kaminski, he defends this conception of technology against a broader one that would conceive of Galileo's mathematization of the world (culminating in the famous claim that the book of the universe is written in the language of mathematics) as a form of technology as well (Ihde & Kaminski, 2020, 283). What emerges from this exchange is a certain premise in Ihde's original conception of postphenomenology: for Ihde, the *materiality* of technics is a central aspect of their mediating function; for mathematics to become mediating technics, it would need to materialize in the form of Personal Computers and other *devices and instruments* (Ihde & Kaminski, 2020, 275). Hence, a main point of Ihde's critique of phenomenology is that it fails to do justice to the specific role such material devices play in the mediation of perception: it was not just abstract mathematization that led Galileo to his claims, but his possession of the telescope as a *material device* (cf. Ihde 2016, 24-27).

Throughout his prominent discussions on digital technologies, Ihde (1979, 53-65; 2002; 2010) has analyzed them as *material devices*. Kaminski notes in the exchange, however, that it is unclear what in fact constitutes the materiality of digital devices, as they can be seen "on very different levels: electrophysical, machine language, logical, mathematical, high-level language." (Ihde & Kaminski, 2020, 281). For digital technology, it certainly seems too limited to focus on the mere material artifact and ignore informational and networking aspects. This has been prominently argued by postphenomenologists like Galit Wellner (2020, 110-111; 2023; cf. also Wiltse, 2014), who proposed to move away from Ihde-style conceptions of materiality, especially regarding hermeneutic relations with digital technologies.

While this is a possible approach, it also implies a move away from Ihde's decidedly *embodied* conception of subjectivity and intentionality (cf. Wellner 2020, 110-111), which we want to maintain. According to Ihde (and we follow him in this), "perception for postphenomenology is bodily and actional", and he underscores that postphenomenology "substitutes an embodied action for [disembodied conceptions of] consciousness or subjectivity" (Ihde, 2016, 130; cf. also 2010, 70; Mykhailov, 2020, 622-623). Hence, Ihde discusses virtual reality and cyberspace from a perspective that highlights the continued centrality of embodied perception. This becomes clear, for example, when he argues that virtual reality presupposes a "mostly motionless (seated) viewer" (Ihde, 2002, 9) and thus remains an imperfect embodiment compared to the ideal of multi-sensory bodily action (Ihde, 2002, 7-8).

In embodiment relations, technologies become a "quasi-extension entailing the here-body. Here, the very materiality of the technology allows this extendability" (Ihde, 2002, 7). However, it is crucial to understand that embodiment is relevant *beyond* the specifics of embodiment relations. Since subjectivity always involves embodied action, *all human-technology relations are embodied in some form*. From this stance, the anthropomorphized interactions with smart

devices in an alterity relation are embodied, as well; chatting with ChatGPT as if it were another person presumes bodily skills such as transparently using a keyboard (cf. Ihde, 1979, 7; 2010, 39) – and it presupposes that we communicate from the perspective of an embodied being. Hence, when Ihde (2010, 41-43) refers to a "human-technology-interface", this denotes a *material* conception of how bodies interact with devices and technology[1] – even for human-technology relations other than embodiment relations.

While this materiality does not *determine* how technologies are typically used (they remain practically multistable, cf. Whyte, 2015), the materiality of a device creates "a path of least resistance or of highest functionality which *may* be followed and often is followed. The instrument provides the condition of the possibility of an *instrumental style* through its latent telic inclination." (Ihde 1979, 43). This will become crucial in the next section.

For now, however, we want to highlight that this focus on materiality is also why Ihde's discussions of digital technologies remain somewhat un-intuitively focused on the screen (beside the keyboard). For example, his discussion of computerized writing apps describes an interaction with a "flexible" screen at a "station" that offers a "reading stability" (Ihde, 2010, 78-79) and he writes: "In the immediate use, the *screen* now becomes the [historical analogue of a clay] tablet, first in glowing green letters, then amber, now the full color range. In the composition process, the screen substitutes for paper" (Ihde, 2010, 76). What the screen affords in terms of latent telic inclinations or "capacities and constraints" (Ihde, 2010, 77) is that words can be just as easily produced as erased, which relocates "where and at what stage reflective editing can occur." (Ihde, 2010, 78)

Of course, computers being practically multistable means that they can do much more than erase text easily. They can transgress many relatively stable use cases by simply switching to another app.

> The computer station is not simply that of a typing station – it is a locus where human and world interact globally … With the internet one could say the 'screen speaks out to us' just as we to the screen. It is the interactive interface where the cyberworld is mediated … We remain situated and embodied human beings and our locus of this experience is at our *station* (Ihde, 2010, 79-81).

