40

Environ/mental ecologies in new media art

Anne Sophie Witzke and Jonas Fritsch

Introduction

Over the past few decades, the field of new media arts has become marked by a distinctive "environmental sensitivity" (Pold & Andersen, 2015).[1] This sensitivity is provoked by a coupling of two parallel events: first, new media art is responding to the urgency of multiple environmental changes, most notably climate change and its far-reaching and irreversible consequences for ecosystems, animals, and humans. In this respect, new media art's environmental orientation can be situated within the "environmental turn" presently unfolding across the arts and humanities, which has led to a renewed emphasis on human beings' fundamental interconnectedness with the world on all scales.

Second, new media art's interest in the environment stems from an engagement with new technologies and their wider role in societal issues. Various forms of new technological developments, ranging from ubiquitous and mobile computing that can be used to track and monitor individual behavior, to interventions on a planetary scale like geoengineering, are frequently presented as solutions to clearly demarcated environmental issues – what Morozov has criticized as a form of "technological solutionism" (2013). For new media art, which often engages in a self-reflexive exploration of its own materials and technologies, the prospect of using technologies to remedy problems related to environmental issues and to generate environmental consciousness on the part of citizens hence provides an obvious area of artistic inquiry.

In this chapter, we highlight a specific subset of environmental new media art practices that address the social and existential implications of the pervasive climate and cultural crises we are facing today. We primarily attend to *The Bureau of Meteoranxiety* (2018) by Australian artists Olivia Tartaglia and Alex Tate, a hybrid of performance art and mixed-media installation, which explores the intertwining of mental health and climate change by offering technology-mediated therapy for the mental health condition of "meteoranxiety." Coined by ecophilosopher Glenn Albrecht, meteoranxiety denotes "the specific anxiety that people feel when their climate and the weather… becomes so abnormal as to give them a sense of foreboding that the future is going to be more difficult than the present" (Albrecht in Francis, 2018). Meteoranxiety is one in a number of concepts, including concepts like "pre-traumatic

 DOI: 10.4324/9780429437069-50

stress response" and "nature-deficit disorder" (NDD), which have recently been proposed by ecophilosophers and ecopsychologists to capture various forms of mental distress that are emerging in the wake of climate change and environmental detachment.[2] As these concepts indicate, the escalating human impact on the planet not only causes bio-physiological pathologies in climate and environmental systems but also gives rise to negative affects and perceptions for individuals—and even to psychological disease. Indeed, for a growing number of people, the uncertainty and overwhelming complexity presented by climate and environmental problems are accompanied by existential responses like anxiety, fear, grief, powerlessness or resignation (Light, Powell & Shklovski, 2017; Fritsch, 2018). Albrecht hence warns that "[t]he 'unsafe' biophysical space that we are creating for ourselves will have its correlates in a self-generated unsafe psychoterratic (psyche-earth) space" (Albrecht, 2014: 58). A recent report by the American Psychological Association together with the organization ecoAmerica emphasizes the importance of recognizing and attending to these negative mental implications of environmental change, as they "are keeping us […] from properly addressing the core causes of and solutions for our changing climate, and from building and supporting psychological resiliency" (ecoAmerica & the American Psychological Association, 2017: 4). Yet, within mainstream environmental management policies and the logic of corporate, tech-based environmental solutions, the individual's relationship with climate change is predominantly framed as a matter of personal accountability, rational behavior, and sustainable consumption. Here, we can identify risk in proposing technologies as helpful tools that can provide quick fixes to complex environmentally related issues.[3] Indeed, the existential implications of climate change are rarely taken into account, and the mental, cultural, political, and economic factors that cause climate change in the first place are often left unquestioned.

Artists like Tartaglia and Tate respond to this flawed approach through a critical exploration of the application of technology to climate change issues. Their artistic practice may be located within the variegated field of new media art – art that in some way is created, stored and transmitted by 'new' media technologies and grounded in a contemporary technological episteme. Following artist Mark Tribe's definition, we take new media art to describe art forms that employ "emerging media technologies and are concerned with the cultural, political, and aesthetic possibilities of these tools" (Tribe, 2007: 1).[4] As a term, *new media art* gained prominence in the 1990s, when the spread of the personal computer and the advent of the World Wide Web gave rise to new forms of creative and artistic expression and led to genres such as interactive art, net art, computer art, software art, mixed-media art forms, game art, virtual art, and sound art as well as activist practices like hacktivism and tactical media.[5] These practices have typically focused on the formal properties of new media technologies or the role that these technologies play in shaping our society and identity, taking up issues such as code, software, open source, surveillance, network culture, participation, and online identity. Recently, however, this focus has been extended to include an interest in the environment and its current state of crisis, which can be identified in the work of artists like Natalie Jeremijenko, Beatriz da Costa, YoHa, Amy Balkin, and Marko Peljhan and collective projects like *The People Speak* and *World of Matter*. These are all artists who explore the complex intersection of technology, environment, and society and locate technology within a broader ecological web of human, social, political, and environmental factors, a complex of factors also present in the work of Tartaglia and Tate.

