Post-Digital, Post-Internet Art and Education

The Future is All-Over

Edited by
Kevin Tavin · Gila Kolb · Juuso Tervo

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Editors
Kevin Tavin
Department of Art
Aalto University
Espoo, Finland

Juuso Tervo
Department of Art
Aalto University
Espoo, Finland

Gila Kolb
Schwyz University of Teacher
Education
Goldau, Switzerland

Berne University of the Arts
Bern, Switzerland

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Acknowledgments

PRAISE FOR *POST-DIGITAL, POST-INTERNET ART AND EDUCATION*

"This book is a necessary and overdue look at the relationship of art education and the post-internet age. The authors of this book provide context, theories, and evidence of how the field of art education is in the post-internet era (happily or kicking and screaming). This collection moves readers past the narratives of the dot.com era to our present day, where the digital is not an anomaly but part of our everyday reality."

—Ryan Patton, *Associate Professor, Art Education, and Chair, Department of Art Education, School of the Arts, Virginia Commonwealth University, USA*

"One of the most worrisome affects of the postinternet era is an emphasis on technologies over humanities, in academe as much as capitalism. It's no wonder, then, that critical pedagogy has emerged as one of the most vibrant creative practices of the last two decades. This book marks the emergence of a powerful movement, Postinternet Art Education, at a time when visual literacy and the ability to see the world from a different perspective are more urgent than ever."

—Marisa Olson, *Artist and Executive Director, Digital Studies Institute, University of Michigan, USA*

"Be prepared to be challenged about the internet being 'all over'; permeating culture and gaming our social communication. The ideas in this book are ripe for art educators who thrive on the ways our hearts beat

faster and critical pedagogical ideas flow while at the same time… our minds are literally blown!"

—Pamela G. Taylor, *Professor Emeritus VCUarts, Virginia Commonwealth University, USA*

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Notes on Contributors

Helena Björk is an Art Teacher at Lyceiparkens skola, Finland, working with pupils aged 13 to 15. She teaches classes on art and other visual cultures, including moving images. Björk has also worked internationally with contemporary art through different arts organizations and as an independent art educator and curator in several projects that have included workshops, exhibitions and writing. Her research interests and practice are centered around contemporary art, dialogue and the agency of adolescents. With an approach across disciplines and a firm belief in the political power of imagination, she thinks of art class as a place for growth and adventure.

Tomi Slotte Dufva (Doctor of Art) works as a University Lecturer at Aalto University, specializing in emerging practices within art education. Slotte Dufva artistic work focuses primarily on the intersections between art, technology and science. He is the co-founder of art & craft school Robotti, which combines technology and art. Slotte Dufva's research revolves around the topics of post-digital art and art education, embodied digitality, art and tech, and societal, philosophical and cultural issues within AI and digitality.

Jan G. Grünwald is Professor for Art Education at the University Mozarteum, Innsbruck, Austria. His research focuses on critical art education, visual cultures, youth culture, media education and gender

studies. His books include *Male Spaces—Bildinszenierungen archaischer Männlichkeiten* (2012) and *Flickernde Jugend—rauschende Bilder: Netzkulturen im Web 2.0* (2011).

Annemarie Hahn is a doctoral student at the University of Cologne. In her dissertation, she deals with the relationship between material and human actors in art education with a focus on inclusive education. Previously, she was a research assistant at the University of Cologne, where she is working for the Grimme Research College as well as in the innovation project Flipping University in the field of learning spaces & infrastructural design. She studied art education, German language and literature and special education in Cologne and has a professional background in media design.

annemariehahn.com; methodemandy.com; art.uni-koeln.de/digitalthings.

jan jagodzinski Professor of Visual Art and Media Education, University of Alberta in Edmonton, Alberta, Canada; series editor for *Educational Futures* (Palgrave-Springer). He is the author of 17 books. Most recent titles include *The Deconstruction of the Oral Eye: Art and Its Education in an Era of Designer Capitalism* (Palgrave, 2010), *Arts-Based Research: A Critique and Proposal* (with Jason Wallin, Sense Publishers, 2013). jagodzinski, j. ed. *The Precarious Future of Education* (Palgrave, 2017) and jagodzinski, j. ed. *What is Art Education? After Deleuze and Guattari* (Palgrave, 2017). jagodzinski, j. ed. *Interrogating the Anthropocene: Ecology, Art, Pedagogy, the Future in Question* (Springer-Palgrave, 2018), *Schizoanalytic Ventures at the End of the World: Film, Video, Art and Pedagogy* (Springer-Palgrave, 2019).*Pedagogical Explorations in a Posthuman Age: Essays on Designer Capitalism, Eco-Aestheticism, Visual & Popular Culture as West-East Meet* (Springer-Palgrave, 2020).

Kristin Klein is a Research Associate at the University of Cologne, Germany. Her research focuses on art after the internet as well as art education and digital cultures, directed at future concepts in art education research and teacher training. In 2019, she published the anthology *Postdigital Landscapes. Kunst und Medienbildung in der digital vernetzten Welt* (with Willy Noll). She co-edits the platforms *PIAER Texte* (piaer.net/texte) and *myow—Workbook Arts Education* (moyw.org) with Gila Kolb, Torsten Meyer, Konstanze Schütze and Manuel Zahn.

Aaron D. Knochel is Associate Professor of Art Education and an affiliated faculty at the Art & Design Research Incubator (ADRI) at the Pennsylvania State University. His research focuses on art education, transdisciplinarity, and media studies. Publications include articles in *Studies in Art Education*, *Visual Arts Research*, *The International Journal of Education through Art*, *Parallax*, and *Kairos*. In 2020, he published a co-edited collection, with Christine Liao and Ryan Patton, titled *Critical Digital Making in Art Education* (Peter Lang). Generally, he tries to live up to his @artisteducator Twitter bio: artist-teacher-visual culture researcher-digital media flaneur-novice hacker and pixel stacker.

Gila Kolb is a Researching Art Educator. As of August 2021, she is professor of arts education at Schwyz University of Teacher Education and currently works as a lecturer in art education at Bern University of Arts and the University of Teacher Education, BUA & PHBern, Switzerland. From 2017–2021, she worked as a lecturer in art education at Bern University of Arts and BernUniversity of Teacher Education. In 2017–2018 she led the research project: "The Art Educator's Walk" on documenta 14 in Kassel. Since 2016, she publishes the Interview-Blog "The Art Educator's Talk." She is is co-founder of "Agency art education" and co-edits SFKP e Journal Art Education Research as well as the platforms PIAER Texte (piaer.net/texte) and the participatory platform myow—Workbook Arts Education (moyw.org). Research focus: Unlearning drawing in Art Education, Strategies and agencies in contemporary art education, Conditions and strategies of post-digital art education.

Paula Kommoss is an Art Historian and Curator. She currently works as research associate at the Hochschule für Bildende Künste-Städelschule in Frankfurt am Main. Most recently she curated the dance performance *It's my house and I live here* by choreographer Frances Chiaverini and writer Robyn Doty. In addition, she initiated the project space *Taubenschlag* with solo exhibitions by Julian Tromp, François Pisapia, and Vera Palme in summer 2019. Prior she was curatorial assistant at the Fridericianum and the German Pavilion of the 57th Venice Biennale.

Torsten Meyer is Professor of Art Education with a focus on Contemporary Media Culture at the University of Cologne. He studied Education, Sociology, Philosophy and Art at the University of Hamburg, University of Lüneburg and Hamburg University of Fine Arts. His academic

work focuses on Globalization & Digitalization, Next Art Education, Post-Internet Art Education, Mediology of Education, and the reform of schools and development of higher education in the twenty-first century. His publications include: What's Next? Vol. 1: Kunst nach der Krise (2013), Next Art Education (2013), Subjekt Medium Bildung (2014), What's Next? Vol. 2: Art Education (2015), Where the magic happens—Bildung nach der Entgrenzung der Künste (2016), Arts Education in Transition (2020). medialogy.de.