Ihde's (2010, 83) larger point here is that despite our increasing interconnectedness and the compression of time and spatial distance through IT and the Internet, humans *remain embodied and situated*, and it is the *screens* that mediate our relation to the world.

We agree with Wellner's critique that this predominant focus on the materiality of technology seems to limit postphenomenology's analytical potential. This is especially true with regard to digital devices and upcoming technologies like LLM apps and, as will become clear in the next section, the role of app UIs. At the same time, however, we write from a position that remains committed to Ihde's original embodied conception of subjectivity, and consequently choose to forgo Wellner's (2014, 2023) proposals to adopt a different ontological stance for alterity and hermeneutic relations.

However, it is then pivotal to note that ChatGPT does not introduce new *material technics*. Rather, it is a new digital app that runs (for many of us) *on the same physical devices we have used for years*. This poses a problem for an Ihde-style postphenomenological analysis that places the materiality of technics to the fore: when the revolutionary potential of ChatGPT is highlighted in public discourse (cf. Laaksoharju *et al.*, 2023, 33), it is precisely not the *material*

[1] Revisiting Deweyan and Merleau-Pontyan roots of postphenomenology, one may, instead, emphasize embodied habits as part of larger cultural and social techniques (cf. Gerlek and Weydner-Volkmann, 2022).

instrument that has changed, but rather what is displayed on our screens and how this changed the interaction with our computers.

Hence, in the next section, we propose to complement Ihde's conception of materiality with a conception of *quasi-materiality* that allows us to better capture the affordances of digital applications, while at the same time maintaining an embodied approach to micro-scale analyses of how *different* digital applications mediate our relation to the world *differently*.

3 THE QUASI-MATERIALITY OF (ACTIVE) USER INTERFACES

3.1 USER INTERFACES AND APP CHOICE: DANCING WITH TECHNICS

Given that, at least so far, the introduction of ChatGPT has not changed the digital devices we use to interact with LLM apps, we need to start our postphenomenological analysis elsewhere. Perception-wise, what lies beyond the material screen is *what is displayed* on it (as opposed to, e.g., the technical functionality of LLMs). One may assume that all of this is just digital information, but this would fail to make a crucial distinction between what can be named informational content (text, videos, virtual game worlds, etc) and the way it is presented to the user within different layers of user interfaces (UIs) – e.g. on a given laptop computer from the operating system's window management functionality via the design of browser app windows and tabs to the minimal design of the ChatGPT web app displayed within a browser tab.

The distinction between UI and informational content may not always be clear-cut, but for now, it suffices to note that the way in which, for example, gathering information on the weather forecast is mediated by the same laptop will change drastically depending on whether we browse a pertinent website or interact with ChatGPT. Hence, as Rosenberger (2013, 291) noted, technological mediation is also substantially influenced by apps with their user facing UIs.

For digital devices that do not offer different apps, this differentiation may legitimately be ignored, like Verbeek (2008) does in his discussion on obstetric ultrasound technologies. Here, we can reasonably assume that the material artifact and its user interface are constituted as one coherent technical object as part of intentionality (cf. Mykhailov, 2020, 619). When users can choose to change the form of interaction with technology fundamentally, however, apps and their UIs become central. As Ihde (2010, 50) highlights, technics are changed and shaped by the "tinkering" of users. With digital devices, this ceases to be tinkering in the traditional sense: it is the customary and intended use of today's computers and smartphones to have a wide range of choices between apps. Thus, when Ihde (2010, 50) generalizes this tinkering by saying that technology is embedded in the lifeworld as part of instrument development, we must add that, for digital technology, it is also embedded as part of our *trying out and choosing different apps*.

Learning whether or not we choose well is not straightforward. It is only through the use of tools that we understand their capacities and constraints (Ihde, 2010, 51). Engaging with technology is, therefore, to be seen as an embodied human-technology "interactive learning process" – like a "*dance*" between humans and technologies (Ihde, 2010, 52; Rosenberger 2013, 291; cf. Aydin *et al.* 2019, 334). We will return to this important idea of co-constitution.

While the materiality of digital devices is still central to retaining the Ihde-style stance of embodied perception, so is the forth-and-back in adapting the "flexible screen" to our needs by *using and playing around with different apps that offer different UIs*. Each of these UIs will afford different stable uses. As Mitcham (2006, 30) notes, Ihde rejects technological determinism, but concedes that technologies "predispose human beings to develop certain technolife forms over others". For our conception of quasi-materiality, this is one of two

defining aspects vis-á-vis materiality: *quasi-materiality denotes that informational UIs afford embodied (multi-)stable human-technology relations in similar ways that Ihde's materiality of technics does*. The other defining aspect (relevant in Section 4.2) is that we do not *mistake* their informational status for materiality.