In this chapter, we read the new media artistic approach of Tartaglia and Tate through the work of French philosopher and psychoanalyst Félix Guattari, whose approach to technological and artistic explorations of new value systems and forms of subjectivity is conceptually grounded in a transversal, pluralistic understanding of ecology. Ecology, for Guattari,

consists of (at least) three ecological registers: environmental ecology, social ecology and mental ecology, which cross-fertilize each other and therefore must be addressed together. The scope of his project thus goes well beyond the conventional sense of ecology (as concerned with saving the environment and maintaining biodiversity) to include a focus on social relations and conditions of subjectivity. As he asserts, the environmental crisis "can be traced to a more general crisis of the social, political and existential" (Guattari, 2006: 119), and for such reasons, "[i]t is quite wrong to make a distinction between action on the psyche, the socius and the environment" (Guattari, 2008: 28). Guattari, moreover, relates this vital reintegration to art and technology, arguing for a need for artistic expression and technological practices that explore and articulate alternatives to, openings in, or critiques of the prevalent condition of existential, social and environmental ecologies. Thus, Guattari provides us with a very useful vocabulary for grasping new media art's engagement with environmental change and its assorted problems and entanglements.

Our interest in Guattari's thinking resonates with a more general interest in elaborating the notion of *ecology* as a term that may circumvent old dualisms such as culture/nature, technology/biology and subject/object. In an article about Guattari's ecosophical perspective, technology theorist John Tinnell has termed this interest an "ecological turn" associated with the evolution of a form of "ecocriticism" or "eco-humanities" (Tinnell, 2011).[6] Tinnell outlines a genealogical starting point in Arne Naess' "deep ecology" (Naess, 1995) and Gregory Bateson's *Steps to an Ecology of Mind* (Bateson, 1972/2000), to which Herzogenrath adds the joint work of Gilles Deleuze and Guattari (Herzogenrath, ed., 2009). More recently, thinkers have also employed the concept of ecology in new ways, for instance, Timothy Morton's *Ecology without Nature* (Morton, 2009), Bruno Latour's idea of "ecologization" (Latour, 1998, 2008) and Isabelle Stengers' notion of "an ecology of practices" (Stengers, 2005). In light of the proliferation of ecological perspectives, philosopher and cultural theorist Erich Hörl suggests a whole "new ecological paradigm" under the auspices of "general ecology," one that combines research in the humanities with research in cybernetics, systems theory, process philosophy, and discourses on the Anthropocene (Hörl in Anon., 2016; Hörl, 2017). Hörl argues that an ecologization of thought has "traversed the whole 20th century" culminating within the last ten to fifteen years, in which "we are witnessing a powerful form of expression of new ideas that are all somehow under the umbrella of this term 'ecology,'" making ecology "our new historical semantics" (Hörl in Anon, 2016: 26). Indeed, the term *ecology* has been applied across a broad variety of fields from ecopsychology, ecofeminism, and eco-historicism to ecocriticism and ecological media, just to mention a few. Here, we are particularly interested in the strands that explicitly deal with technology within this broader ecological perspective, e.g., with media technologies as ecologies (Fuller, 2005; Brunner and Fritsch, 2013) or "technoecologies" (Parisi, 2009) as well as with strands that explore creative and artistic practices that adopt such a generalized ecological understanding, e.g., with aesthetic ecologies.[7]

Within the diverse theoretical landscape of ecological thinking, this chapter focuses on Guattari's ecosophy, which, we contend, allows us to grasp the complex connections between media, environment, subjectivity, and aesthetics at work in *The Bureau of Meteoranxiety*. In so doing, we argue that this artwork highlights the inherent connection between environmental and existential conditions and thus reveals the bio-physiological crisis in the environment as a crisis of mental and existential ecologies. The artwork critiques the social and political application of technologies as a means to solve this 'environ/mental' crisis and points to art as having a therapeutic effect that mobilizes more usable responses to our contemporary ecological condition.

Guattari on ecology and aesthetics

Félix Guattari develops his ecosophy in his later writings *The Three Ecologies* (Guattari, 1989/2008) and *Chaosmosis: An Ethico-Aesthetic Paradigm* (Guattari, 1992/2006). His notion of ecology, or more precisely ecologies, is a way of addressing a range of paradigmatic problems in all their complex interdependence, instead of compartmentalizing them into separate domains. Guattari calls this comprehensive approach a "generalized ecology," which, more than the "restricted" disciplines of the life sciences, refers to a relational mode of thinking. Generalized ecology connects seemingly disparate elements running from the micro, through the intermediary, to the planetary in scale. As a radical mode of thinking that emphasizes connections, interfaces, and experimentation to "radically decenter social struggles and ways of coming to one's own psyche," its orientation is simultaneously activist and political (Guattari, 2008: 35). In so doing, Guattari opens a conceptual path for thinking alternative forms of environ/mental subjectivity and the role of art and aesthetics in this endeavor.