Grégoire Rousseau is Artist and Educator based between Helsinki and Paris. He has qualifications in Electrical Engineering and Master of Fine Arts. His artistic work questions the role of the machine, algorithms within the digitally controlled society, the complexity of neo-liberal interests in relation to public knowledge and to commons within technological space. For the last ten years, Rousseau has taught in the Finnish Academy of Fine Arts, where he developed and realized the first space dedicated to technology, opened in 2013. He regularly lectures on art within technological space, including at Aalto University, the ENSBA Paris, the French Institute in Finland, and at CAC Shanghai. In 2001, he founded the electronic music record label Tuulanauhat; in 2014, he co-founded Rabrab: the Journal for Political and Formal Inquiries in Arts, with Sezgin Boynik. In 2020, together with Juan Gomez, he launched Station of Commons, a platform of commoning practices within technological space. http://stationofcommons.org/.

Helena Schmidt is a Researcher and Art Educator in theory and practice. She teaches at the Academy of Fine Arts in Vienna, where she is working on her dissertation concerning the concept of so-called "poor images" (after Hito Steyerl). From 2015–2019 she was university assistant in the M.A. Art Education/B.A. Mediation in Art and Design at the University of the Arts in Bern. She studied art education, art history and visual communication at the Academy of Fine Arts in Vienna, Bern University of the Arts, University of Bern, University of Vienna and FH JOANNEUM Graz. Recent titles: *It's About Time. Critical art education in digital times* (with Sophie Lingg) (SFKP, 2020), *COMING BACK FROM IBIZA. The Instagram Account Ibiza Austrian Memes as a Case Study for Intersectional Meme Activism and Mediation* (with Sophie Lingg) (SFKP, 2020), *The Art of Art Memes* (with Gila Kolb) (kopaed, 2020), *Poor Image Art Education. On the Potential of Internet Imagery in the Classroom—an Overview* (zkmb, 2019).

Konstanze Schütze (curator and art educator) is Junior Professor at the University of Cologne. Her research focuses on art mediation and media education, particularly on Art and the postdigital condition and updates for an inclusive and critical art mediation after the Internet. She shapes inter-institutional approaches between museum, school and science, toward an inclusive, critical pedagogical practice. She is co-founder of the collaborative research project "Dear Humans, …" (office of academic heritage at TU Dresden), and co-producer/curator of the queer-feminist festival for post-digital performative arts "dgtl fmnsm" (Festspielhaus Hellerau), "agency art education" (Kassel), the gallery project "storecontemporary.com" (Dresden). Projects: storecontemporary.com/agencyart.education/methodsofart.net/http://piaer.net/ http://www.digitalfeminism.net/2018/.

Timothy J. Smith is an Artist, Educator, and Head of University-Wide Art Studies at Aalto University. His pedagogy and research is grounded in advancing social justice through critical methodologies and activism in art and art education, with a particular focus on post-internet art and network cultures. His most recent published articles on post-internet art and art education include "What Would a Post-Internet Art Foundations Course Look Like?" (*FATE in Review*, 2018) and "Critically Reframing Post-Internet Art Toward the Future of Art Education Curriculum" (*Art Education*, 2020).

Nora Sternfeld is an Art Educator and Curator, currently Professor of art education at the Hochschule für bildende Künste Hamburg. From 2018 to 2020 she was documenta professor at the Kunsthochschule Kassel. Between 2012 and 2018, she was professor of curation and art mediation at Aalto University, Helsinki. In addition to the above, she is also co-director of the /ecm—Masters Program in Exhibition Theory and Practice at the University of Applied Arts Vienna, part of the core team of schnittpunkt. ausstellungstheorie & praxis, a co-founder and continuing member of trafo.K: Office for Art, Education and Critical Knowledge Production (Vienna), and since 2011, a member of *freethought*, a London-based platform for research, education, and production. In this capacity, she also served an artistic director of the Bergen Assembly 2016. She regularly publishes on contemporary art, exhibitions, politics of history, educational theory, and anti-racism.

Robert W. Sweeny is Professor of Art Education at Indiana University of Pennsylvania. His research interests are primarily in the areas of digital visual culture; he is specifically interested in the relationships between art education and network science, surveillance, digital games, mobile digital media, and makerspaces. He is the author of *Dysfunction and Decentralization in New Media Art Education* (Intellect Press, 2015), and is the editor of *Inter/Actions/ Inter/Sections: Art Education in a Digital Visual Culture* (NAEA Press, 2011). He is the Associate Editor of *Studies in Art Education* (2019–2021) and the former Editor of *The Journal of the National Art Education Association* (2012–2014) and the Journal of Social Theory and Art Education (2009–2011). His research has been published widely in journals such as Studies in Art Education, Visual Arts Research, The Journal of The International Society of Education through Art, and the Journal of Social Theory in Art Education.

Kevin Tavin is Professor of International Art Education, and Head of the Department of Art at Aalto University, School of Arts, Design, and Architecture, Helsinki, Finland. Tavin holds a B.F.A., M.Ed., and Ph.D. in art education. He has taught K-12 and post-secondary courses since 1990. His research focuses on contemporary forms of art education, digital and visual culture, critical pedagogy, and psychoanalytic theory. His work has been published in international art and education journals and books, and presented as keynote and research papers. Recent books include *Stand(ing) up, for a Change: Voices of arts educators* (NAEA, 2012), *Angels, ghosts, and cannibals: Essays on art education and visual culture* (Aalto ARTS, 2016) *Experimenting FADS: Finnish art-education doctoral studies* (Aalto ARTS, 2016), and *Art, Education, and Excess* (Palgrave Mcmillian, 2019).

Juuso Tervo is a Senior University Lecturer and the Head of Master's Programme in Nordic Visual Studies and Art Education (NoVA) in the Department of Art at Aalto University School of Arts, Design and Architecture, Finland. His research and writing combine historical, philosophical, and political inquiries in art and education, drawing from fields such as literary theory, poetics, theology, philosophy of education, and philosophy of history. He received his Ph.D. in Arts Administration, Education and Policy from The Ohio State University in 2014, and since then has published in research journals and edited books both nationally and internationally.

Manuel Zahn is working as Professor at the University of Cologne. His fields of work are philosophy of education; media pedagogy, especially film education; and arts education in digital media culture. His work has been published in international academic journals and books. Latest titles: *Visuelle Assoziationen. Bildkonstellationen und Denkbewegungen in Kunst, Philosophie und Wissenschaft* (2018), *Education in the Age of the Screen. Possibilities and Transformations in Technology* (2019).

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Introduction: It's All Over! Post-digital, Post-internet Art and Education

Gila Kolb, Juuso Tervo, and Kevin Tavin

'How big is the internet?' asks an anonymous user in Jodel.[1] Reading the question on the display of a smartphone, amused by the presumed un-answerability of the question, one scrolls through the answers of other users: 'Without the porn pages, it would fit on a CD' or '324 bathtubs.' Since the app does not show this dialogue for longer than 24 hours, one takes a screenshot with a swift, orchestrated movement involving the thumb and the index finger. The image hovers briefly over the home screen only to reappear in the 'My Pictures' folder. As thumbs continue their semi-automated dance on the surface of the phone, this found object

G. Kolb
Schwyz University of Teacher Education, Goldau & Berne University of the Arts, Goldau, Switzerland
e-mail: gila.kolb@phsz.ch

J. Tervo
Department of Art, Aalto University, Espoo, Finland
e-mail: juuso.tervo@aalto.fi

K. Tavin (✉)
Department of Art, Aalto University, Espoo, Finland
e-mail: kevin.tavin@aalto.fi

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immediately continues its journey to another app in a chat to a colleague, who quickly writes back: "Nice start for our Introduction"—a text that is worked on simultaneously in Google Docs. Being behind of schedule, this shared, passing amusement offers a much-needed inspiration to write about the Internet, in the Internet, with the Internet, and through the Internet.

