



Introduction: Affectivity and Technology - Philosophical Explorations

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1 Introduction

In connecting embodied, embedded, extended, and enactive (4E) cognition with affectivity and emotions, the framework of “situated affectivity” has recently emerged. This framework emphasizes the interactions between the emoter and the environment in the unfolding of our affective lives (Colombetti and Krueger 2015; Griffiths and Scarantino 2009; Piredda 2022; Stephan and Walter 2020). In the last decades, there has also been a growing interest in the philosophical analysis of technology and artifacts (Houkes and Vermaas 2010; Margolis and Laurence 2007; Preston 2022). The aim of this special issue is to foster the interaction between philosophical reflections on affectivity and those on technology, further developing this fruitful borderland (Clowes et al. 2021; Colombetti 2020; Fasoli 2018; Krueger and Osler 2019; Heersmink 2018; Piredda and Candiotta 2019; Piredda 2020; Viola 2021).

The framework of situated affectivity aims to focus on the contributions of the external environment, both physical and social, to our affective lives (Griffiths and Scarantino 2009). Below we briefly introduce some of the concepts and proposals made in the situated affectivity literature. From a diachronic point of view, environmental resources contribute fundamentally to the development of our affective repertoire, i.e., the set of dispositions and affective states that characterize us. From a synchronic point of view, these environmental resources are involved in the management

and development of individual emotional episodes. To argue that affective phenomena are situated is to say that they are dependent (in the weaker version) or partly constituted (in the stronger version) by elements of the external environment, or by bodily interaction with them. The theses attributable to situated affectivity range from weaker proposals about the role that certain entities, for example “affective scaffolds” (Colombetti and Krueger 2015), play in the development and management of our affective experiences, to more challenging theses concerning the alleged ontology of extended affective states, such as extended emotions (Krueger 2014; Stephan et al. 2014).

Inspired by Kim Sterelny’s idea of a “scaffolded mind”, Giovanna Colombetti and Joel Krueger (2015) propose to introduce the concept of “affective scaffolding” to account for the way in which agents manipulate the environment around them also for affective (and not only cognitive) purposes. Furthermore, the concept of “niche” has also been extended to the field of affectivity, where affective niches are defined as “self-styled environments, providing the developmental conditions for affective states to take shape and thrive” (Colombetti, Krueger, Roberts 2018, p. 1). Affective scaffolds can be distinguished into material supports and interpersonal supports, and in both cases are characterized according to certain dimensions, identified by Sterelny (2010) in the context of cognitive scaffolds. These dimensions are the degree of trust and reliability, the personalization and consolidation of the bond with the individual, and finally, only in some cases, the degree of sharing with other agents. Many examples of affective scaffolds are in the domain of technology, particularly digital technology. Think of the activity of scrolling through the photos stored in our smartphones, evoking memories and feelings related to them. The smartphone is undoubtedly an interesting example of affective scaffolding, for its capacity of storing many sorts of content that are important to us, from our favourite music to photos, to personal messages, as well as of providing emotional contents through social media. We often turn to our smartphones for affective reasons, even if

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only to fight boredom and search for small informational or social rewards.

There is no need, however, to invoke information technology to find examples of affective scaffolding or support: other fitting examples may be clothes, which we choose according to our mood and sometimes to achieve a certain effect on it, paying attention to colours and textures, or accessories, such as bags, identified as real instruments of mood regulation (Kaufmann 2011). Instead, among non-portable material objects we find cinemas, concert halls, stadiums, and museums: these are all environments that we choose to visit (also) because of their effect on our affective states.

The case of the relationship between a musician and their musical instrument is a good example of a deep interconnection – material and affective – between an agent and an environmental resource. Musicians express their affective states through the use of the instrument, and this seems to represent an extension of the musician’s body, which in effect adapts to it over time. Something similar can be said of the kitchen for cooks or the tennis racket for tennis players. The topic of incorporation, related to the phenomenological tradition, is well systematized in Colombetti (2016).

Colombetti and Krueger’s (2015) proposal, however, is not only limited to material supports; affective scaffolding is also identified in the interpersonal realm, based on the relationships we choose to have and turn to in certain circumstances. We rely on relatives and friends to lift our moods or to let off steam, to spend time in peaceful company, because we expect some particular affective dynamics from them. Sometimes we modulate our affective states according to the kind of people we are with, we could say according to the “affective tone” of the group. We adjust, for example, to the wit and humor that works best or is most appropriate in a certain group, thus achieving an effect on an emotional level (feeling accepted or instead judged for being inappropriate). Interpersonal scaffolds can also be distinguished according to the dimensions of trust or familiarity and involvement/personalization, as in cases where we have a fixed appointment with a friend to go to the bar at a certain time or even just to phone each other.