Taking inspiration from anthropologist, cyberneticist and ecologist Gregory Bateson, who famously claimed that there is "an ecology of bad ideas just as there is an ecology of weeds," Guattari is particularly concerned with the condition and production of subjectivity (Bateson, 1972/2000: 492).[8] Subjectivity is, in Guattari's understanding, a multivalent, performative, pre-personal and pre-individual assemblage of elements. It emerges, in Gary Genosko's formulation:

> as it finds a certain existential consistency, without getting tied down to an identity once and for all, in the crossing points of components, in their intra- and interassemblage relations, sometimes deflating into involutions, blockages, and encystments; at other times taking off through transformations (potential consistencies).
>
> *Genosko (2009: 107)*

Subjectivity can take different forms: it may stiffen in uniform, homogenized ways, becoming trapped in "stratified and deathly repetitions," or conversely, it may open up toward multiple existential territories and unfold in transformative and heterogeneous ways (Guattari, 2008: 35).

Guattari argues that it is vital to support the ongoing creation of "a nascent subjectivity," one that unfolds in all its unique singularity and gives rise to autonomous and unique ideas, expressions, tastes and ways of being (Guattari, 2008: 45). Only by engaging with the conditions of mental ecology, including the fears and anxieties, as well as the homogenized and commodified lifestyles that drive many people, may we prevent the major crises of our time. As Michael Goddard contends:

> [n]o amount of dire warnings, backed up as they may be by hard empirical evidence, about such phenomena as global warming, for example, are ever going to result in the slightest political change without addressing […] vectors of subjectivation, especially if they are merely imposed as part of a larger culture of fear and the cultivation of toxic and paranoid forms of subjectivity.
>
> *Goddard (2011: 9)*

What Guattari proposes when he speaks about subjectivity and singularity is not the figure of the fully formed liberal individual. Rather, he articulates the emergence of a processual subjectivity that deterritorializes standardized, conformist modes of living that have been

shaped through the established, dominant signifying order. The cultivation and affirmation of new subjectivities is hence a fundamentally political and critical practice, one which aims at cultivating dissensus. Yet it does so without presupposing a determinate telos in the form of an alternative dominant ideology or normative order. Thinking mental ecology with Guattari is, in other words, a far cry from any environmentalism that prescribes what actions and reflections the individual should make to live more sustainably. Likewise, it diverges from attempts to control or soothe the inconvenient and difficult feelings that may arise under conditions of crises through various forms of quick fixes and technical solutions (Morozov, 2013).

Guattari's discussion of mental ecology is tightly coupled to his analysis of the dominance of Integrated World Capitalism – or post-industrial capitalism, as we could call it – and to the role of media technologies herein. Post-industrial capitalism captures and grafts subjectivity through a continuous spreading of capitalist semiotics that targets the individual at the level of their thoughts, perceptions, affections, sensations, imagination and desires. This ideological dissemination is facilitated by mass media technologies like television and films, which he criticizes for promoting capitalist interests and engendering infantilized, serialized and "somnolent" individuals that are "reductionistically bound to equivalence and beholden to market fluxes" (Genosko, 2013: 17). Newer technologies of communication and information, like the computer and Internet, are also involved in the production of subjectivity on a signifying and an affective register. Thus, Guattari emphasizes the importance of recognizing technologies as not just representational machines that "convey representative contents," but as machines that are productively involved in modeling subjectivity (Guattari, 2013: 2).

In contrast to his critique of mass media, Guattari's perspective on digital and networked technologies is often seen as overly optimistic, especially when read in concert with his concept of "post-media." In his late writings, Guattari speculates that we are about to enter a post-media era, in which "[t]he information and telematic revolutions are supporting new 'stock exchanges' of value and new collective debate, providing opportunities for the most individual, most singular and most dissensual enterprises" (Guattari, 2008: 43). New participatory and networked technologies show potential to escape the unidirectionality and the 'mass' of the mass media, and to reinvent communication, reinstall participation, and inspire new modalities of subjectivity (Genosko, 2013: 18). Reaching a post-media condition hence becomes a programmatic point in Guattari's ecological thinking, as it involves turning technologies away from capitalism's application of them as conduits of conformity and growth, toward dissensual, re-singularizing and democratizing ends.

