Digital Affect

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The concept of "digital affect" may seem paradoxical due to our accustomed tendency to dissociate technology from emotion, abstract virtuality from embodiment, and the binary logic of data from the messy entanglements of feeling. This assumed split between technology and affect is rooted in an entrenched (and often gendered) Cartesian mind-body dualism that has effectively shaped our relationship with digital technology. This dissociation of technology and affect already came under pressure by George Simondon's 1964 conception of "transindividuality" in collective and affective technological relations (285) and, more recently, in the course of posthumanist re-conceptualizations of human-technology entanglements (Braidotti; Hayles). At the same time, a renewed theoretical interest in affect has urged us to recenter the body as well as non-cognitive dimensions of individual and collective experiences (Massumi; Ahmed; Ngai).

That posthumanism and affect theory emerged more or less simultaneously may be an indicator for their conflated interest: In the digital world, virtual extensions of experience that are perceived (often mistakenly) by many as disembodied prompt us to consider how our "being in the world" as humans is literally affected by technology. Thinking about digital affect, therefore, means to zoom in on posthumanist ideas especially through the prominence it places on *collective* structures and practices of world-making, and interaction, as it decenters human subjectivity and agency in its conception of relational, processual, and systemic processes of exchange and co-dependence. While much discussion has taken place concerning the difference between "affect" and "emotion," I will follow a widely accepted notion of affect as comprising a wider range of physical and non-cognitive responses, such as emotion, sensation, and habit. A perspective on digital affect foregrounds embodied experience in our use of and interaction with digital technology, more specifically, the media affordances, politics, and ethics of digital instrumentalization and circulation of affect, for example in the context of the attention economy, the viral dynamics of social media, and AI-generated and -retrievable affect. The category of digital affect thus highlights key components and requirements of collective agencies in technological arrangements in emphasizing what I will address as a) digital affects and network effects, b) invisible infrastructures and the "digital

banal," and c) artificial intelligence and black box affect. To conceptualize digital affects through the lens of network effects means to highlight the formation of collectivities through circulating network dynamics, as for example through dynamics of virality. Such collective transmission and exchange of affect often takes place in hidden infrastructures that, due to their abstraction, render individual interaction with digital media highly habitualized, thus running danger of obscuring and thus misrecognizing collective structures of self-forming. To focus on collective patterns of digital practices also entails thinking critically about the ways in which artificial intelligence reproduces affective posthumanist relationalities. By bringing into dialog the "affective turn" with theories of the digital I aim to confront the conspicuous absence of affect-related discourse of the liberal autonomous self in much tech discourse. I will do so by highlighting the aesthetics and politics of affect in human-machine relations of the digital era. It may be exactly the blind spots of digital affect that help to illuminate the correspondences and productive potentials of both approaches to future conceptualizations of digital collective agencies.

Digital Affects and Network Effects

Digital culture is largely organized in and through networks, from material server infrastructures to relational databases in semantic webs and "friendship" networks on social media platforms. "All networks afford connectivity" (114), Caroline Levine holds, thus regarding networks as specific forms and as "defined patterns of interaction and exchange that organize social and aesthetic experience" (113). Networks paradigmatically embody what Stephen Ahern calls "the most fundamental insight of affect theory: that no embodied being is independent, but rather is *affected by* and *affects* other bodies, profoundly and perpetually as a condition of being in the world" (4–5). This double logic of affect is prominently pronounced by Gilles Deleuze in his thoughts on Spinoza, according to which affect is expressed in the relationship between subject and object, as determined by the "capacity for being affected," which shows both in the "power of acting" and the "power of being acted upon" (27). Based on Aristotle's description of physical affect as an "accretion of force-relations," as it "arises in the midst of *in-between-ness*" (Seigworth and Gregg 1); affect is "what sticks, or what sustains or preserves the connection between ideas, values, and objects" (Ahmed 29). Especially in the case of mobile media practices, such relational forms of media use have become "tacit and embodied knowledge, which can be performed consistently until they become a routine and manifested in practice" (Ramella et al. 7). Wendy Chun's understanding of digital media as "habitual media" emphasizes their embodiment in collective network practices, defined as "imagined synchronous mass actions [that] create an imagined community in which the multiple 'I's are transformed every morning into a 'we' that moves together through time" (*Up-*