Why begin an introduction for a book about post-internet, post-digital art and education with a narrative that, in its everydayness, seems to make little sense beyond the particular time and place in which this book has been written? The obvious, yet complex, answer is that it is precisely this sense of everydayness surrounding the Internet and its social, technological, material, and bodily extensions that, we, as the editors of this book, find so fascinating and pertinent to art and education today. Being 'all over'—both in terms of being everywhere and functioning like a Midas' touch that, instead of gold, marks everything with an expiration date—the Internet is surely something as perplexing as 324 bathtubs saved in a screenshot.

The Internet, of course, does not simply only mean what we carry around with us—such as a smartphone in our pocket (Meyer 2014, 2020)—but all of its practices, and perhaps the endless entertainment and entanglements, between objects, humans, algorithms, and other nonhuman actors. As jan jagodzinski points out in his chapter in this book, the smartphone has become an entertainment center all on its own: television, music videos, Internet, geographical mapping, and so on, and this mediascape of the twenty-first century places us in a time where cognition takes a back seat, as the time-based material field provides the impulses and signals of transmission through the materialization of digital data.

In the 1990s, we went on the internet and imagined an immersion into the digital world in movies like Tron (1982). Today, the Internet has slipped into our back pockets and thus into the reality of everyday lives, and the sequel of Tron (2010) tells us about an algorithm that escapes its digital boundaries and disappears into the sunset of the real world. This immersion of the internet through smartphones into real life may mean asking the internet or Jodel users a question. The question about the size of the internet is formulated so openly that it can be both serious and a laconic side note, which can be expressed purely for the sake of social interaction. The question was typed into a smartphone

with minimal tactile activity with a thumb, but strictly speaking, finger-tips touched the glass of a minicomputer, and not, as was the case a few years ago, pressing down on plastic buttons. Michel Serres described users who take the operation of the devices for granted and explore the world with it as "thumbelina and tom thumb [Petite Poucette]" (Serres, 2014). According to Serres, however, they are not only distinguished by their ability to operate devices with their thumbs. He notes that they do not share the same concepts of spaces and time.

It is not only the practices of the different technologies connected with the internet that are constantly changing, but also the individuals and groups (and objects) that practice with them. The same device, and even the same apps[2] can be, and is, used very differently by different people as actors and nonhuman actors, and its use is also bound to peer groups. One could argue, as do many of the authors in this book, that humans (also including those who do not have a smartphone, who use it mainly to make phone calls by holding it to their ear, or by using it with their index finger) are in the middle of a social, political, and tech-nological shift in which digitality and the internet play a significant role. Yet, while this shift also affects how art education is practiced and under-stood, the global circulation of digital images and their social and political effects are not reducible to a technological apparatus called 'the Internet.' Rather, the shifting landscape of both human and nonhuman activities produces endless social and material entanglements that have overlapping, even conflicting consequences for art education. Indeed, in his chapter in this book, Knochel argues that art education of the future might not be limited to focusing on the Internet or even considerations of producing and consuming media, but to question the capacities of data structures, network formations, and hardware configurations.

At present, from our perspective, it is no longer a question of getting somewhere on the Internet, but of navigating with and through it, and it navigating us. This may sometimes seem magical and sometimes lead to astonishment, or what jagodzinski in his chapter calls sensations, affects, and percepts as peer-generated buzz occurs, a neurosynaptic chemical rush. As Klein, in her essay asks us to consider: Which fantasies and desires are inscribed in technologies and which ones are they in turn producing? For example, with the Sky Guide app, one can see stars under your feet (through the Earth, so to speak), or a Pokémon sits on the kitchen table in the augmented reality version of the app. While this amazement might eventually give away to everyday use and habit—eventually forgotten, or

no longer magical—it may nevertheless push us to desire something even more magical, some other rush to be experienced within the tightly woven and ever-blurred intersection of online and offline. One may ask, then, what kind of knowledge, effects, magic, astonishment, and boredom do such navigations through and with the Internet produce, now and in the future? What kind of further questions do they pose for art and education in a post-digital, post-internet era?

Within the last decade, 'post-digital' and 'post-internet' have become signifiers attached to artworks, artists, exhibitions, and education practices that deal with the relationship between online and offline, digital and nondigital, as well as material and immaterial. In terms of art, for example, Vierkant (2010) discusses the "physical space in networked culture and the infinite reproducibility and mutability of digital materials" (p. 3). Indeed, Vierkant (2010) not only speaks about post-internet art but also about "Post-Internet culture' (para 1) and "Post-Internet climates" (para 13). In this sense, Vierkant's descriptions apply simultaneously to post-internet art and all of its circumstances.

In what follows, this chapter investigates post-digital and post-internet art and education as a way of taking the present and future of art and education seriously, starting from the radically changed socio-technological conditions and its consequences. As Zahn points out in his chapter, this is a process that intervenes deeply in the world- and self-relations, by changing subject configurations, identity, memory practices, social configurations, ways and means of communication, as well as critical references to culture. Resulting from the logic of what Chan (as cited in Scherpe, 2011) has called the "Internet state of mind" (para 37), which suggests in part this fundamentally changed perception of the world, the different sections and the chapters of this book set out to attend to this condition from the perspective of art and its education. Next, we turn to the question of why now.

WHY THIS BOOK NOW?

One could argue that publishing a book at the end of the second decade in the twenty-first century with the term *post-internet* in its title may seem awkwardly passé. At least in the so-called artworld, the post-internet already happened; it had its moments (one epitome would be, for example, the 9th Berlin Biennale in 2016, when the term was already used in a derogatory manner), and now, as is custom, it seems time to

move on to other trends and scenes. For those who see art educators always lagging behind the artworld, this seeming awkwardness might be self-explanatory: when the so-called real work of art is done, art educators and mediators may focus on so-called beating the dead horse as they so often are claimed to do.

However, this book is not meant to be a claim for an entrepreneurial timeliness of the post-internet for art and education any more than a condescending history of a phenomenon. While the post-internet as a catchphrase used in the artworld certainly offers an important point of reference for the discussions at hand, the fact is that the world in which the Internet, as well as digitality in general, have become a 'state of mind' is a world in which art teachers, educators, curators, and mediators (i.e., not only artists) also live and work, and have been for some time now. Yet, since neither the world nor the Internet is simply two *tabulae rasae* for human activities to occur, but historically, socially, and politically layered and intricately entangled messes of local and global issues and agencies, this state of mind manifests itself quite differently in the various contexts and traditions of art and education.

Hence, instead of promoting a clearly delineated approach to art and education in these post-internet, post-digital times, one of the guiding ideas behind this book has been to gather locally and historically contingent practices and articulations with and through the post-digital and the post-internet. Combining different contexts and different aims, not to mention different styles of writing (i.e., not only the sense of writing but also how one spells out the term post or Post, or Post-, etc.), this book aims to challenge fixed narratives and field-specific ownership of these terms, and explore their potentials as well as limitations when discussing art and education today, and indeed in the future.