At the time of writing, Guattari was fully aware that the values connected with advanced informatics and communication technologies reflected the interests of post-industrial capitalism. The post-media reinvention of the technosphere requires the aesthetic reappropriation and recreation of media practices and uses. It is hence tightly connected with Guattari's notion of the "new aesthetic paradigm," in which aesthetic processes and values permeate the development and employment of digital media technologies, and, at a more basic level, subjectivity, society, and politics (Guattari, 2006). Accordingly, aesthetic creation represents for Guattari the most potent form of political resistance to capitalism's overdetermination of values, feelings, and thoughts. It holds the capacity to foster deviant and heterogeneous blocks of sensation, percepts and affects that transport us into new sensual and imaginary worlds – ultimately, into new ways of being. In this sense, an aesthetic paradigm is imbued with ethical and political concerns:

> The new aesthetic paradigm has ethico-political implications because to speak of creation is to speak of the responsibility of the creative instance with regard to the thing

> created, inflection of the state of things, bifurcation beyond pre-established schemas, once again taking into account the fate of alterity in its extreme modalities.
>
> *Guattari (2006: 7)*

An aesthetic paradigm cannot be limited to what is conventionally considered art, but rather should be considered "as an expanded field of creative life practices" (O'Sullivan, 2010: 259). Art holds a privileged position within this paradigm, however, as art has the "function of rupturing with forms and significations circulating trivially in the social field" and "takes its capacity to invent mutant coordinates to the extremes: it engenders unprecedented, unforeseen and unthinkable qualities of being" (Guattari, 2006: 106, 130–131). Consequently, art's force of creation can be directly linked to the production of subjectivity as a processual, aesthetic mode of existence.

As media art scholars have noted, Guattari's coupling of the post-media condition and the aesthetic paradigm resonates well with the aspirations and assumptions of critical new media art, which has a long tradition of exploring digital technologies in the pursuit of change within the social and personal realm (Goddard, 2011; Apprich, 2013). Yet, one might well argue that environmentally aware new media art extends this critical approach and goes further by acknowledging the biophysical realm as equally important to that of the social and mental. Environmentally aware new media art is, in this respect, exemplary of the type of generalized ecology that Guattari articulates, which emphasizes the interdependent emergence of ecologies across mental, social, and biophysical registers. In the next section, we unfold the art project, *The Bureau of Meteoranxiety*, which attends to exactly these interdependences through an ethico-aesthetic exploration of the intertwinement between meteorological disruptions and human mental distress and critiques the use of neoliberal tech-based solutions to this environ/mental crisis.

Meteoranxiety – the environ/mental dysphoria of climate change

The Bureau of Meteoranxiety (BoMa) was created by the Australian artists Olivia Tartaglia and Alex Tate for the Next Wave Festival in Melbourne (2018). The artwork maps out an imaginary and semi-futuristic government bureau that offers technology-based therapeutic treatment of environmentally related pre-traumatic stress and meteoranxiety. A hybrid of interactive performance art and mixed-media installation, BoMa allows participants to work through their fears of climate change by exposing them to "experimental visual therapies and sensory remedies" and by providing "new language and coping strategies to help stay above the metaphorical and literal flood line" (Tartaglia & Tate, 2018).

The installation is composed of two main elements: an indoor gallery space turned into the Bureau's fictitious public office, replete with a waiting room and staff, and an outdoor program that consists of a set of posters placed in the vicinity of the 'office.' The posters, which have the form of public awareness campaigns, urge people to be alert of the symptoms of meteoranxiety: "Feeling isolated? Disconnected? You might have Nature Deficit Disorder," reads one poster. "Checking the weather…Again? You might have Meteoranxiety," reads another. And a third contends, "'Weird Weather.' It is more than small-talk. Stop the spread of Meteoranxiety." Concerned people are encouraged to seek professional assistance at the Bureau, to "Visit BoMa and learn the signs."[9]

Inside the bureau's office – a white, clinical and corporate-laboratory-looking space – audience-participants register as 'patients' at a front desk in the waiting room. There they receive a questionnaire from a BoMa staff member to assess their level of meteoranxiety. In

response to this "wellness trial," the bureau offers its patients a "public wellness program" that is presented to the participants as the first of its kind, based on "new cutting edge technology, which is guaranteed to help you feel less meteoranxious and identify the feeling" (Tartaglia & Tate, 2018). The public wellness program consists of four therapeutic treatments that combat climate anxieties through different methods: *Exposure Therapy*, cloaked as a guided meditation, starts off with a calm and soothing forest environment, but escalates into a strange, unexpected and troubling weather event that leaves the participants uneasy and disturbed; *Counselling* by an Artificial Intelligent Chatbot therapist called Gail (developed by Howard Melbyczuk), who delivers online advice, which is sometimes understandable and useful, and at others completely random and incomprehensible; *Journal Therapy* – a mode of therapy where the patients are invited to share their feelings with one another and respond to the question "When was the last time you felt Meteoranxious?" on video and in writing through an online group journal; and *Virtual Reality Therapy*, which gives patients a therapeutic dose of 'nature' by immersing them in a realistic VR simulation of a beautiful, native rainforest. The bureau claims that this type of VR "forest bath" can decrease meteoranxiety and cure patients with nature-deficit disorder (NDD), a term for the mental costs of spending more and more time indoors, absorbed in electronic technologies and modern things, and becoming increasingly alienated from the natural world (Louv, 2005). Another element in this form of therapy, which BoMa titles "NatureConnect" therapy, is a 3D print of a tree from the virtual reality simulation, which is mounted on the wall so that patients can touch and feel the grooves of the bark that they see in VR.