dating 26–27). Such a perspective on collective digital media practices can function as a corrective to the pervasive neoliberal narrative of individual choice, personalization, and strategic self-making through digital apps. Instead, what is brought to the fore are the affective affordances of digital media that powerfully engender collective patterns of experience and agency. These habitualized practices are inscribed into the user interfaces of digital media devices on the basis of datafying selves into "algorithmic identities" based on marketable categorization systems (Cheney-Lippold 5–6; also see Pasquale). This is the dystopian component of digital collective agencies, in the sense of corporate data "collections" to enable predictive monetization of habitualized affect in the attention economy.

This complex conflation of digital collective action and experience via habitual embodiment turns the digital into a specifically relevant field for studying affect. The complexity of circulating practices, ideas, and signs, of messy entanglements between objects and bodies renders digital network practices, which by definition consist of multiple cross-relations, highly affective practices. At the same time, the network seems to be a valid conceptual framework for describing affect as a semi-autonomous structure of circulating forces. It is this double perspective between *affects of networks* and the *network as a model for affect* that Kathleen Stewart brings together in her ethnographic description of "the net" as

> at once abstract and concrete, […] both a distant, untouchable order of things and a claustrophobically close presence […]. It's as if a net has grown around a mutating gelatinous substance. It's also as if the net is full of holes, so that little pieces or whole blobs of things are always falling out of it and starting up some new thing on their own. It harbors fantasies and fears. It spawns trajectories. It sets up a quick relay between things. It induces both rage and the softly positive sense of being connected and so somehow safe (or not, but at least "in it together"). There's a promise of losing oneself in the flow of things. But the promise jumps in a quick relay to the sobering threats of big business, global warming, the big-box corporate landscape, the master-planned community, the daily structural violence of in-equalities of all kinds, the lost potentials, the lives not lived, the hopes still quietly harbored or suddenly whipped into a frenzy. Either that, or the promise of losing yourself in the flow becomes a dull, empty drifting that you can't get yourself out of. (87–88)

Stewart's depiction of "the net" refers to commonly associated features of the network, such as the "untouchable order" of abstraction and randomness, the "close presence" of the small world, the postmodernist "promise of losing oneself" in rhizomatic diffusion, a reconfigurational logic of self-organization as the net "start[s] up some new thing on their own," the emergent properties of "spawn[ing] trajectories," the "sobering threats of big business" as concentrated power enabled by preferential attachment, and the idea of exclusion in the "net [as being] full of holes."

Yet, in Stewart's description, these network features are framed not as abstract, systemic properties but rather as *affective* structures, as they reflect ways of relating to, feeling about, and being affected by network affordances. While the relationality of networks encourages circulating affect, networks can also become objects with which we form affective relationships. Promises of connectivity themselves can become objects of desire as well as generating collective feelings of dread, pessimism, and despair, as Luke Fernandez and Susan Matt have shown with regard to the telegraph network in the late nineteenth and early twentieth century (258).