This book gathers perspectives on post-digital and post-internet art and education from teachers, educators, theorists, artists, and curators based in Northern Europe and North America. This means that the book addresses the Internet and digitality mainly as they are used and understood in the so-called global North. As Klein and Smith point out in their respective chapters, limiting oneself only to this perspective runs the risk of reproducing a Eurocentric history of art, education, and technology that neglects its own uses and abuses of power. If, indeed, the 'Internet state of mind' has really changed the world in which artists, educators, and curators work and live, it is important to ask, who frames this world and its change, how, and what kind of future(s) this change is expected

to engender. Asking such questions is precisely what Rousseau and Stern-feld encourage in their chapter in which they envision radical post-digital and post-internet artistic practice and education beyond the corporate spectacle of Silicon Valley capitalism.

Besides artistic and educational practices, the post-internet, post-digital state of mind also affects the way that art and education become conceptualized and theorized, whether together or separately. Going back to the idea that one no longer goes into the Internet but instead navigates with it (or it is in many cases it navigates us unknowingly), the omnipresence of online/offline interfaces requires conceptual and theoretical frameworks that are sensitive to their agencies in schools, galleries, museums, universities, and art studios. For example, as Meyer, in his chapter, argues that hanging onto the Humboldtian subject of Bildung might not be helpful when trying to grasp the interconnectedness of networked subjects and agencies of the post-digital world, meaning that a new theory of subject (or *Sujet*, as Meyer calls it) is needed. Furthermore, Schütze, in her chapter, agrees by stating that one such aspect would include the subject of education, which has been subjected to transformation and seems to have transgressed even further within the mesh of current conditions to dissolve into complex structures.

The Diversity of Posts

Throughout this book, we, the editors, made a conscious decision to not demand that the authors write in a unified way when addressing post-internet or post-digital, either separately or together, whether discussing art, space, networks, meanings, etc. As mentioned earlier, this included not only the way the terms were written (i.e., capital letters or small letters, or use of hyphenations or not), but more importantly, the way the terms are defined, given, taken-up, or passed over in each chapter. We agree with Schmidt and Klein, in their respective chapters, when they argue that the term 'post,' in post-internet, does not mean that the internet is over. Instead, we choose to let the diversity of style, form, and use by the authors stand as an answer to the question, 'what might post-internet art and education be?' rather than a definition, for our current times. These answers were drawn from practices—as educators, theorists, researchers and therefore are related to the present. As if chasing 'after the internet' and 'after the digital,' we prefer to leave exposed everything in this book discussed through the lens of post-internet and post-digital,

and allow the readers to draw their own conclusions about what these terms entail.

We wanted the concepts to be interpreted by the readers, depending on their discursive and performative context, whether they view them as controversial, fragmented, or constantly transmuting. Like Schmidt, in her chapter, we resist the idea that the term 'post' refers to something that always follows something older (although it does owe a debt of some kind), or always points to something new. Instead, we see the prefix 'post' pointing to an entanglement between continuity and discontinuity, where the now delineates a present that is not, prima facie, new. Instead, the post-ness of the present, whether referring to digital or art, may offer a productive critique of both a future-oriented logic that conflates historical progression with a constant production of the new, and an inquiry into how to actualize its potentiality (Tavin & Tervo, 2018). Instead, in this book, we attempt to follow Bridle's (2012) idea that post-internet and post-digital

> is not a space (notional, cyber or otherwise) and it's not time (while it is embedded in it at an odd angle) it is some other kind of dimension entirely [sic]. BUT meaning is emergent in the network, it is the apophatic silence at the heart of everything, that-which-can-be- pointed-to ... an attempt to do, maybe, possibly, contingently, to point at these things and go *but what does it mean?* (para 35–36)

While we argue that it is important to keep these two concepts open and wish to not exhaust them by giving them strict definitions, we also understand that readers may want (or need) to start somewhere to better understand these concepts. One place to begin is the very well-written chapter by Klein, where she provides a genealogy of the terms, especially as they originated in the field of art theory and discourse. Moreover, Sweeny's chapter offers a historical perspective to the contested relations between digital artistic and educational practices in the United States, tracing them back to coding structures from the 1940s, hypertexts from the 1980s, and net.art from the 1990s. Reading these two chapters side by side demonstrates well how the post-internet or post-digital as *concepts* are not traceable to one single, historical point of origin, even though as *words* their emergence might be possible to locate (as in the case of the term 'post-internet,' which is often credited to artist Marisa Olson). Following Skinner's (1995) claim that concepts may have a long and

complex life before there are words to describe them, it is possible to say that the semantic and grammatical volatility of the post-internet and the post-digital points to the fact that the history of these two concepts is still in the making.

The Old and New: Theories and Configurations

In terms of intellectual genealogies, the book brings together older and newer theoretical frameworks to discuss subjectivities, pedagogies, and actions in a post-digital and post-internet world. Like with the history of these concepts, the frameworks utilized by the authors do not form a coherent, unified theory of post-internet, post-digital art or education. Rather, they unfold a rich and interconnected network of texts, thinkers, artworks, technologies, and materials in which artists, educators, curators, and academes currently navigate—or perhaps the network that navigates them.

There are, of course, theoretical points of convergence. For example, many of the authors, including Hahn, Meyer, Knochel, and Schütze, discuss the post-digital as it is related to posthumanism, Actor Network Theory (ANT), and new materialism, in order to better understand the co-formation of human and nonhuman actors within social and ecological configurations of the present. The topicality of these frameworks is understandable, given that they offer a rich language to address the mutable landscape to which the post-internet and the post-digital refer. Yet, the authors in this collection demonstrate the importance of reading these concepts vis-à-vis theories, writings, and artworks also aside from the so-called usual suspects of posthuman thought (Barad, Bennett, Deleuze, Latour, etc.). These constellations of multiple genealogies of thought and practice include Björk's significant attention to Brecht's concept *Verfremdung* when discussing post-internet art education in lower secondary school in Finland, Meyer's focus on Lacan's Borromean knot when theorizing networked subjectivity, and Rousseau's and Sternfeld's use of Freire when discussing critical practices of education and digital commons. The same applies to Smith's contribution, which offers a strong case for opening the discussion of post-internet art beyond White artists and their narratives of the Internet. Indeed, this may be another way to understand how post-internet is 'all over.'

As editors, it has been our hope that the various conceptual configurations of the post-internet and post-digital included in this book generate

a network of existing and emerging theories and practices where it is possible, and even desirable, to pair an in-depth investigation of the educational potentials of the doubt (leading to digital glitches), as Grünwald offers in his chapter, with Slotte Dufva's discussion of creative coding as composting—two texts that guide the reader to move within an open landscape between Haraway and vaporwave. Similarly, chapters by Kommoss, Kolb, and jagodzinski invite the reader to reflect on the aspects of the body and touch in post-internet, post-digital art and education; a topic that acquired a whole new relevance and meaning in the wake of Covid-19 pandemic that hit the planet while this book was being written. Ranging from jagodzinski's deep engagement with thinkers like Virilio and Stiegler, Kolb's attention to mediated as well as mediating abilities and gestures of the body, to Kommoss's discussion of sex and intimacy in the digital era, the variegated concept of the post-internet, post-digital body that emerges from these chapters is anything but fixed, or even something that can be claimed completely *new* or hopelessly *old*. As in the Internet itself, the old and the new are intimately entwined and have the potential to meet in unexpected constellations. This being said, we hope that the timeliness of this book stays true to the narrative that begins this introduction and yet simultaneously encourages both present and future readers to look beyond what it describes. This includes different ideas of teaching, practice, and pedagogy.