Using language and visual design reminiscent of governmental agencies and the health care sector, BoMa is imbued with an air of authority, scientific expertise and effectiveness, which promotes the impression of BoMa as a credible governmental organization established to control and manage the public's mental health in the wake of climate change. This impression that is enhanced by the proximity between the name The Bureau of Meteoranxiety (BoMa) and the actual Australian Bureau of Meteorology (BOM). Yet, the therapies that BoMa proposes as solutions to the patients' mental disorders appear absurd and counterintuitive: lack of contact with the natural world is treated with a simulation of nature in the form of a VR environment and a 3D-printed tree rather than with nature itself, and climate worries and anxieties are supposed to be sorted out through the perplexing counseling by Gail, the AI robot. These futuristic technological therapies hardly solve the environ/mental dysphoria and trauma experienced by an increasing number of people and appear as rather useless coping strategies designed to position the individual as responsible for adapting to the existing, dysfunctional conditions.

AU: Please check and confirm the change of "propose" to "proposes" for the subject BoMa.

In BoMa, Tartaglia and Tate use satire and irony coupled with elements of sci-fi and futurism to elicit ridicule for such temporary and diminutive technological quick fixes, which take on a Sisyphean character. The traumas they purport to heal will continue to be reactivated until the overwhelming environmental issues that cause them are solved. This aesthetic strategy is not used just to depict a potential future scenario in a humorous way. Rather, Tartaglia and Tate exhibit a deep skepticism about the logics, motivations and results of current pro-tech politics, which posit new technologies as solutions to all sorts of societal problems from anthropogenic climate change to patient care in the healthcare sector, but are less interested in questioning the structural causes and societal conditions that have generated these problems in the first place. In this respect, BoMa imitates contemporary neoliberal politics, in which the focus is on individual adaptation and symptom treatment rather than systemic change. Rather than changing reality so it becomes more livable, digital technology is used in this context as an instrument that "seizes individuals from the inside," enrolling

client-users with negative or divergent behaviors into compliance with existing conditions (Guattari, 2009: 262). Tartaglia and Tate, however, refuse to present this existential model as a viable option. The artwork's built-in flaw – that is, the failure of the technology-based therapies to work – suggests that current politics and its supporting apparatus of capture cannot be the antidote to environ/mental dysfunction, which are bi-products of the culture of growth, consumption, and waste that neoliberalism has created. In this way, BoMa critically negates the techno-neoliberal and individualized model of subjectivity by entangling itself with this apparatus of capture and eliciting its paradoxes from within.

Tartaglia and Tate's project demonstrates the continued relevance of Guattari's transversal ecological thinking, with its emphasis on the interconnectedness of mental, social, and environmental ecologies. By addressing the question of mental distress as part of ongoing environmental disasters, as well as current policies and social structures, the work emphasizes that we cannot bring about changes in one of these ecological dimensions without attending to the others. BoMa also echoes Guattari's dual call for a redirection of technologies and artistic experimentation with the goal of fostering more open and diverse forms of subjectivity. Although Tartaglia and Tate do not propose concrete alternative technological practices designed to achieve a liberating, post-media condition (as many critical new media artists aim to do), their artwork is a creative exploration of how digital technologies as apparatuses of capture take part in the production of subjectivity in an age of climate change. Indeed, Guattari's assertion that "[f]rom now on, no domain of opinion, thought, image, affect or narrativity can pretend to escape from the invasive grip of 'computer-assisted' data banks, the telematic etc." (2013: 1) aptly describes the scenario presented in BoMa, where deviant mental reactions to climate change are molded through technological devices and programs. The model of technology-assisted therapy utilized in BoMa provides an opportunity to critically consider the limitations of an individualized, technologically based approach to the immense environmental impacts on individuals and communities that characterize neoliberal polices.