This affective ambivalence toward networks can be considered a form of "cruel optimism," when the desire for accelerated connectivity becomes "an obstacle to your flourishing" (Berlant 1), an attachment, or rather a web of attachments that proves stifling, overwhelming, and oddly dehumanizing. In fact, our affective relations with networks and, as a consequence, their cultural semantics, are anything but neutral, but often emotionally polarized. As Elisabeth Schäfer-Wünsche notes, networks "simultaneously invite narratives of utopia and of dystopia" (202). This observation is noteworthy since it suggests that networks "invite narratives," not only because they are cultural formations themselves, but because they induce a strong embodied response, despite, or because of, their abstract nature. "'Network'," Schäfer-Wünsche concludes, "thus emerges as a highly loaded structure—as quite the opposite of an 'innocent' formation" (219). Since networks always verge on the border between connect and disconnect, participation and hegemonic power, freedom and control, creation and destruction, they evoke and embody the very vulnerabilities of the relationship between individual and collective. Whether we are attached to "the promise of losing [ourselves] in the flow" or whether this promise "becomes a dull, empty drifting that you can't get yourself out of" (Stewart 88), the metaphoric opposition of "the chain of triumph" and "the web of ruin" (Galloway 281) in our conception of networks has been negotiated in a long history of narratives since antiquity (Gießmann; Schober).

As Galloway and Eugene Thacker describe the inherent contradiction of networks, "the self-regulating and self-organizing qualities of emergent networked phenomena appear to create and supplement the very thing that makes us human, yet one's ability to superimpose top-down control on that emergent structure evaporates in the blossoming of the network form, itself bent on eradicating the importance of any distinct or isolated node" (5). The ambivalence of networks is frequently discussed in relation to their virality, which can be, on the one hand, both empowering and mobilizing, as the remarkable power of social media grassroots activism such as #MeToo, #BlackLivesMatter, and #IchbinHanna have demonstrated. On the other hand, the ethical blindness of virality also makes the logic of exponential growth one of its most uncontrollable risks, most evident lately in online hate speech. As Simon Strick argues, right-wing online content has established itself as impressionist ordering principle ("Eindrucksortierer") and automatism (67),

especially because of the affective affordances of social networks, built on fleeting impressions/snapshots that are algorithmically connected in digital archives (167).

Virality connects the digital with affect both on a systemic and on a metaphorical level. Conceptual poet Kenneth Goldsmith writes in *Wasting Time on the Internet* that "our online lives are saturated with affect, our sensations amplified and projected by the network […] Affect accounts for why things go viral on the networks. An invisible force, affect makes everything contagious" (38). The virality of networks concerns both the flow of information and the spread of affect. If the digital age is dominated by structures of spread and contagion, it makes sense to speak of "a kind of network virality that surpasses linguistic categories of disease and instead reaches out to explore new exploitable social assemblages of affective contagious encounter" (Sampson 3). As the Covid-19 pandemic has brought to full awareness, virality was never "just" a metaphor, not in the biological sense, nor in its implications of circulating fear, misinformation, and conspiracy theories. Virality, as Sampson argues, is "all about the forces or relational encounter" (4) in which the biopolitical mobilization of both positive and negative affect become mechanisms of control.

Invisible Infrastructures and the "Digital Banal"

The virality of affect makes digital networks particularly effective but at the same time strangely elusive. The multidirectional relational flows and cross-flows of digital affect render digital network infrastructure both powerful and also largely invisible. Consequently, the abstraction of power in decentralized structures leaves the network subject in a paradoxical state of indifferent vigilance. It is a grotesque combination of knowing, theoretically, that one is part of a wide-ranging "surveillance capitalism" (Zuboff), in which a large part of our daily interactions and practices are digitally traced, collected, and monetized, while simultaneously urging us to capitulate in view of both the pervasiveness and inevitability of digital technology. The unnamed protagonist in Lauren Oyler's 2021 novel *Fake Accounts* experiences this paradoxical sense of uneasiness while trying to research her ostensibly dead ex-boyfriend's social media accounts:

> Back in Brooklyn I mostly lay around in my bedroom, leaving only to pick up Thai food, reading quarters of books, and staying up late portaling from one social media account to the next. The frequency with which I would find myself back at @THIS_ACCOUNT_IS_BUGGED_ was natural but dizzying, and occasionally enraging: the account itself, if taken at face value, was boring, consisting of doctored photos and lengthy captions that hinged on one thing being not quite what it appeared but in fact a link in a chain of involvement of larger and larger entities, all the way to the very top. (122)