Pedagogical Observations, Suggestions, and Teaching Practices

> This goes to the digital immigrants: The dominant culture of Next Art Education is the culture of the digital natives. It is a culture that is emerging in this very moment. We do not have any experience here. (Meyer, 2014, para 6)

When Torsten Meyer wrote these lines as part of "Next Art Education. 9 Essential Theses," the iPhone 5 was new. Since then, new digital cultures have emerged as well as new technology. Following up the nine essential theses that Meyer presented back then, we have to accept the 'internet state of mind.' In 2020, we already reached the 'post-digital state of mind'. We (as educators, researchers, and so on) should *deal with it*, as one currently popular meme format has it. But what does this exactly

mean? The research group, *Post Internet Arts Education research*, initiated by Torsten Meyer at the University of Cologne has been researching and working on digital and post-digital art education since 2015 and, therefore, a major contribution to basic research on post-internet art and post-digital culture in this book stems from that research group. Focusing on the changed conditions for art education and cultural media education in the domain of 'Internet state of mind,' this group brought together art, media, and cultural studies, raised research and pedagogical questions, and created a transdisciplinary context for research and teaching. However, until this book, most of the available publications from the members of the group were in German, for example, Eschment et al. (2020), Klein and Noll (2019), Meyer and Jörissen (2014).

Apart from those publications in German, some members of the research group, in 2017, developed *MYOW—Workbook Arts Education* (Klein et al., 2020), an Open Educational Resources (OER) platform for innovative concepts of art education, gallery education, and cultural media education with special emphasis on current media culture(s) and post-internet art. In this OER, practical concepts of participants in the field of art and cultural education publish their teaching methods in order to address art teachers, cultural educators, and practitioners of cultural media education. Considered as a resource and action-based research, different agents of art education cooperated, developed, and made available innovative concepts of art lessons and cultural media education in the context of digitalization. With this outreach platform, other teachers were invited to use the methods, reflect on them and participate as well. In the post-internet, post-digital age, it makes total sense that this is how a 'workbook' for digital art education works.

One might argue that different post-digital perceptions and usage have something to do with different generations. In a sense, the post-digital is not new—it just works differently for different people. As Tomi Slotte Dufva demonstrates in his chapter with the exercise 'A week in hell,' when students are asked to use different digital tools and software than they have been accustomed to, it becomes clear how diverse the use of technology and software is and yet at the same time conservative as well. As soon as we are asked to shift slightly our familiar paths in the digital world, often tools and software become nearly unusable or useless (for example, might you imagine shifting your keyboard from a Windows system to Mac, or vice versa?).

However, it is not only about the things we are familiar with or used to using. The post-internet state of mind in education mobilizes a reflection on how power relations can be addressed or commented on—be it with humor or subversion. One example would be memes, which are widely circulating combinations of images (still or moving) and texts. Memes are not only easy to reproduce and distribute, but just as easy to produce by oneself. Memes offer an ingenious platform for commenting on everyday things and events, often in a humorous way. But memes are not only used by young people, and, of course, not just for fun. They are also used for overt political purposes including specific right-wing propaganda (Lingg & Schmidt, 2020). In addition, there are activist meme accounts that consciously use memes to convey feminist, anti-racist, intersectional, and other progressive content. What we can learn from memes is that a form of communication first used by so-called internet nerds became mainstream and political in a very short period of time, and as Schütze (2020) points out, part of national politics in the United States.

In addition to a post-internet and post-digital state of mind, there is another global shift: Covid-19. During this global pandemic, that started in early 2020, followed by national lockdowns in most countries in the global north, education began to move to 'online' only. This significant shift, especially for art education, sparked various reactions. For example, there was the denial of the possibility to teach any so-called creative design activities online. In addition, there was a great need to collect and share information on methods, didactic concepts, Open Access Databases, Open Education Resources, and Open Source Software that students could connect to and afford. There were strategies to collect this information in publicly accessible documents, where main topics of digital art education and best practice examples were continuously linked and shared, e.g., by Bali and Zamora (2020), Syjuco (2020), Kolb (2020), and Shared Campus (2020). While this practice existed before Covid-19, the global pandemic seemed to help to collect and increase the diversity of media in digital teaching and facilitate the entry, or changeover, to digital teaching formats through a variety of examples—and even to help organize people. As Kolb points out in her chapter, digital art teaching is possible and not second best, even if, and especially because, the body is not involved in the same way than in an analogue setting. Therefore, all the authors in this book, one way or another, believe digital art teaching needs rethinking. To take it even further, this process might even lead to unlearning in educational futures.

About This Book

Beyond this introduction, this book is divided into three parts. **Part I: How did we get here? Historical, theoretical, critical, and future-oriented perspectives on post-digital and post-internet art & education** consists of five essays. The first one is Kristin Klein's, *Post-Digital, Post-Internet: Propositions for Art Education in the Context of Digital Cultures*. Klein addresses the concept of digitalization and post-internet acts as symptomatic descriptors of digitally permeated cultures. Klein explores them both through a deep genealogy, as a technological process embedded in social, political, and historical interrelations. Similar to other authors in this book who explore these concepts, Klein references important scholars and artists, such as Barad (2007), Bridle (2013), Latour (2005), Manovich (1999), Olson (2012), and Vierkant (2010). Starting from a broad understanding of each concept and its interdependencies, Klein extends the discussion through four theses, specifically concerning aesthetic aspects. They are (1) distributed artworks, (2) hybrid subjects, (3) fluid materiality, and (4) blind spots. Each thesis leads to a proposition for art education dealing with digital and post-internet cultures. Klein concludes her chapter by highlighting art education's potential in reflecting on digital and post-internet cultures, and in developing new models and methodologies for practical application.

The next essay is by Robert Sweeny. In *Post-Internet Art and Pre-Internet Art Education*, Sweeny starts by first describing the early history of the Internet, using historical and familiar concepts from Bush (1945), Castells (1996), and Manovich (2001), and argues that forms of interaction and engagement facilitated by this history have led to a post-internet condition. By inquiring into the history of (North American) art education in a networked era, Sweeny describes what post-internet art, as a distributed structure of knowledge formation, might offer. For example, Sweeny describes the release of Netscape Navigator in 1994 as allowing Internet access to an audience beyond academia, and points to numerous North American art educators who took advantage of this hypertext software. While he rightly points out that the Internet was used commercially and artistically well before Navigator, it did open up possibilities for art education that were previously underdeveloped as decentralized networks. Sweeny not only provides a list of art educators who used Internet technology to challenge the field, but also lays bare the divide between formal

schooling, which is generally centralized, and the decentralized network of what one might call de-schooling.

Sweeny points out that post-internet art and its antecedents represent a challenge to previous artistic concepts that tended to view the utilization of networked digital technologies as either the fulfillment of utopian fantasies of ego destruction, or the dystopian realization of a posthuman nightmare. Sweeny specifically cites McHugh (2010) as someone who, early on, was highly critical of post-internet art. After referencing numerous artworks, Sweeny argues that, again, for formal schooling, there was a force that did not allow fully allow art education to fulfill its potential in a decentralized system (regardless of all the talk of rhizomatic structures). Sweeny ends his essay by suggesting that art educators might be attentive to the aspects of the internet that are most frustrating, most confusing, and most troublesome, and look to the ways that daily life folds together online and offline interactions in increasingly complex and confusing ways.