In the next section, we aim to demonstrate that ChatGPT's UI inclines users particularly towards alterity relations. As we will show, this entails a substantial change in quality: since the interaction is more than ever a mutually active, conversational one, we propose the term *active* User Interface (aUI) to capture this change. As we will argue later-on, this reveals another aspect of embodiment: co-constitution is supported by an unquestioned embodied enaction of our digital communication habits.

3.2 ACTIVE USER INTERFACES: THE INTELLIGIFICATION OF TECHNOLOGIES

Previous LLM apps based on GPT versions 2 and 3 required the user to "prompt" the tool by entering the beginning of a text, which would then be continued automatically. ChatGPT changed this drastically in 2022 by presenting a UI that hides explicit prompting and, instead, *mimics electronic chatting*. Here, users provide keyboard-based or voice-based inputs and they receive "responses" as text on the screen or as generated speech. This UI affords human-technology relations to the app as a quasi-other. In turn, this invites modes of communicative and interactive engagement. As opposed to the instrumental relations to "tool-like" apps like a word processor or the traditional prompting of LLM apps, the new generation of UI design exemplified by ChatGPT inclines us towards that of an *alterity relation*: We quite literally ask ChatGPT to translate or paraphrase a paragraph; the primary mode of interaction afforded by the UI is that of a *speaking partner* (cf. Laaksoharju *et al.*, 2023, 41). As outlined above, this does not mean that embodied keyboard use becomes irrelevant or that "asking" ChatGPT about the current weather doesn't also form a hermeneutic relation (cf. Kudina 2021 for a take on the material hermeneutics of voice assistants). As opposed to looking at the outside thermometer or to browsing a weather service, however, ChatGPT enables an interaction in *natural-feeling* speech (cf. Laaksoharju *et al.*, 2023, 32). In offering these quasi-material capacities and constraints, the aUI of ChatGPT (as opposed to other LLM apps that do not conversationally engage the user) plays a much more active conversational role.

Peter-Paul Verbeek (2015, 217) used the term *intelligification* to describe how "smart" technologies transform our material environment into an increasingly interactive context (cf. Aydin *et al.* 2019). His examples include smart hospital beds, health measuring mirrors, and smart home appliances that can automatically evaluate our vital or environmental data without our intervention and draw conclusions or initiate actions. Here, our world is "augmented" or "immersive," which comes with social, ethical, and political consequences. This is why Verbeek (2015, 222) calls for a reflective "accompaniment" of this development.

While we will not discuss such normative aspects in this article, Verbeek's use of the term "intelligification" is helpful for interpreting the active role of ChatGPT. Verbeek uses it to describe how certain technologies are not just "smart" because they generate and evaluate data independently and initiate actions accordingly. Rather, he highlights the active social role of such technologies: "Our material world is developing into an active and intelligent counterpart, rather than a mute, stable and functional environment." (Verbeek, 2015, 218) This is an important characterization for certain types of AI systems: Through its UI, ChatGPT makes use of an LLM to propel digital devices towards becoming a convincing active *conversational counterpart*, rather than a flexible screen that affords a reading stability for text output. ChatGPT can nowadays not only perform writing tasks but enable users to use natural language in image and music creation tasks – simply by "asking for it".

Since the quasi-material aUI of ChatGPT inclines users towards an alterity relation, this can be seen within the larger trend of the intelligification of our environment. While Verbeek is mainly interested in the intelligification of the *material* environment, we argue that intelligification aptly describes a significant change in how we may interact with certain digital devices: where technics make use of LLMs to offer aUIs as *active conversational counterparts*, we cease to primarily encounter *devices* that can be interactive and smart. Digital assistants like Siri or Alexa have offered speech and keyboard input for quite some time now and their active role in mediation has been pointed out before (Kudina 2021). But they require *specific commands* from the user and often *communicatively* fail in frustrating ways. Such limits undermine the constitution of a quasi-other as an active conversational counterpart. On the contrary, LLMs enable apps that afford what feels like natural conversations (even though replies may be factually wrong). To better understand how far-reaching this new form of interactivity with aUIs is, ChatGPT's affordances and stabilities will be examined more closely in the next sections. This will make it possible to return to Verbeek's idea of the intelligification of our environment and draw new conclusions in light of aUIs.