The last case considered by Colombetti and Krueger (2015) is affective scaffolding that is shared by a group of people (von Scheve and Salmela 2014). This is the case of religious, political, geographic, sport, and occupational symbols and environments: affective scaffolds to which entire communities turn, sharing deep emotional experiences, which can sometimes take the form of collective emotions. Finally, according to Colombetti and Krueger, “in order to understand and explain affective phenomena we need to consider the ways in which agents ‘engineer’ their affective environments – i.e., create affective niches – and in

doing so allow these environments to influence their affective states on an ongoing basis” (2015, p. 1160).

A further proposal that fits into this landscape is to define some affective supports as “affective artifacts” (Piredda 2020). This proposal has the advantage of relying on an extensive supporting literature regarding the notion of “artifact” (Preston 2022) and “cognitive artifact” (Fasoli 2018; Heersmink 2013; Norman 1991) and to connect directly to the literature on philosophy of technology. Affective artifacts are material or abstract objects (e.g., a song) that, for their designated purpose or instead only for the development of an idiosyncratic function (say, by serendipity) are habitually used by an agent to regulate his or her affective life. Objects specifically designated for this purpose include photo albums, wedding rings, souvenirs, and children’s stuffed animals. Any object, however, can become an affective artifact without being designated for that purpose: just think of the cases in which we become attached to an object that is completely insignificant from an economic point of view, and we keep it for a long time, just because we have attributed to it a high affective value linked to some memory. Of course, the most representative examples of affective artifacts are to be found among personal objects, and this is also why the importance of these objects in reconstructing one’s autobiographical narrative, and in consolidating a sense of self, has been emphasized (Candiotto & Piredda 2019; Heersmink 2018; James 1890; Piredda 2020).

The main difference between affective scaffolds and affective artifacts lies in the more specific and limited nature of the notion of artifact compared to that of scaffold. This can be seen as an advantage or a disadvantage. On the one hand, talking about artifacts per se excludes the possibility of considering the support of other social agents, which is instead included in the analysis of affective scaffolds. On the other hand, referring to a more specific and theoretically defined notion allows to avoid some aspects of vagueness and indeterminacy that the notion of scaffold could raise. Given its breadth, it is in fact difficult to give a precise ontological characterization of the concept of “scaffold” and in general of “support”. The discussion on these points is still open and some reflections in this sense can be found in Colombetti (2020) and Saarinen (2020).

Back to the main topic of our special issue, there are some general themes and topics that emerge from the published articles. We think that these themes and topics give a substantial overview of the direction the literature is currently taking. A first line of development regards the relationship between technology, affective memory, and the self. Places and environmental resources help us situate our selves in the past as well as in the future. A second line of analysis is about the way digital technology, including social media and AI, transform our affective states. Most people in the

21st century spend many hours a day behind their screens, and this significantly impacts what and how we feel. A third theme concerns the connection between technology, affectivity, and art. Approaching technology from an affective lens paves the way to the convergence of questions of aesthetics into the philosophical reflection on technology. A fourth line of analysis is about the assistive and therapeutic role technology plays in our affective lives. Chatbots, for example, can be used as a surrogate therapist in particular moments of our lives, like when we are dealing with grief. A fifth line of thought regards the value of the contribution of technology to our life. Is it always beneficial, as most of the 4E literature seems to assume (Aagard 2021), or is the time ripe to also consider the harmful aspects of technology (Fasoli 2021).

Let us end with a final general observation, before dedicating some space to summarizing the papers in an organized order. While some articles focus on theoretical aspects of the relationship between affectivity and technology, and they are neutral despite the positive or negative role played by artifacts in affective dynamics, others emphasize the positive role of digital technologies in these dynamics. Finally, some articles focus on the “dark side” of digital media, namely on their affective problematic aspects. Often, to explain these latter phenomena the authors introduce new concepts such as “digital vulnerability”, “digital slot machine”, “attentional scaffolds”, “emphatic scaffolds”. Taken together, they represent a conceptual map that we hope and think in the coming years will be helpful in addressing the specificity of digital technologies, both for philosophers and for regulators.