As an alternative to this flawed model, we might finally consider *The Bureau of Meteoranxiety* as providing a different therapeutic model based on the encounter with the artwork itself. If we apply the schizoanalytic lens of Guattari to the art piece, psychoterratic pathologies may themselves provide a starting point for thinking subjectivity anew. As Guattari emphasizes:

> it's not simply a matter of remodeling a patient's subjectivity – as it existed before a psychotic crisis – but of a production sui generis. […]. These complexes actually offer people diverse possibilities for recomposing their existential corporeality, to get out of their repetitive impasses and, in a certain way, to resingularise themselves.
>
> *Guattari (2006: 6–7)*

The goal of schizoanalysis is, in other words, not to bring the patient back to normality by reinstalling dominant norms in their behavior, thus adapting them to the existing world, but to promote new and singularized subjectivities. Through the deterritorialization of the patient's obsessive framework of thought, schizoanalysis involves the creation of new percepts and affects, new beliefs and values, which can help them to gain access to new ways of being.[10]

As an artwork, BoMa assists in this process by offering us new perceptions, understandings, and worldviews, which point toward new realities and subjectivities. Indeed, as Guattari suggests, art has an existential impact and "is capable of engendering mutant subjectivities" (Guattari, 2006: 90). BoMa should be viewed not only as a critique of the present, but also "as a starting point for people thinking about the real world," as one of the artists, Alex Tate, puts it, and for thinking the future anew (Tate in Cockerill, 2018). In this light, the environ/

mental depressions depicted in BoMa contain a potential germ for the cultivation of new, dissident ideas and subjectivities. The piece operates on the edge of the actual and the virtual, concerning itself with the world in which it is created as well as providing the audience with a space of reflection in which to consider the potentialities of a future yet to come. While art surely cannot solve the climate crisis or its negative existential impacts alone, it can provide us with critical insights, speculative proposals, and alternative models, which can inspire us to imagine new and viable environ/mental ecologies. BoMa is an artwork that brings together aesthetics, technology, existential issues and environmental change in order to encourage us to live differently and more ecosophically on the planet.

Notes

1 Smite and Smits similarly identify an emerging "techno-ecological" paradigm within contemporary media art, arguing that "the growing tendency in contemporary media art to address and work with sustainability issues […] is evidence of an ongoing and fundamental shift from a 'techno-scientific' to a 'techno-ecological' paradigm" (Smite & Smits, 2013: 143).
2 The term *pre-traumatic stress response* is "a before-the-fact version of classic PTSD" proposed by the psychiatrist Lise Van Susteren to capture the anticipatory anxiety about an event that may occur in the future, whereas the term *nature-deficit disorder*, coined by journalist Richard Louv, denotes a range of behavioral problems such as depression and reduced attention span that occurs due to the lack of immersion and interaction with the natural world, for example when living in large cities with minimal amounts of plants, animals or clean air (van Susteren, 2017: 57; Louv, 2005).
3 This is, for instance, evident in recent smart cities proposals that suggest that environmental sustainability and environmentally consciousness can be achieved through a widespread enrollment of digital technologies, which will help people monitor and understand the environmental impact of their actions. The assumption seems to be that individuals, tooled up with digital equipment, will make rational choices based on information derived from digital tools and cybernetic feedback systems coupled with economic incitements to redirect consumption patterns. For more examples and a detailed critique of this approach, see, e.g., Adam Greenfield, *Against the Smart City* (2013); or Evgeny Morozov, *To Save Everything, Click Here: The Folly of Technological Solutionism* (2014).
4 *New media art* is a contested term. For one thing, the term has proven difficult to define due to the rapid changes that digital media and new technologies undergo. Reflecting these changes, new media art practices as well as the theoretical understanding of them constantly evolve and shift, which makes it hard to settle on a commonly accepted definition (Grau, 2016). Another issue that is often critiqued has to do with the term's emphasis on newness. As new media art curator Christiana Paul, among others, has argued, "The problematic qualifier of the "new" always implies its own integration, datedness and obsolescence," signaling an art genre that only employs the newest emerging technologies (Paul, 2016: 1).
5 The term *new media art* is often used interchangeably with *digital art*, with the slight difference that digital art typically also includes artistic practices that take digital technologies as a means to enhance existing art forms such as photography and print, whereas new media art tends to focus more exclusively on art that explores the formal properties or cultural practices associated with new technologies.
6 The ecological humanities are also frequently labeled "the environmental humanities" – a rapidly growing interdisciplinary formation that has emerged within the last two decades as a response to the enormous scope and complexity of the many interrelated environmental crises of the present era. This burgeoning interdisciplinary field of research draws together multiple subfields such as philosophy, literature, history, digital humanities, media studies, post-colonial studies, gender studies and political ecology, transforming and reorienting their conventional topics, methods and practices so they can account for the new perspectives and changed worldviews that arise in the wake of man-made climate changes. For a discussion of the environmental humanities, see, for instance, Bergthaller et al. (2014) and Rose et al. (2012).
7 On media-based aesthetic ecologies, see, for instance, Smite and Smits, "Emerging Techno-Ecological Art Practices: Towards Renewable Futures" (2013); Schick and Witzke, "Atmosfæriske konstellationer – kunsten at økologisere" (2014); and Parikka, *A Geology of Media* (2015). On

ecology and art, more broadly, see, among others, Demos, *Decolonizing Nature. Contemporary Art and the Politics of Ecology* (2016); and Scott, "Artists' Platforms for New Ecologies" (2013).