4 AN ADVANCED VARIATIONAL ANALYSIS OF ACTIVE USER INTERFACES

ChatGPT is undoubtedly multistable, serving various stabilities as a reading, writing, creative, and communication tool. However, a distinct and noteworthy stability emerges when subjected to a variational analysis, so as to pinpoint the potential stabilities or consistencies applicable to a given technology. As mentioned above, ChatGPT's capability lies in independently generating speech. But this speech is imbued with "meaning"[2] as it can be adaptive to the context provided by the user or gathered from the internet. This creates the appearance of communicative understanding – a task traditionally attributed only to humans. This appearance of communicative understanding will lead us to the definition of the new stability referred to as "machinic embodiment stability" – a stability that, as we will see, "piggybacks" on our established habits of electronic communication.

Multistability is traditionally analyzed either as imaginative multistability (investigating from a first-person perspective) or as practical multistability (investigating a context from a third-person perspective; cf. Whyte 2015, 69). However, as de Boer (2023, 2270) notes in his discussion of Whyte (2015), what postphenomenology left unexplored is *why* certain stabilities become dominant and what makes it possible that stabilities are even established in the first place. Therefore, De Boer (2023) suggests complementing variational analyses with Gibson's concept of affordance. Following de Boer allows us to consider both the affordance character of devices and UIs within specific situational contexts, including the cultural settings of behavior. In this way, we can conduct an advanced variational analysis of stabilities by also paying attention to the concrete *practical setting* and the *situatedness* of technology use. Approaching it in this manner reveals that technologies always bring along specific affordances that change their appeal in different situations, enabling or facilitating different embodied cultural and social practices – something previously described as part of Rosenberger's (2013) relational strategies.

[2] This shouldn't be misunderstood as denoting human sense-making; one might even call it "dumb meaning" (cf. Bajohr 2023, 60). Cf. also Hasse's (2020, 156) interesting take on differentiating the collective meaning of words from personal, situative sense-making and learning. The illusion of creating situationally meaningful text is based on so-called attention heads of the LLMs that include *contextual information* to adapt the automatic text generation (feed forward function) to, for example, a previous conversation or to documents a user has uploaded (cf. Lee and Trott, 2023).

4.1 THE MIRROR EFFECT: FROM PROMPTING TO SOCIAL PRACTICE

ChatGPT responds to inquiries about its function by stating that it is indeed a *conversation tool* (Laaksoharju *et al.*, 2023, 31): it addresses our *social communication skills* by adopting natural language. Doing so affords our linguistic habits of electronically communicating with others by imitating digitally mediated human-human relations. To better understand this new quality of communication, it is important to note that ChatGPT is pre-trained on diverse datasets containing a vast amount of human speech in the form of texts. Based on this training, the LLM's so-called "feed-forward function" predicts how the text may continue, reproducing patterns, styles, and nuances present in human speech (cf. Lee and Trott, 2023). In this way, ChatGPT "*mirrors*" human communication and in its responses, we recognize the meaningful bearings present in these datasets and in the context we provide with our questions and inputs.

What comes with this is a deep *familiarity* with the communication style of and with ChatGPT: Alterity relations to aUIs like ChatGPT don't feel like communicating with a "robot other" (as was often the case with voice assistants like Alexa or Siri), but as a "quasi-other" that is familiar to us like other humans are. Here, aUIs rely on *us* to perceive certain affordances as "human-specific" and respond to them *as if* conversing with a human. Pre-LLM chatbots and AI systems work well for specialized tasks within limited situations (such as customer service, banks or restaurants). When confronted with other situations, they soon become dysfunctional. ChatGPT has no strict limitation in this sense – it has become what journalists have called an "anything tool" (Huang, 2023) by mirroring innumerable modes of natural language interaction.

This familiarity is co-constituted. We train ChatGPT with our input while it simultaneously introduces us to a process of *habitualization* (cf. Gerlek and Weydner-Volkmann, 2022): we habitualize new ways of having an engaged chat with ChatGPT while we gradually learn how far we can experience a productive and appreciative interaction. The dominant stabilities depend, therefore, on (1) the specific user interactions and (2) subsequent "adjustments" by engineers at OpenAI via updates to the underlying LLM.

As mentioned, the interaction has evolved away from the rigid prompt-response format, where users provided inputs to be continued by the app. Here, users engage in more natural and dynamic conversations, with *voice input* adding yet another layer of natural "fluidity". As users become more at ease, the interaction becomes less formulaic, showcasing the evolving nature of how people engage with LLM apps.