The third essay is an attempt to provide a broad and critically theoretical understanding of the particular concepts related to post-digital and post-Internet. In his essay, *A Meditation on the Post-Digital and Post-Internet Condition: Screen Culture, Digitalization and Networked Art,* jan jagodzinski problematizes the history and current state of screen culture, digitalization, and networked art. jagodzinski draws in large part on the theories of Virilio (2000) and Stiegler (2018), and highlights some of the difficulties they have articulating conceptual discourse about the current speed of technologies. Throughout his essay, jagodzinski also refers to the work of Deleuze and Guattari (2001), to make more complex the concepts, and argues that the contemporary post-media condition shapes the post-digital and post-Internet condition, where the media image dominates across screens and interfaces. Media convergence, jagodzinski states, is where every mass media eventually emerges to a point of becoming one medium due to the proliferation of hybridized communication technologies. Similar to Sweeny, jagodzinski reviews networked art installations as exemplars of resistance, that exemplify one aspect of the networked digital image, this time in relation to the concerns raised by Virilio and Stiegler. In the end, jagodzinski argues that there is 'no going back' to analog. He ends his essay on a question mark as to where to turn to next, for an art and education future.

The fourth essay in this section is by Konstanze Schütze, *Bodies of Images: Art Education after the Internet.* In her essay, she explores a

series of thought experiments for an investigation of what one casually calls *the image*. By using the example of Internet memes, circulating political imagery, formations of classics in art history, as well as contemporary art, images are reintroduced as entities embedded in complex structural realities that are both driving and driven forces of culture. In this endeavor, Schütze renders them as *bodies* compiled from versions of themselves (bodies of images), explored as embedded in dissemination processes (memeplexes), and hence contoured as highly effective structures with sophisticated potential for transformation (image objects). She uses three major theoretical concepts that also resonate with other essays in the book (meme theory, object-oriented ontology, and network effects) for thinking through the *re*-interrogation of the image. In addition, Schütze's suggestion is that images are bodies, and should be read as *entities* that actively, or inactively, form structural assemblages and maintain energetic human and nonhuman constellations, echoes jagodzinski's 'tech-no-body,' albeit in a more productive claim. In the end, Schütze sketches a professional habitus is in which art educators are experts for *image relations*.

The final essay in Part I is *Post scripts in the present future: Conjuring the post-conditions of digital Objects*, by Aaron Knochel. Here, Knochel navigates the post-conditions of digital objects, from post-media to post-internet. As with the previous chapters, Knochel engages with theorists such as Deleuze and Guattari (1987), and explores how might making and learning, in art and media education, respond to pervasive connectivity that blurs online and offline distinctions. This theme—online and offline—again, is pervasive throughout the book, and Knochel offers his unique perspectives on speculating a future of algorithms, connectivity, and issues of access. In addition, Knochel makes an argument to advance a range of theoretical tools that may provide insight as to the immanent qualities of data and connectivity that impact making and learning in the arts has made. Similar to other authors in this collection, he focuses on posthumanism and post-theories constructed to provoke the dynamism of materiality. His distinctive take on materiality focuses on digital objects that are conceptualized to understand new opportunities for contemplating artists working in 3D modeling and digital fabrication. Knochel offers insights into the possibility of making meaning in this post-digital moment.

The next grouping of essays belongs to **Part II**: **Why is this important for art education? Transdisciplinary networks, research, and**

subjectivities of the post-digital and post-internet. The first chapter in Part III is a dialogue between Grégoire Rousseau and Nora Sternfeld, *Educating the Commons and Commoning Education: Thinking radical education with radical technology*. Both authors understand education as a universal right and public good, especially through Sternfeld referencing her influence by Freire (1970), hooks (1994), and Laclau and Mouffe (1985), but also recognizing current forms of education as increasingly facing the processes of economization and privatization. Rousseau, on the other hand, discusses technology as understood as a common means of production when collaboratively developed, as demonstrated in part by Stadler (2013), but at the same time also makes the argument that it is taken away from the public and put into corporate hands. The dialogue comes in the form of a conversation that investigates the question of shared and common knowledge from the perspectives of an educator and an engineer, respectively. The back and forth between Rousseau and Sternfeld explores necessary convergences in radical practices of commoning, and possible future strategies for education and Open Technology. They ask how new models can challenge the neoliberal agenda and move away from established policies, and how a collective re-appropriation of the means of production could emerge within a post-digital society.

The second essay Part II is *A new Sujet/Subject for Art Education* by Torsten Meyer. In this important essay, Meyer first reviews some fundamental ideas of newer theoretical trends such as Actor Network Theory, Speculative Realism, Object Oriented Ontology and Posthumanism, that have been brought to bear in new generation of (post-internet) artists who no longer regard the radical change in the socio-technical conditions of digital media cultures as something special or new. This mirrors some of the previous discussions by authors such as Knochel, who focused on nonhuman actants and actors in art education, digital software, and art, and Schütze, who spent a significant amount of time referring to image objects, active objects, objects with agency, and especially compound objects. In addition, other authors in this book, such as Hahn, discuss new materialism, and the dualistic categorizations such as subject and object, and Klein considers digital transformation and reformation possibilities, such as digital materiality as an important area of research in art education. Like Meyer, all these authors refer to different contemporary

theories on materials, nonhuman actors, and objects as areas in art education that acknowledge the seriousness and import of digital things and the idea that networks are not only digital.

As pointed out above, Meyer argues that these ideas have leaked into art education and also the very concept of what constitutes a 'subject.' He contends that the assumption that the humanistic conception of the human individual as a subject, and the associated understanding of education in modernity, no longer matches neither with the artistic practices based on collaborative networked socio-technical processes that can be observed in the post-internet culture. He states that changing mediality leads to changing subjectivity. Based on findings of the Cologne-based research project *Post-Internet Arts Education Research*, and using Lacanian and other theories, Meyer introduces the figure of the *Sujet* to make plausible a perspective on art-based learning processes that is appropriate to the respective overall situations in which these processes (can) take place. Outside of the Cologne-based group, Meyer's work with Lacan also falls in line with jagodzinski's work on new concepts of the subject (2007, 2012, 2017, 2019, 2020).

The subsequent essay in Part II is *New Intimates*, by Paula Kommoss. In this compelling essay about love, touch, sex, and most importantly the concept of intimacy, Kommoss considers how contemporary digital technology is dramatically changing the ways in which each is perceived and manifested. She argues that to be able to stay in touch, one is dependent on virtual forms of communication through computers and smartphones. These modes of online communication are increasingly generating a paradox of physical anonymity and virtual intimacy. Kommoss makes the case that increasing touch-responsiveness of tablets responds to the current concern that through a constant touching of the screen the human touch becomes redundant (whether that concern is warranted or not). Nevertheless, as she demonstrates through her deep interpretation of multiple post-internet artworks, including Trecartin, Mills, Stark, and Atkins, the notion of touch remains relevant, allowing for a critical investigation of the use of physical tactility within the contemporary art world. In addition, Kommoss takes a close look at the workshops of the educational duo soppa&bleck to offer an insight into art education's approach toward the digital, and thus intimacy. In the end, Kommos's chapter provides both a deeply theoretical approach and interprets contemporary post-internet art from through a range of approaches to bodily closeness in the post-digital age.

The next essay is *Notes on Corpoliteracy: Bodies in Post Digital Educational Contexts*, by Gila Kolb. The essay is grounded in the belief that learning and knowledge inscribe themselves into the body. Kolb, similar to Kommoss, argues that more attention to the body and touch should take place, especially in educational programs, and certainly as teachers and learners increasingly meet in digital learning environments. The essay is both a critical reflection on different ways we use 'the body' (or ways we are supposed to use the body) in formal education, and an exploration of current digital teaching and learning settings in the times of Covid-19. Kolb offers educators five examples of how bodies are read and understood differently in the digital world and asks us to reconsider our practices now, and in the future.