8 Guattari's notion of three ecologies is also inspired by the work of Gregory Bateson, who formulated the idea of three interrelated systems existing at the level of mind, society and environment in *Steps to An Ecology of Mind* (Bateson, 1972/2000).

9 *The Bureau of Meteoranxiety* (BoMa) by artists Olivia Tartaglia and Alex Tate, exhibited at the Next Wave Festival in Melbourne (2018).

10 Along similar lines, Franco "Bifo" Berardi argues in the text "How to heal a depression" that depression should not be seen "as a mere pathology, but also as a special form of knowledge," a condition of the mind characterized by dissolution and decomposition, which – upon overcoming it – makes room for different re-compositions of the mind (Berardi, 2016). Referring to Guattari's thinking, he suggests that the "schizoanalytic method should be applied as a political therapy in the current situation," arguing that the recent financial collapse in the global economy and the exhaustion of planetary resources are creating a political and economic depression, which gives space for the creation of different political visions and social organizations (Berardi, 2016).

References

Albrecht, G., 2014. Ecopsychology in the Symbiocene. *Ecopsychology*, 6(1), pp. 58–59.

Anon, 2016. Erich Hörl. A continent. Inter-view. *Continent*, 5(2), pp. 25–30. Available at: http://www.continentcontinent.cc/index.php/continent/article/view/242 [Accessed August 30, 2019].

Apprich, C., 2013. *Remaking media practices – from tactical media to post-media*. metamute, pp. 1–13. Available at: http://www.metamute.org/editorial/lab/remaking-media-practices-–-tactical-media-to-post-media [Accessed July 1, 2017].

Bateson, G., 2000. *Steps to an Ecology of Mind (1972)*. Chicago and London: The University of Chicago Press

Berardi, F. 'Bifo', 2016. *How to heal a depression?* Available at: https://transversal.at/blog/How_to_heal_a_depression [Accessed September 15, 2019].

Bergthaller, H. et al., 2014. Mapping Common Ground: Ecocriticism, Environmental History, and the Environmental Humanities. *Environmental Humanities*, 5, pp. 261–276.

Brunner, C. & Fritsch, J., 2013. Beyond the Network: Experiential Fields and Urban Media Ecologies. In *Proceedings of the Media Cities 4 Conference*, Buffalo, NY, pp. 277–287.

Cockerill, J., 2018. *Bureau of Meteoranxiety*. unprojects.org.au. Available at: http://unprojects.org.au/un-extended/dear-un/bureau-of-meteoranxiety/ [Accessed July 1, 2018].

Demos, T.J., 2016. *Decolonizing Nature. Contemporary Art and the Politics of Ecology*. Berlin: Sternberg Press.

ecoAmerica & The American Psychological Association, 2017. *Mental Health and Our Changing Climate*. Available at: http://ecoamerica.org/wp-content/uploads/2017/03/ea-apa-psych-report-web.pdf. [Accessed July 1, 2018].

Francis, H., 2018. *Bureau of Meteoranxiety is here to address your climate stress*. Available at: https://www.theage.com.au/entertainment/theatre/bureau-of-meteoranxiety-is-here-to-address-your-climate-stress-20180510-p4zej0.html [Accessed July 5, 2018].

Fritsch, J., 2018. Affective Interaction Design at the End of the World. In *Proceedings of the Design Research Society* (DRS) Conference, Limerick, Ireland, pp. 896–908.

Fuller, M., 2005. *Media Ecologies: Materialist Energies in Art and Technoculture*. Cambridge, MA: MIT Press.

Genosko, G., 2009. Subjectivity and Art in Guattari's *The Three Ecologies*. In B. Herzogenrath, ed. *Deleuze|Guattari & Ecology*. Basingstoke: Palgrave Macmillan, pp. 102–115

Genosko, G., 2013. The Promise of Post-Media. In C. Apprich et al., eds. *Provocative Alloys: A Post-Media Anthology*. Lüneburg: Post-Media Lab & Mute Books, pp. 14–25.

Goddard, M., 2011. FCJ-114 Towards an Archaeology of Media Ecologies: "Media Ecology," Political Subjectivation and Free Radios. *The Fibreculture Journal*, pp. 6–17.

Grau, O. 2016. *New Media Art*. Oxford Research Bibliographies. Available at: http://0-www.oxfordbibliographiesonline.com/view/document/obo-9780199920105/obo-9780199920105-0082.xml [Accessed September 15, 2019].

Guattari, F., 2006. *Chaosmosis*. Sydney: Power Publications.

Guattari, F., 2008. *The Three Ecologies (1989)*. London: Continuum.