But why can we interact with ChatGPT so "naturally"? Returning to the differences between UIs and aUIs, we can recall that, with the rise of digital apps, UIs have become central in human-machine interaction. This is still true for ChatGPT, but here, the focus has shifted to creating more intuitive interactions. While UIs encompass a broader spectrum of aspects, including visual elements, design, and interaction methods, for ChatGPT *these UI aspects cede to the background as the app affords natural-feeling conversations. In the embodied interaction with a computer, the aUI essentially "becomes the conversation"* – a dynamic exchange of words or voice with a quasi-other rather than a material tool or instrument.

This evolution blurs the lines between material technics and aUIs, emphasizing the seamless integration of the same quasi-other into different everyday communication devices. It is a transition from physical device or tool use to predominantly *interactive experiences*. Thus, the role of technology here is to seamlessly integrate into human activities, making interactions more intuitive and less focused on the mechanics and specific commands of operating a device – a tendency that significantly furthers Verbeek's intelligification of our material environment.

Devices have a clearly visible and experiential mechanical and material side. For digital technologies, however, *UI*s are another user-facing point of interaction. When using the computer screen to write or read, we are well-aware of the fact that this is a feature of the

technology used. As we will show in the next section, with ChatGPT, we face a new tendency in and possibility of AI that builds on our habitualized social practices.

4.2 THE STABILITY OF "MACHINIC EMBODIMENT" AND THE QUASI-MATERIALITY OF AUIS

Today, we have reached a crucial point in communication: we have habitualized using telephones and other technics over a long period to interact socially with others. Internet-based technologies like emails, early chat programs like ICQ, but also the introduction of SMS and smartphone messaging apps have further established this trend. Today, we can choose between an abundance of ways to communicate with each other: we use social media, we use the computer to chat in parallel with desktop versions of our smartphone messaging apps, we make phone calls, send voice messages, etc. ChatGPT builds on these established social practices (cf. Rosenberger 2013) and uses the different modes and settings in which we interact socially to *mirror* them. Its flexibility in affording our communicative habits has – as we posit – a new stability as its precondition: we call this *machinic embodiment stability*.

"Machinic Embodiment" was introduced by Don Ihde to address "interactivity and the mutual learning and transformations" (Ihde, 2010, 47) in human-technology relations. Ihde introduced this expression to highlight that we "gradually 'learn' what the *material* forms of machinic 'embodiment' allow" (Ihde, 2010, 50). We propose to expand the term and conceptualize machinic embodiment as a practical stability that shapes our concrete interactions with aUIs like ChatGPT: ChatGPT's ability to mirror our communicative styles instantly should evoke *some* strangeness in us in the actual interaction. But – for the most part – it doesn't. On the contrary, we transfer our social attitude towards others to ChatGPT as a quasi-other. As we have shown, our ability to instantly adapt our social habits and behaviors in communication to the interaction with ChatGPT is based on the fact that we are already familiar with the concrete setting due to the various possibilities for technologically mediated social interaction with others. Instead of technology "merely" acting as a mediating point of contact with the other (in phone calls, etc.), here, the human other is missing and, in an alterity relation, replaced by an aUI. Still, we seamlessly transfer our established communication habits, such as using greetings, asking polite questions, and expressing emotions, into interactions with ChatGPT. *Machinic embodiment stability describes that users apply their habitualized digital communication practices effortlessly to human-machine interaction*.

To better understand how we can make this transfer so easily, it is worth revisiting the work of the most important philosopher of embodiment, Maurice Merleau-Ponty. In his writings on embodiment, we can see a late turn towards the idea of "intercorporeality", a concept that highlights that we are already embedded in an encompassing embodiment in every encounter with the other: Merleau-Ponty was at that time responding to the problem that one cannot prove that our counterpart is *conscious*. While he rejected such a consciousness-centered philosophy in general, he introduced "intercorporeality" to emphasize that our encounters with others inherently involve a shared embodiment presence or co-embodiment-presence, a dimension that he claims remains unquestioned and beyond dispute (cf. Merleau-Ponty, 1959, 1284).

Although machines, technics and aUIs do not exhibit a human-like embodiment, we can nevertheless observe that, in our interaction with ChatGPT, we increasingly behave as if we were dealing intercorporeally with a (social) other, the quasi-other. Since we want to avoid undue anthropomorphism here as carefully as possible, we see the term "machinic embodiment" as a way of precisely describing this stability of ChatGPT and comparable LLM chat apps: *machinic embodiment stability* then consists in a technology affording interactions with us as an equal conversational counterpart. Again, with the new stabilities of LLM apps like

ChatGPT, we need to consider that we deal with a new quality of alterity relations to technology.