Following Kolb's chapter is an essay on the perspective of media education theory and aesthetic education. In his essay, *Aesthetic Practice as Critique: The Suspension of Judgment and the Invention of New Possibilities of Perception, Thinking, and Action*, Manuel Zahn discusses some considerations of aesthetic practice or what he calls 'media-critical practice.' He describes media-critical practice as a reflexive-transformative practice *with* and *in* media, that no longer has a distanced, self-reflexive and rational critique *of* media, or media use. Similar to other authors, Zahn uses multiple contemporary and traditional theorists in his rethinking of critique, including Adorno (1959), Deleuze and Guattari (1987), Rancière (2006), as well as jagodzinski's (2017) work on art and education *after* Deleuze and Guattari.

In addition to the aforementioned theorists, Zahn focuses heavily on Foucault's (1992) concepts of critique and apparatus, further developed by Badura's (2011) concept of *aesthetic apparatuses*. Like Kommoss, Zahn then approaches Trecartin's post-internet artwork. Zahn explores 'Re'Search Wait'S' (2010) and makes the case that post-internet aesthetic practices require a new language of critique when dealing with the relation between humans and contemporary media-cultural environments. That is, like Foucault's concept, critique is interested not only in elements and rules that constitute the social game of subjectivations and their regularity, but above all in how these rules can be changed. From this perspective, subjects no longer intentionally deal with media, but first and foremost become subjects in relation to medial apparatuses, as discussed in a different way in Meyer's chapter.

Following Zahn's text is the essay by Schmidt: *What is the 'Poor Image' Rich in?* Schmidt presents the potential of 'poor images,' a term coined

by Steyerl (2009) for a contemporary critical mediation of art, especially in schools. Originally, Steyerl described the 'poor image' as a 'copy in motion.' This meant a visual replica of an original image meandering through the Internet, gradually losing information. Schmidt takes up this concept ten years after later and argues that they have become part of our everyday visual practice. Schmidt reflects on her own teaching practices with poor images, and how she used them as a potential starting point, not only as inspirational material, but also as raw material for further processing. After starting her own Instagram account @poorimagearteducation, Schmidt asked students to create an art meme based on works from art history.

Two students in her course used digital cut-outs from paintings by Hieronymus Bosch and created a speculative story about the painter's supposed inspiration for his fantastic figures in the painting. They re-enacted these figures with their own bodies, and with objects found at the university, which they quickly and intentionally assembled into new 'bad' collages using Photoshop. Then, they juxtaposed these with the corresponding cut-outs. The students claimed they were original themselves, on which the art historical icon is based. In doing so, they intentionally use a trashy pictorial aesthetic and thus expose the traces of their working method. They transformed the image into a poor image, but also made a poor image out of themselves, using hashtags, such as #nofilter, #italiannana, and #deathbychocolate. In the end, Schmidt makes the case that because, in part of numerous developments, these poor images are no longer poor the way Steyerl once described them, and asks the readers to consider to what extent these images are relevant for art education.

The final section of the book is **Part III: How to deal with it being all over and how can we create educational futures? Classroom and pedagogical practices examples of post-digital and post-internet art education**. The first essay in the section is *Educating Things: Art Education beyond the Individual in the Post-Digital*, by Annemarie Hahn. In her essay, Hahn argues, similar to other authors, that current digital infrastructures have not only profoundly changed the way people communicate with each other, but also the physical conditions in which people relate to other people, people relate to things, and also things relate to things. In doing so, Hahn also builds on some of the same theorists as other authors in this book, such as Barad (2007), Latour (2014), and Foucault (1969). She makes the point that these emerging alliances between people and things have an impact on the relationships between

human and nonhuman actors, and thus also on concepts of individual subjectivity. While subjectivity is also a pervasive topic, the essay, however, exclusively focuses on the exhibition "Co-Workers - Network as Artist" at the MAM in Paris (Lykkeberg, 2015). Using neo-materialistic theoretical approaches, Hahn argues that a new relationship can be observed between the artist-subject and the art-artefacts, which places the materials in the focus of the dissonance. This displacement is to the disadvantage of the individual artist-subject. In her chapter, these theoretical considerations are exemplified by an examination of the relations between people and things in the exhibition, particularly focusing on the understanding of digital materiality.

The second essay is *Toward an anti-racist and anti-colonial post-internet curriculum in digital art education*, by Timothy J. Smith. In the article, he examines how reframing post-internet art through anti-racist and anti-colonial lenses in digital art curriculum might cultivate critical and transformative artist practices for students. As discussed in the beginning of this chapter, anti-racist and anti-colonial approaches may offer frameworks for critically analyzing identity, ideology, and power relations by decentering the art canon from the Global North, and qualitatively shifting curriculum toward critical dialogues and social action. Through a retrospection of Smith's own active and ongoing transformation as a teacher, as well as through an analysis of Tabita Rezaire's post-internet art practice, this essay builds a pedagogical foundation for students to generate their own critical consciousness in learning and artmaking through a digital art curriculum.

Following Smith's essay is the third in Part III, *Embracing Doubt: Teaching in a Post-Digital Age, by* Jan G. Grünwald. In the article, he makes the case that schools are still mostly concerned with transmitting a canon of what is important and with it produces a certain type of teacher. According to Grünwald, when teachers have to try to create a situation in class, such as imagining school as a futuristic endeavor, something new can emerge. However, since the concept of the teacher seems to remain that she or he is the one who owns knowledge (in contrast to students who don't) it is understandable that teachers have doubts about creating a situation out of the usual boundaries of 'I know – you don´t.' In this essay, Grünwald argues that if we want to teach adequately for the post-digital age, we have to embrace doubt as a force that is anti-status quo, and falls out of the usual teleological approach of teaching. According to Grünwald, this approach translates into practice because the teacher does

not know which outcome an educational situation will have, they must improvise. The essay focuses on this approach in the classroom, which denies classical power structures and the need for a dominant leadership of the teacher.

The next essay in this section is by Tomi Slotte Dufva, *Creative Coding as Compost(ing)*. Slotte Dufva focuses on creative coding practices within a university-level art education context. Drawing from earlier literature and combining it with current research, his essay takes a feminist approach to creative coding and examines the importance and possibilities of different code-related art educational practices in the post-digital world(ing)s. Slotte Dufva's essay discusses how the post-digital takes place by using *compost* as a metaphor for art education practices. More specifically, this essay introduces three examples from courses taught at Aalto University that together form the digital compost: humus, care, and waste. Slotte Dufva's chapter closes with the discussion on further feminist approaches within post-digital within art education.

The next text is Helena Björk's essay, *Post-Internet Verfremdung*. Her work also discusses curricula. Björk presents a school assignment as a possible approach to online visual culture, though creating Instagram fiction. Björk argues that the ease of uploading images on Instagram has meant that a whole generation grows up paying closer attention to visual language. At the same time, Instagram and other social media have come to dominate visual culture to the extent that we might consider how to unlearn what they may have taught us. In her essay, the internet is seen not only as a vital part of visual culture but also as a site of learning. When students create Instagram fiction, Björk argues, we can understand how social media operate both visually and socially. Parody and estrangement, or the Brechtian *Verfremdungseffekt*, are examples offered in this essay to examine this phenomenon, and possibly activate critical thinking.

To conclude this introduction, we raise the issue of generational shifts. For example, Meyer (2020) explains that when he asked his students and also his own children (of the same age) to communicate via email (as the editors and authors did when putting this book together), they "tell me clearly: I only use email when I need to communicate with old people. Boom" (para 10). According to this logic, the book you hold in your hands is already outdated since the moment it was printed, created as a PDF, or made ready for downloading on some device to read. Of course, that does not mean that there are not many good reasons to read it, in whatever manner. Similar to schooling, just because is often based on a

system that passes on knowledge rather than one that creates knowledge, or challenges the very notion of knowledge, it doesn't have to stay that way.