2 Overview of the Contributions

The contributions are categorized under several (overlapping) themes, which are “affect, memory, and the self”, “social media, digital technology, and AI”, “art and aesthetics”, “assistive and therapeutic technology”, and “harmful technology”. Below we briefly summarize the papers of this special issue.

2.1 Affect, Memory, and the Self

In his paper, *John Sutton* reflects on the intimate connection between memory and affect, and the role of places in it. He proposes to consider places as (sometimes) parts of distributed vehicles of memory and emotion. This is an original and innovative proposal built at the intersection of many philosophical domains: philosophy of memory, aesthetics, philosophy of mind and of cognitive science. In the paper, Sutton offers a thoughtful philosophical reflection on

the role and place of the distributed cognition framework in the philosophy of cognition, also considering the most recent developments in it, that focus on the dark sides of scaffolding, niche-construction, and cognitive extension (cf. mind-invasion). Finally, Sutton appeals to an aesthetics of superposition in order to interpret the way in which we humans can deal with the memory of places with a difficult and heterogeneous past.

In their phenomenological analysis, *Giovanna Colombetti* and *Juan Diego Bogotá* point out that the self is both embodied and situated in a socio-cultural environment, consisting of other humans and technological objects. The specific ways we interact with our environment (e.g., walking up the stairs, playing piano, tying your shoelaces) are sedimented into our bodies. They refer to this as “situated body memory”, which is important to our selfhood, giving situations and surroundings a feeling of familiarity. They also argue that objects in our environment help us to project ourselves into the future. For example, when entering a lecture room before a lecture, the equipment (e.g., lectern, computer, screen) reminds one of what will happen or what is supposed to happen in the future. We are creatures that understand ourselves in relation to the future and objects in our environment help us to do that.

2.2 Social Media, Digital Technology, and AI

Gen Eickers adopts a “research from inside the margins” perspective and analyzes how social media enables the feeling of belonging for LGBTQ+ people. In the first part, the author describes the feelings of belonging and its specificities in the digital space. In the second part, the author discusses the results of a qualitative study, consisting in some interviews that were conducted to explore the lived social media experiences of LGBTQ+ people. According to the author, a sense of togetherness and the experience of community are two of the most important outcomes created by social media in LGBTQ+ people.

Similarly to some other authors of this special issue, *Giacomo Figà-Talamanca* focuses on the problematic aspects of the relationship between affectivity and digital technologies. He analyzes the notion of digital vulnerability as a specific case of vulnerability, a concept that has been employed by bioethicists for a long time. He argues that digital vulnerability is engendered by social media and specifically by recommender systems, which he addresses by drawing on the frameworks of scaffolded cognition, scaffolded affectivity, and of mind invasion. Digital vulnerability is strictly connected to the power imbalance that arises between internet users and designers, which in turn arises from an epistemological imbalance. In fact, by gathering information about user preferences, behaviors and choices, digital platforms

become able to literally engineer users' affectivity, and to act as boundary-blurrier between users' minds and the minds of others (i.e., designers).

Carmen Mossner and *Sven Walter*'s article starts with the acknowledgment of the "media-empathy paradox". According to this paradox, some empirical evidence suggests that those technologies that are explicitly designed to foster sociality actually diminish people's interpersonal capacities. The authors' aims are twofold. The first is to provide some possible explanations of the empathy diminishment among internet users' by first analyzing the structural differences between technologically mediated interactions and offline ones. The authors' second goal is to identify and suggest some design changes in online platforms that may alleviate these negative consequences. One possibility considered by the authors is the creation of digital nudges working as emphatic scaffolds actively shaping the minds of social media users.

Lucy Osler analyzes the relationship between digital technology and envy. In the first part of the article, she sketches a concise but enriching picture of envy, while in the second part she focuses on digital technology and on how it "provides a fecund environment" for the comparison with others. According to her, digital technology makes envy both more frequent and stronger and can direct it towards specific aspects of others as well as of ourselves. In fact, the strong negative comparison that social media systematically elicit among users can actually be directed also at different versions of the self, namely it can be self-directed. The phenomenon of self-envy does not necessarily entail technologies, but is fostered by the possibility of offloading information about the self that they provide.