As noted, these affordances tie into decades of habitualizing "intercorporeal" non-face-to-face electronic communication. As Thomas Fuchs (2024, 24) shows, with his approach to stress differences between human-to-human communication and human-technology communication, *communicative understanding* is based on two aspects in particular: *empathic understanding and semantic understanding*. ChatGPT's level of semantic "understanding" is remarkable: the context breadth and other features allow us to communicate with the program in a fluid and intuitive way, particularly in the voice chat function. Even though ChatGPT only *mirrors* the meaningfulness of human communication, its answers match our communicative expectations closely enough that playing along with machinic embodiment is generally accepted. Empathic understanding also reaches a new level with ChatGPT: when we approach ChatGPT with this kind of *as-if attitude*, its communication capabilities suffice our expectations for empathic understanding. We are used to technologically mediated communication to such an extent that we transfer habits of empathic communication to ChatGPT interactions and welcome its friendliness with only minor alienation – and may feel the latent telic inclination to type a "thank you" after a helpful response.

Moreover, concerning aUIs, *machinic embodiment stability* highlights the second defining aspect of our conceptualization of quasi-materiality. In the concrete interaction with ChatGPT, it is the *quasi*-materiality of its UI that affords our encounter with the aUI as a quasi-other – in this respect, quasi-materiality is closely linked to the concept of the quasi-other. But we are not deceiving ourselves here about the materiality of this other as a conscious someone or something "behind the device or screen"– we are very aware of the status of the aUI as a mere *quasi*-other. This aspect of quasi-materiality contributes fundamentally to the stability of the user's engagement with ChatGPT (especially when the output inevitably *does* become occasionally dysfunctional). We believe that this trend will strengthen as new applications for aUIs enter our lifeword.

Conceiving the interaction with ChatGPT in terms of machinic embodiment stability, thus, makes it possible not only to emphasize concrete aspects of experience and usage but also to offer concepts that help avoid some dangers: Turkle, Fuchs, and others warn, especially against the backdrop of social robots and therapy apps, that "machines become fake subjects" (Fuchs, 2024, 35) or "relationship artifacts" Turkle (2011, 30, 60-61, 152). This makes it all the more important to do conceptual work that helps to preserve the differences between humans and machines. Rather than accidental misconception (or even intended deception), we posit that it is *our willingness* to draw on established social practices and our recognition of ChatGPT as a *quasi*-other that turns the practice of treating a machine like a social entity into a productive interaction.

This should be recognized to critically reflect our willingness to engage in extended conversations, share personal anecdotes, or seek advice from ChatGPT, similar to how we might interact with humans. Highlighting the habitual, and therefore unreflected, dimension of our communication habits in exchanges with aUIs makes the necessity of raising awareness of this potentially destructive phenomenon evident.

We can now revisit the aspect of mediation. We have already seen that, unlike other technologies, ChatGPT's aUI affords social or human-like interaction through habitualized forms of communication. Furthermore, ChatGPT and similar LLM chat apps generally incorporate what Verbeek (2015, 221) called a social dimension, leading to the observation that social relations are not only technologically mediated – as is the case with many technologies –, but a technological shaping of the social or society in general can also be observed. Technologies have always mediated what it means to be human; technological advancements have propelled

humanity forward in numerous examples, such as the microscope, the telescope, the sonograph, etc. However, until now, we could not "interact" with these technologies as if with human others. Human-machine interaction has always existed in a relationship of "intertwinement" with activity on both sides. What is becoming apparent especially when continuing previous conversations on different devices is that, with aUIs, the *material technics* aspect is increasingly receding into the background.

As Ihde (1979, 59) has already stated, the "non-technical experience of computers is a living with the computer as active background"; there is a tendency to place "the actual hardware away from view altogether". Much of technology works best when it remains in the background, that is when technical devices become transparent: we forget about the glasses while looking through them at the world, and we forget about the keyboard while typing. However, while the keyboard or glasses clearly remain material technical devices, ChatGPT appears in the guise of the quasi-other: in communicative interaction, the *dynamic* of the alterity relation approaches that of the human-human alterity relation.