In tracing her ex-boyfriend's social media accounts for clues about his motivation to post conspiracy theories' never-ending "chain of involvement," the protagonist becomes aware of the hyper-relationality of fake information that comes out of this account. This relational conspiracy network, at the same time, entails an endless series of affective involvement, described as "natural but dizzying": Its habitual normalization of persistent attachment is described as only "occasionally enraging." Most often, the affective attachment goes unnoticed, as it is naturalized and, as Chun would argue, habitualized even to the extent of being perceived as "boring." Yet, affectively, this "boredom" is ambiguous, not despite but *because* of its invisibility. The protagonist's social media search is an explicit literary description of what Zara Dinnen calls the "digital banal," defined as "the condition by which we don't notice the affective novelty of becoming-with digital media" or, in other words, "the way we use media makes us unaware of the ways we are co-constituted as subjects with media" (1). The invisibility of "effac[ing] the affective stakes of life determined by algorithms" by way of naturalizing digital technology, according to Dinnen, is what literary fiction can counteract by "recover[ing] the novelty of living with digital media" (2). The paradox of the digital banal in this passage from Oyler's novel is framed by a binary of physical activity and passivity. The seeming inactivity of "lying around" is contrasted with the frenzy of account switching: The paradox of online lives (physically passive/still affected) contains an ambiguous affective relation in the posthuman subject, which suggests that behind the "visible," analog surface of embodiment there is another, invisible, layer of affective digitality.

The novel, written and published in the materiality of the printed book, does not manage to detach itself completely from this conflictedness, as it describes itself as part of and competing within the media ecology of distraction. The protagonist only reads "quarters of books" which become elements in the random streams of data that flow in and out of the digital subject's consciousness. These sequences of fragmented and discontinuous reading practices are supported by the literary style of the passage and of large parts of the novel, composed of predominantly paratactical syntax, enriched with additive gerund constructions. In that regard, the novel imitates that which it describes, in a form of digital ekphrasis. At the same time, it engages in denaturalizing the digital banal, as it reveals the logic of affective self-forming: This is a process that can no longer be integrated with traditional modes of subjectification through self-reflection in the tradition of the Enlightenment, but one which rather contains a complex interaction between affective self and algorithmic habitualization, while still retaining the narrating "I" who is seeking, at least, for spaces of self-reflection. That the space in which this self-forming takes place is shaped by the isolation of the bedroom points to the irony of the networked subject, who is surrounded by narratives of individualization but always algorithmically connected, and therefore always caught in affective collectivities—collectivities that can be simultaneously infectious and eerily isolating.

Artificial Intelligence and Black Box Affect

This doubleness of isolation and interconnectivity is also inscribed into the structures in which we interact with artificial intelligence. The rapidly advancing technology of AI-assisted chatbots, most prominently discussed recently in the case of ChatGPT3, has brought the posthuman entanglements between human body, language, technology, and digital data into full view. Our increasing interactions with artificial intelligence, whether in the case of voice assistants, chatbots, or algorithmically driven recommendation systems, prompt questions around our relationship with technology that, due to the abovementioned network implications, often evoke polarizing affective responses. Depictions of artificial intelligence as destructive robots have created uneasy feelings of fear vis-à-vis the loss of human control, while techno-utopian narratives have created euphoric feelings about the seemingly unlimited capacities for solving complex problems that these systems promise. The fact that especially with neural networks and deep learning algorithms, artificial intelligence has increasingly been perceived as an obscure "black box" has led not only to the naturalization, or banalization, of media practices addressed above, but also to the exact opposite, namely a mystification that hovers between a belief in the spiritual transcendence of artificial intelligence and its demonization in narratives of catastrophic loss of control that are fed by Frankensteinian modes of depicting AI as monstrosity (Finn; Birkle).