Marco Viola focuses on the neurocognitive mechanisms underpinning the perception of two cultural artifacts that have become popular in the digital age, namely emoticons and facial emojis (EmoT/J). Specifically, he addresses the following philosophical question: does the empirical literature vindicate the status of emojis and emoticons as cultural artifacts that vicariate our natural faces? In this context, an important role is played by the human predisposition to strongly recognize faces in external patterns of stimuli, which is called pareidolia. In the article, the analogy between EmoT/J and actual faces is investigated with a focus on the following aspects of face perception: the expression of emotions, the cultural norms surrounding them, non-affective social information and attention prioritization. Viola effectively shows the aspects for which emoticons seem to play the role of "face avatars" and those for which they differ.

In their article, *Cristina Voinea*, *Lavinia Marin* and *Constantin Vică* introduce the notion of "attentional scaffold", that can be both beneficial or detrimental to attention. They discuss the case of social media platforms, which they

consider as a kind of digital slot machine. Or otherwise put, as a hostile attentional scaffold, mainly because of their business model. As a matter of fact, as slot machines try to hook people with the promise of a monetary reward by exploiting several design expedients, social media algorithms are optimized for engagement and to keep users engrossed and scrolling. The authors also explore the relationship between attention, emotion, and epistemic states, both at the individual level and at the collective level. Specifically, they analyze the phenomenon of digital outrage, in order to show how negative emotions capture attention.

2.3 Art and Aesthetics

Elisa Caldarola and *Javier Leñador* analyze installation art framing it in the literature on situated affectivity and particularly on affective artifacts. They do so both from a theoretical point of view and also analyzing some cases of installation art. The authors start from a discussion on the connection between artworks and affect as well as a presentation of the ontology of installation art. Their central thesis is that some installation art is genuinely affective and that some of those works can expand our knowledge of our affective lives and contribute to the construction of our identities.

Marta Caravà and *Marta Benenti*'s article addresses a central concept in 4E cognition, namely the notion of "affordance". Specifically, they focus on the notion of "affective affordance" introduced by Krueger and Colombetti, that refers to those affordances that allow people to regulate their emotions. For instance, someone may put on a heavy metal song in order to vent her anger against something that happened and she chooses that song because it affords that specific affective state. According to Caravà and Benenti, the original definition provided by Krueger and Colombetti leaves out those cases in which the environment plays a role in affective processes without eliciting or modifying directly an affective state. They develop a more comprehensive account of affective affordances.

Vinicius Jonas de Aguiar analyzes a specific set of affective artifacts, namely algorithms and recommendation systems on music streaming services, curating the music we listen to. Building on the framework of situated affectivity, he argues that such algorithms transform how music is experienced, specifically focusing on the way algorithms generate affect-based playlists. Such playlists cluster songs with similar expected affective responses in the listener. When listening to such algorithmically-generated playlists, we delegate our choice of music to an algorithm, in that way mediating our experiences of listening to music.

After having evaluated the possibility of considering works of art as examples of affective artifacts, *Enrico*

Terrone introduces the notion of “experiential artifact” in order to describe the category of art. This paper sits at the intersection of aesthetics and philosophy of technology by offering an original classification of works of art, comparing them both with technical artifacts and with cognitive and affective artifacts. Experiential artifacts are here defined as technical artifacts that perform the function of generating experience in virtue of their structure. The notion of experience is discussed and the varieties of experiential artifacts as well as the theoretical advantages of this notion are highlighted.

2.4 Assistive and Therapeutic Technology

Laura Candiotta and *Mog Stapleton* argue that the affective experience of employing Assistive Technology (AT) is crucial for the integration of this technology into the user’s routines. They claim that this integration is a matter of habituated affective interactions with AT, thereby rejecting the functionalist approach underpinning most extended mind theorizing. Instead, they argue, the phenomenology of the feeling of agency is what we need to focus on. Importantly, the affective scaffolding perspective can better explain the role of the feeling of agency when learning to use an AT. Thus, for example, when learning to use Voice Dream Reader, an AT that translates text to spoken language, we should not focus on how the functions of the device relate to the cognitive processes of the user. Rather, we need to focus on the phenomenology of the “productive struggle” of learning how to use the device. Candiotta and Stapleton point out that a “phenomenal transformation” enabled by AT as an affective scaffold discloses to the user a new world of possibilities that were previously inaccessible.