5 CONCLUSION

We have shown that the introduction of ChatGPT marks a significant change in human-technology relations. Investigating Large Language Model (LLM) applications like ChatGPT needs more than applying Ihde's postphenomenological concepts to understand these changes. We showed that, while his embodiment premise focuses on material technics and captures aspects relevant for assessing digital technologies, it fails to do justice to how digital apps in general and LLM apps in particular afford stabilities in human-technology relations. The specific role of materiality and embodiment changes when moving from technics to app UIs. Hence, we argue for complementing Ihde's conception of materiality with one of quasi-materiality that addresses how User Interfaces (UIs) can afford (multi-)stable human-technology relations. Based on this, we argue that LLMs enable UIs that afford intuitive conversational interaction in alterity relations. We propose the term *active* User Interface (aUI) to capture this development, and we contextualize it in terms of Verbeek's "intelligification" as a process in which objects and devices in our lifeworld become active conversational counterparts.

Based on ChatGPT, we illustrate that this novel stability ties into our communicative habits. We intuitively act on "old habits" of *social* interaction in human-machine interaction. We propose the term "machinic embodiment stability" to denote an aUI afforded stability in the interaction with LLM apps like ChatGPT that allows us to seamlessly integrate them with our social communicative habits and behaviors. Rooted in Don Ihde's concept of "machinic embodiment," this stability describes the machine's capacity to mirror human conversational skills and styles without the disrupting need to adapt one's language significantly (as used to be the case with previous smart assistants). It emerges from users' familiarity with various technologically mediated social interactions through telephones and messaging apps. Machinic embodiment stability allows users to engage with aUIs as equal conversational counterparts, fostering a "quasi-other relationship" by mirroring social practices. This sets them apart from LLM apps with UIs that require explicit prompting. At the same time, our conception of mirroring avoids presuming undue forms of anthropomorphism – we do not mistake aUIs for human others. Still, this stability implies sufficiency in both semantic and empathic understanding (Fuchs), denoting a new qualitative level of interaction. As technology evolves, we anticipate machinic embodiment stability to strengthen and proliferate as part of the intelligification of our lifeworld. Despite proposing aUIs as quasi-others, we want to highlight that careful conceptual work remains crucial to preserve the distinctions between interactions with humans and machines and to address potential ethical concerns, as anticipated in Verbeek's intelligification.

Hence, the rise of aUIs like ChatGPT indicates that the conversational aspect is becoming increasingly central in human-technology relations. While ChatGPT shows mostly very polite ways of communicating, there is an increasing number of reports about aUIs that touch the uncanny valley (cf. Orland, 2023). We propose postphenomenological terms to critically catch up with such tendencies, and we hope to have offered some additional conceptual tools to do so.

Data Access Statement

No new data were generated or analyzed during this study.

Contributor Statement

In each of the roles, both authors have contributed equally to this contribution.

Use of AI

This paper analyses LLM apps and, in particular, the use of ChatGPT. No AI generated text was used in the writing of the manuscript. ChatGPT 4 was used to provide a first draft for the abstract, which was edited in multiple steps by the authors.

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References

Aydin, C., González Woge, M., Verbeek, P.-P. (2019). Technological Environmentality: Conceptualizing Technology as a Mediating Milieu, Philosophy and Technology 32(2), 321-338, https://doi.org/10.1007/s13347-018-0309-3.

Bajohr, H. (2023). Dumb Meaning: Machine Learning and Artificial Semantics, *Image*. *Zeitschrift für Bildungswissenschaft 37*(1), 58–70, https://doi.org/10.1453/1614-0885-1-2023-15452.

de Boer, B. (2023). Explaining Multistability: Postphenomenology and Affordances of Technologies, *AI & Society 38*(6), 2267–77, https://doi.org/10.1007/s00146-021-01272-3.

Fuchs, T. (2024). Understanding Sophia? On Human Interaction with Artificial Agents, *Phenomenology and the Cognitive Sciences 23*(1), 21–42, https://doi.org/10.1007/s11097-022-09848-0.

Gerlek, S., Weydner-Volkmann, S. (2022). Self-Tracking and Habitualization. (Post)-Phenomenological and Pragmatist Perspectives on Reflecting Habits with the Help of Digital Technologies. In S. Gerlek, S. Kissler, T. Mämecke, & D. Möbus (Eds.), Von Menschen und Maschinen: Mensch-Maschine-Interaktionen in digitalen Kulturen (pp. 138–151). Hagen University Press. https://doi.org/10.57813/20220623-152405-0.

Hasse, C. (2020). Posthumanist Learning: What Robots and Cyborgs Teach Us About Being Ultra-Social. London, New York: Routledge.

Huang, H. (2023, August 23). How ChatGPT Turned Generative AI into an 'Anything Tool.' Retrieved from https://arstechnica.com/ai/2023/08/how-chatgpt-turned-generative-ai-into-an-anything-tool/.