Guattari, F., 2009. Capital as the Integral of Power Formations. In S. Lotringer, ed. *Soft Subversions. Texts and Interviews 1977–1985*. New York: Semiotext(e), pp. 244–264.
Guattari, F., 2013. *Schizoanalytic Cartographies (1989)*. London: Bloomsbury Publishing.
Herzogenrath, B. ed., 2009. *Deleuze/Guattari & Ecology*. Basingstoke: Palgrave Macmillan.
Hörl, E., 2017. *General Ecology. The New Ecological Paradigm*. London: Bloomsbury Academic.
Latour, B., 1998. To Modernize or to Ecologize? That's the Question. In N. Castree and B Willems-Broun, eds. *Remaking Reality: Nature at the Millenium*. London & New York: Routledge, pp. 221–242.
Latour, B., 2008. *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA: MIT Press.
Light, A., Powell, A. & Shklovski, I., 2017. *Design for Existential Crisis in the Anthropocene Age*. New York: ACM.
Louv, R., 2005. *Last Child in the Woods*. Chapel Hill, NC: Algonquin Books of Chapel Hill.
Morozov, E., 2013. *To Save Everything, Click Here: The Folly of Technological Solutionism*. New York: Public Affairs.
Morton, T., 2009. *Ecology without Nature*. Cambridge, MA: Harvard University Press.
Naess, Arne, 1995. Self-Realization: An Ecological Approach to Being in the World. In Alan Drengson and Yuichi Inoue, eds. *The Deep Ecology Movement*. Berkeley: North Atlantic, pp. 13–30.
O'Sullivan, S., 2010. Guattari's Aesthetic Paradigm: From the Folding of the Finite/Infinite Relation to Schizoanalytic Metamodelisation. *Deleuze Studies*, 4(2), pp. 256–286.
Parikka, J., 2015. *A Geology of Media*. Minneapolis: University of Minnesota Press.
Parisi, L., 2009. Technoecologies of sensation. In B. Herzogenrath, ed. *Deleuze/Guattari & Ecology*. Basingstoke: Palgrave Macmillan, pp. 182–199.
Paul, C., 2016. Introduction: From Digital to Post-Digital-Evolutions of an Art Form. In C. Paul, ed. *A Companion to Digital Art*. Chichester: John Wiley & Sons, pp. 1–20.
Pold, S. & Andersen, C.U., 2015. How to Experience and Relate to Climate Change: The Role of Digital Climate Art. In C.S. Paldam & J. Wamberg, eds. *Art, Technology and Nature*. Burlington, VT: Ashgate Publishing, Ltd., pp. 163–174.
Rose, D.B. et al., 2012. Thinking Through the Environment, Unsettling the Humanities. *Environmental Humanities*, 1, pp. 1–5.
Schick, L. & Witzke, A.S., 2014, Atmosfæriske konstellationer - kunsten at økologisere. In M. Sørensen & M.F. Eskjær, eds. *Klima og mennesker. Humanistiske perspektiver på klimaforandringer*. Copenhagen: Museum Tusculanums Forlag, pp. 81–107.
Scott, E., 2013. Artists' Platforms for New Ecologies. In T.J. Demos, ed. *Third Text. Contemporary Art and the Politics of Ecology* (27) online supplement, Available at: http://www.thirdtext.org/artists-platforms-for-new-ecologies-arc [Accessed August 30, 2019].
Smite, R. & Smits, R., 2013. Emerging Techno-Ecological Art Practices: Towards Renewable Futures. In C. Apprich et al., eds. *Provocative Alloys: A Post-Media Anthology*. Lüneburg: Post-Media Lab & Mute Books, pp. 142–159.
Stengers, I., 2005. Introductory Notes on an Ecology of Practices. *Cultural Studies Review*, 11(1), pp. 183–196.
Tartaglia, O. & Tate, A., 2018. *Bureau of Meteoranxiety*, Melbourne: Blindside. Available at: https://www.blindside.org.au/bureau-of-meteoranxiety.
Tinnell, J., 2011. FCJ-121 Transversalising the Ecological Turn: Four Components of Felix Guattari's Ecosophical Perspective. *The Fibreculture Journal* (18), pp. 35–64.
Tribe, M., 2007. *New Media Art - Introduction*. Available at: http://atc.berkeley.edu/201/readings/New%20Media%20Art%20-%20Introduction%20-%20Mark%20Tribe%20-%20Brown%20University%20Wiki.pdf.
van Susteren, L., 2017. Our Moral Obligation: The Duty to Warn and Act. In The American Psychological Association & EcoAmerica, eds. *Mental Health and Our Changing Climate*. Washington, DC: ecoAmerica, pp. 57–57. Available at: http://ecoamerica.org/wp-content/uploads/2017/03/ea-apa-psych-report-web.pdf.