Regina E. Fabry and *Mark Alfano*’s paper conceptualizes and evaluates the relationship between deathbots and their users. Deathbots are chatbots that imitate the vocabulary, style, personality traits, and even memories of a deceased person. They are trained on a corpus of text that was created by the deceased person. These deathbots are characterized as affective scaffolds, influencing and regulating processes of grief. The scaffolding relation is analyzed in terms of several dimensions, including trust, robustness, mineness, individualisation, and the incorporation of the deathbot into the user’s overall affective experience. Fabry and Alfano also point out several normative issues, such as the will to be remembered, issues to do with consent and privacy in relation to the text from the deceased person, inaccurate or false output of the deathbot, and developing an emotionally unhealthy relation to the deathbot.

Marco Facchin and *Giacomo Zanotti* first discuss the nature of an affective artifact and then analyze to what extent AI-based technologies can be considered as affective

artifacts. They coin the phrase “affective artificial agent”, which are artificial agents explicitly designed to interact with us in an emotion-salient way. They focus on two affective artificial agents, namely Pepper and Replika. Pepper is a social robot and Replika is an avatar-based chatbot. These are affective artifacts but differ from the one’s discussed in the literature (such as teddy bears, wedding rings, and photo albums) in that these affective artificial agents display a specific form of agency. This prevents them from being experienced as extensions of the self. The authors also point out that we tend to anthropomorphise these systems, which can generate some normative concerns.

Joel Krueger and *Tom Roberts* explore the affective phenomenology of human-AI interactions. They draw on fictionalism to analyze how we relate to AI technologies, including chatbots like Replika. On their view, interactions with chatbots involve a practice of imaginative pretense, which is to say, a make-believe in which the artificial agent is attributed a life of its own. When users develop a close relationship with a chatbot (or some other artificial agent), they pretend it is a fictional character. Krueger and Roberts claim that the depth of emotional investment into artificial agent like a chatbot is proportional to the extent to which they attribute temporal endurance to that agent. So, the more a user is emotionally invested in an artificial agent, the more he or she will imagine that the artificial agent has a temporal existence. When these systems become more sophisticated and autonomous, we will attribute to them a purposive, active, and concerned form of life that continues when we’re not interacting with them.

Jędrzej Piotr Grodniewicz and *Mateusz Hohol* argue that therapeutic chatbots can be characterized as cognitive-affective artifacts. On their view, cognitive artifacts are artificial devices contributing to performing a cognitive task, whereas affective artifacts are objects which have the capacity to alter a subjects’ affective state. Therapeutic chatbots have an impact on both the cognitive and affective states and processes of their users. These chatbots are designed based on the principles of cognitive behavioral therapy (CBT). According to CBT, modifying one’s patterns of thinking and information processing can change one’s affective states. Through dialogue, these chatbots can ask questions and give prompts that encourage their users to re-analyse or re-assess certain situations or feelings such that it modifies their patterns of thinking and thus also their affective states. The authors point out that whilst CBT-based chatbots are promising and can be helpful for their users, they are not proper therapists.

2.5 Harmful Technology

In his analysis on how public statues wrong, *Alfred Archer* offers an original account of public statues as affective technologies and in particular as examples of affective artifacts that can wrong some people and be strongly defended by others. This proposal is intended to further the understanding of statues as forms of speech by offering new theoretical instruments to understand the role and the effects of public statues, a matter of both philosophical reflection and public debate. In this paper, philosophical reflections from speech act theory, the framework of situated affectivity with its embodied, scaffolded, extended views on the mind converge with the considerations on oppressive things and hostile scaffolding, contributing to the recent debate on affective injustice.

David Spurrett's analysis focuses on cases where affective technology exploits or manipulates the agent using it. In order to do that, he engages in the discussion of several case-studies, very different from each other, namely the cigarette, casinos and electronic gambling, and high-heeled shoes. What these cases have in common is the fact that they concern objects and activities explicitly engineered in order to promote a certain behavior that has negative consequences in the ordinary life of many people and show how even simple technological artifacts, like a shoe, can embody non-neutral values in society.

Jussi A. Saarinen elaborates on the process of affective incorporation of firearms by many people, giving a thoughtful account of how this process has to do with the acquisition of power and a feeling of enhanced safety. His research questions concern the nature and the origin of these bonds and their connection to feelings of power and security as well as how these feelings relate to the real-world effects of gun carrying. The key is that guns, like other artifacts, can be integrated into the feeling body, and in this way they become integral parts of their owners' embodied experience.

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