Ihde, D. (1979). Technics and Praxis. Dordrecht, Boston: D. Reidel.

Ihde, D. (2002). Bodies in Technology. Minneapolis: University of Minnesota Press.

Ihde, D. (2010). Embodied Technics. Copenhagen: Automatic Press/VIP.

Ihde, D. (2016). Husserl's missing technologies. Perspectives in continental philosophy. New York: Fordham University Press.

Ihde, D., Kaminski, A. (2020). What Is Postphenomenological Philosophy of Technology? In A. Friedrich, P. Gehring, C. Hubig, A. Kaminski, & A. Nordmann (Eds.), Jahrbuch Technikphilosophie. Autonomie und Unheimlichkeit (Vol. 6, pp. 259–288). Baden-Baden: Nomos. https://doi.org/10.5771/9783748904861-259.

Laaksoharju, M., Lennerfors, T. T., Persson, A., Oestreicher, L (2023). What Is the Problem to Which AI Chatbots Are the Solution? AI Ethics through Don Ihde's Embodiment, Hermeneutic, Alterity, and Background Relationships. In T. T. Lennerfors, & K. Murata (Eds.), Ethics and Sustainability in Digital Cultures (pp. 31-48). London: Routledge.

Lee, T. B., Trott, S. (2023, July 31). A Jargon-Free Explanation of How AI Large Language Models Work. Retrieved from https://arstechnica.com/science/2023/07/a-jargon-free-explanation-of-how-ai-large-language-models-work/.

Merleau-Ponty, M. (1959). Le philosoph et son omre. In M. Merleau-Ponty (Ed.) Œuvre (pp. 1266-1290). Paris: Éditions Gallimard.

Mitcham, C. (2006). From Phenomenology to Pragmatism: Using Technology as an Instrument. In: Selinger, E. (Ed.). Postphenomenology: A Critical Companion to Ihde. (pp. 21-33). Albany: State University of New York Press.

Mykhailov, D. (2020). The Phenomenological Roots of Technological Intentionality: A Postphenomenological Perspective. *Frontiers of Philosophy in China 15*(4), 612–635.

Orland, K. (2023, December 15). These AI-Generated News Anchors Are Freaking Me Out. Retrieved from https://arstechnica.com/ai/2023/12/these-ai-generated-news-anchors-are-freaking-me-out/.

Rosenberger, R. (2013). The Importance of Generalized Bodily Habits for a Future World of Ubiquitous Computing. *AI and Society, 28*(3), 289–296.

Rosenberger, R., Verbeek, P.-P. (2017). A Field Guide to Postphenomenology. In R. Rosenberger & P.-P. Verbeek (Eds.)., Postphenomenological Investigations: Essays on Human-Technology Relations (pp. 9–41). Lanham: Lexington Books.

Turkle, S. (2011). Alone Together: Why We Expect More from Technology and Less from Each Other. New York: Basic Books.

Verbeek, P.-P. (2008). Obstetric Ultrasound and the Technological Mediation of Morality: A Postphenomenological Analysis. *Human Studies, 31*(1), 11–26. https://doi.org/10.1007/s10746-007-9079-0.

Verbeek, P.-P. (2015). Designing the Public Sphere: Information Technologies and the Politics of Mediation. In L. Floridi (Ed.) The Onlife Manifesto. Being Human in a Hyperconnected Era, (pp. 217–227). Cham: Springer. https://doi.org/10.1007/978-3-319-04093-6_21.

Wellner, G. (2014). The Quasi-Face of the Cell Phone: Rethinking Alterity and Screens. *Human Studies, 37*(3), 299–316. https://doi.org/10.1007/s10746-013-9304-y.

Wellner, G. (2020). The Multiplicity of Multistabilities: Turning Multistability into a Multistable Concept. In G. Miller & A. Shew (Eds.), Reimagining Philosophy and Technology, Reinventing Ihde (pp. 105–122). Cham: Springer. https://doi.org/10.1007/978-3-030-35967-6_7

Wellner, G. (2023). Material hermeneutic of digital technologies in the age of AI. AI & SOCIETY, 38(6), 2159–2166. https://doi.org/10.1007/s00146-020-00952-w

Wiltse, H. (2014). Unpacking Digital Material Mediation. Techné: Research in Philosophy and Technology, 18(3), 154–182. https://doi.org/10.5840/techne201411322

Whyte, K. P. (2015). What is multistability? A theory of the keystone concept of postphenomenological research. In Technoscience and Postphenomenology: The Manhattan Papers (pp. 69–81). Lexington Books.