To counter the perceived powerlessness in our framing of AI as unknown and unknowable force, recent attempts to "deblackbox" artificial intelligence aim at revealing the often hidden material and political structures of discrimination (Chun, *Discriminating Data*; Crawford; Noble). By doing so, they channel the pervasive fear based on "human exceptionalism's insistent belief that humans naturally own all sorts of right to power" (Pitetti-Heil 288) into a posthumanist understanding of relational agency. This does not mean to deny human responsibility—on the contrary, it presses us to identify possibilities of intervening in, and designing individual and collective responsibility, towards algorithmically driven technologies. This can mean to develop a digital ethics of care that delineates the collective potentials of taking seriously different levels of interdependencies between societies, cultures, and digital media. Applying the demand formulated in the Care Collective's *Care Manifesto* of "put[ting] care at the very centre of life" (5) to digital media, for example, could help to imagine network infrastructures beyond capitalist profit based on the exploitation of invisible digital labor, natural resources, and political instrumentalization of digital affect. Within a digital ethics of care, posthumanist insights into the mutual affiliations of relational media can become a way of rethinking digital collectivities in terms of responsible and active community building rather than perpetuating an overdependence on "blind" habitualization created by an algorithmically driven attention economy.

To take collective action and "deblackbox" artificial intelligence in this context does not mean to disavow any affective responses to self-learning technology, but rather to make visible a range of multiple affects instead of perpetuating the dominant cultural narrative of fear. Whether this is the affect of empathy (Pitetti-Heil 295), that of expected "algorithmic authenticity" (Chun, *Discriminating* 114), or the technoliberal hopes connected with artificial intelligence providing "free" affective labor (Atanasoski and Vora 4), such affective ascriptions to artificial intelligence express heterogeneous and contradictory narratives of human-machine relations. Atanasoski and Vora emphasize that the technoliberal narrative of human freedom through algorithmic automation reflects humanity's "hierarchical if connected relationship to artificial intelligence" that often "obscur[es] the uneven racial and gendered relations of labor, power, and social relations that underlie the contemporary conditions of capitalist production" (4). Simultaneously, these technoliberal narratives, according to Atanasoski and Vora, are not the opposite of technodeterminist fears but rather the flipside of the coin, as both are based on prevalent social conceptions of human power relations. Rather, they claim, the fear of machines becoming more and more like humans often reproduces a universalizing "figuration of 'humanity' following the post- of postracial and postgender [...] that writes over an ongoing differential achievement of the status of the 'human'" (16). In other words, affective responses to human interactions with artificial intelligence often function as a mirror, reflecting social hierarchies, power relations, and structures of visibility in humanity itself. Or, as Sybille Krämer states, "what we have to fear is less artificial intelligence on the part of machines, but irrationality on the part of people" (28). In a posthumanist vein, Krämer deconstructs the supposed binary between human rationality and irrational artificial intelligence. Yet, implicitly, her statement reinforces a belief in the enlightened autonomous subject, albeit diagnosed as often absent.

Others critically approach the human-machine dualism from a different perspective, asking not whether humans are always rational but rather whether machines cannot also be able to detect, predict, and even generate emotions and affect. Within the most basic definition of affect as a body being affected by another body, it is possible to already consider any feedback structure of an algorithmically driven chatbot an affective relationship. Such a view, of course, challenges two properties that have often been exclusively ascribed to living beings, if not human beings: embodiment and emotions. As Elizabeth Wilson has shown in her historical study *Affect and Artificial Intelligence*, questions of intersubjective emotion and affectivity have played a role in research around artificial intelligence from the beginning. Interestingly, the truism that machines cannot have emotions is coded into and therefore reproduced by chatbots themselves. If we ask ChatGPT "How do you feel today?," it will most likely answer something like "As an AI language model, I don't have feelings like humans do." OpenAI seems to have a pre-installed template that instantly

replicates the humanist distinction between human (emotion) and non-human (no emotion), a view already problematized by Alan Turing in "Computing Machinery and Intelligence" (1950) as being part of an "other minds problem." We simply cannot know whether machines "feel" because we are humans.

However, the question of whether AI can be an affective agent should not be reduced to the question of whether the chatbot can "feel." Disregarding the difference between "feeling" and "affect," which is central to affect theory, such a reductive perspective would dismiss the relational dimensions of AI affect. Matthias Scheutz refers to different properties of affect in artificial intelligence, from "affective computing" (Picard) that explores possibilities for machines to be "affect-aware" to "affective" user interfaces to (seemingly) emotional robots (250). A specific case of affective computing concerns what is referred to as "emotion recognition," in which AI systems are trained to detect emotional patterns for example in human faces or voices. ChatGPT does not, like other AI systems, have the sensors and tracking capacities to detect the user's emotions, but it already actively provides a space of interaction, therefore prompting, itself, an affective relationship with "real" emotions. ChatGPT's affect, arguably, does not match our understanding of sentiment and subjective expression, as formulated in the tradition of the liberal autonomous self. Rather, we may need to reconceptualize AI affect as radically collective, as these automated systems are based on large-scale data models containing billions of data points, consisting of masses of individual "texts" to be recombined into newly generated content.

One of these data points is the individual user's affective response to the interaction—a data point that is also continuously fed into the system of machine learning. Affective responses to artificial intelligence can involve a wide range of emotions, including trust, frustration, excitement, pleasure, fear, boredom, expectation, and many other emotions and affects, as movies like *Her* (2013), *Ex Machina* (2014), and *I'm Your Man* (2021) have displayed. Human affective involvement with artificial intelligence, of course, works both ways. What can be regarded, from a technological perspective, as an important data set in reinforcement training data, involves vital ethical and political questions if artificial intelligence itself is considered an agent capable of producing and recognizing affect. "Can there be affect without the human?," Heather Houser asks in her reflection on the seeming paradox of a posthumanist reflection on the affective turn. While Houser connects this question to ecocritical reflections on affective transcorporeality, the question also gains relevance in the case of human-technology interaction, as this equally decenters human affect: "Affectivity does not mark human uniqueness," Houser writes. Such a decentering also necessitates an ethics of posthumanist relationality. Kate Crawford points to the problematic assumptions on which much automated affect recognition, for example in facial recognition technology, is based. She shows that many of the affect recognition tools found in education, security systems, and hiring contexts, employ

models rooted in universalizing and often racist practices of physiognomy, as for example in eighteenth- and nineteenth-century colonial pseudoscience of phrenology, the measuring of the skull to identify supposed links between physiognomic features and psychological states of mind. Crawford draws critical attention to the historically inscribed biases and assumptions of these artificial recognition tools, including, apart from the claims of affective universality, a biological determinism, an over-simplified definition of emotion (we may add, a lack of distinction between emotion and affect) as well as the question of machine-readability in an area that may be too complex to fall into neat categories necessary to the binary logic of code. So, "why, with so many critiques, has the approach of 'reading emotions' from the face endured?," Crawford asks (174). The answer she gives points to the politics of facial data, the "powerful institutional and corporate investments" (175) in this expanding industry, connected with economic and military control.

Besides these political and economic interests, human investment in digital affect seems to have been key to our interest in digital technology from the beginning. What sounds like a paradoxical pairing at first sight, the nexus between "digital" and "affect" becomes a multi-faceted field that is integral to posthumanist understandings of human-non human assemblages. From the radically relational perspective of decentering not only human agency but also human affect, digital technology becomes one (among many other) nodes in an entangled network of affective agents. To regard digital affect as collective network of relations implies its own ethics, as it makes visible and therefore enables us to recognize the often invisible dimensions of affective power, labor, and knowledge that are part of the digital infrastructures of affect.

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