The theoretical work and pedagogical examples in this book might help you to deal with a post digital state of mind. It encourages readers to shift ideas of criticality when teaching art in the post-digital and post-internet era, and to broaden the understanding of teaching and learning beyond one's own generational logics. The editors and authors of this book want to reach you, even if you see this book it in the same way Meyer's students see emails, with our desire hope that you will make something with and from it. We hope that it not only meets new futures, but also helps to create them, again and again, even if, and especially because 'it's all-over.'

Notes

1. On the app Jodel, texts and pictures can be published, read and commented regionally and anonymously.
2. See: Michael Seemann, Michael Krell (2017) Digital Tribalism—The Real Story About Fake News. https://www.ctrl-verlust.net/digital-tribalism-the-real-story-about-fake-news/.

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How did we get Here: Historical, Theoretical, Critical, and Future Oriented Perspectives on Post-Digital, Post-Internet Art and Education

Post-digital, Post-internet: Propositions for Art Education in the Context of Digital Cultures

Kristin Klein

Postdigital, in artistic practice, is an attitude that is more concerned with being human, than with being digital. (Post-Digital, 2019, para. 1)

INTRODUCTION

In this chapter, I address digitalization as a technological process embedded in social, political, and historical interrelations. Following a short introduction on digital cultures, I look at the genealogy of the terms Post-Digital and Post-Internet as discursive markers, originating in the field of art theory. Both terms are then extended through discussing four theses with a focus on aesthetic dimensions: (1) distributed artworks, (2) hybrid subjects, (3) fluid materiality, and (4) blind spots. Each thesis will lead to a proposition for art education research in the context of digital cultures.

K. Klein (✉)
Univeristy of Cologne, Cologne, Germany
e-mail: kristin.klein@uni-koeln.de

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Digital Cultures

Starting from the assumption that technologies, societies, and individuals are constituted reciprocally, it would be insufficient to conceptually base digitization primarily on technological deterministic explanations, i.e., to limit it to the history of electronic computers and digital technologies and their social influence (Baecker, 2007). On the one hand, although commonly postulated by the tech industry, digitalization does not describe an abrupt process. It is preceded by cultural-historical, social, and power-political structural conditions making cultural changes conceivable on a larger scale. One example would be, as Benjamin Jörissen (2016) states, "the organization of knowledge into proto-database-like < tableaus>" (p. 26). Digitization, he concludes, is only possible to the extent that it connects to existing cultural forms and their latent transformation potentials.

On the other hand, new information and communication technologies facilitate social transformations, which in turn point beyond the respective mass medium (Baecker, 2007) book printing, for example. The mass distribution of printed products essentially contributed to the literacy of the masses and, conversely, equally necessitated acquiring cultural techniques such as reading and writing as a prerequisite for societal participation. This in turn required the establishment of new institutions such as public schools, teacher training, ministries of education, publishing houses, libraries, etc., in order to install an infrastructure for disseminating these cultural techniques (Sesink, 2008). Possibilities of critically comparing and producing printed documents grew. In the long run, concepts of individuality, authorship, and personal rights are consequently diversified (Baecker, 2007; Sesink, 2008). In sum, changes in media conditions, are accompanied by changes in subjectivation, cultural techniques and also processes of institutionalization (Jörissen & Meyer, 2015). This connection, among others, is represented in the notion of *digital cultures*.

Post-Digital & Post-Internet: A Brief Introduction

Expressions like *Post-Digital* and *Post-Internet* imply that digital technology is interwoven with social, cultural, political and also geographical environments to such an extent that it results in new cultural, symbolic,

and material forms. Both terms surpass an understanding of digitaliza-
tion in the sense of discrete units that can be transferred into binary
codes or in the sense of hardware and software. The technical character
of digitization takes a back seat to socio-cultural factors. The prefix *post*
refers to relational transformation processes of material-cultural condi-
tions (Jörissen & Unterberg, 2019), modes of action and perception
changed by digitalization (Stalder, 2017), and new (power)structures
(Cramer, 2015).

Connotated in various ways, the prefix *post* in Post-Internet and Post-
Digital, is not to be understood like the prefix in *post-history*, which
denotes the end of history, but rather in the sense of *post-colonialism*.
Here, the prefix refers to less obvious, but no less pervasive power struc-
tures that have profound and lasting effects on languages and cultures
and, above all, continue to determine geopolitics and global production
chains (Cramer, 2015). Hence, the prefix *post* indicates that we have long
since gone beyond the novelty value of digitalization. That is, we are at a
point after the Internet and digital technologies were new, but at which
new forms of dealing with these developments are emerging (Cramer,
2016).

The prefix is often associated with the criticism of a positional function.
It is, in the eyes of artist Zach Blas (2014), an expression of uncertainty
about what is, and about what can become—an empty formula. More-
over, as Blas points out, it is politically charged, alluding to the past as
a compelling condition for the future. However, the prefix can also be
apprehended as a productive placeholder, as a still undetermined vari-
able that addresses the openness of digitization processes as "a zone of
activity" (Bourriaud, 2002, p. 17).

Post-Digital

At the turn of the millennium, the notion Post-Digital is discussed
in reference to digital technology as an expression of human desire.
Restrictions of binary ways of thinking that permeate everyday life are
fundamentally questioned (Pepperell & Punt, 2000). Coming from the
field of electronic music, for example, Kim Cascone (2000) uses the term
Post-Digital to critically distance himself from new technological devel-
opments. Instead of associating technology with the modern promise of
progress and striving for perfection, he is concerned with the possibilities

of subversive use of technology through aesthetic means. Flaws and fractures become a theme in his work, e.g. in the form of glitches, pictorial or acoustically perceptible disturbances of digitally composed processes, and structures.

A decade later, in the context of *transmediale* 2013, the Berlin-based festival relating art, culture, and technology, a change in the semantic meaning of post-digitality is evident. Although still associated with a claim to a temporal and critical distance, at the same time, the admission of an undisputable involvement in a digitally imbued present becomes apparent:

> Post-Digital, once understood as a critical reflection of 'digital' aesthetic immaterialism, now describes the messy and paradoxical condition of art and media after digital technology revolutions. […] It looks for DIY agency outside totalitarian innovation ideology, and for networking off big data capitalism. At the same time, it already has become commercialized. (Andersen et al., 2014, p. 5)

Originally, the term referred to practices of subcultural, anti-institutional and anti-laboratory aesthetic arts in the context of digitalization (Cramer, 2016). Today, Post-Digital represents a hub for contemporary art and for research projects that critically reflect today's information technology, industrial and political complexes and regimes. While it is well established in the arts, the humanities and social sciences and in transdisciplinary approaches (Jandrić et al., 2018), the Post-Digital concept has so far been less prominent in art education. This is mainly due to the fact that research on digitality in art education tends to center the individual and the use of digital tools rather than systemic thinking and broader implications.

Post-Internet

The term Post-Internet is predominantly used in fine arts, firstly attributed to the artist Marisa Olson (Archey & Peckham, 2014). In her view, since everything is now interwoven with digital technology, media-based art is no longer a niche and thus no longer a differentiating category within the art field. She therefore considers the term *New Media* obsolete. Rather, art is now concerned with examining the digital, and the Internet specifically, on a cultural level (Débatty, 2008). Olson further intensifies her original statement a few years later: "We are now in a postinternet

era. Everything is always-already postinternet" (Olson, 2012, p. 63). All art is therefore, to some extent, inevitably influenced by the conditions of the network society:

> This understanding of the post-internet refers not to a time 'after' the internet, but rather to an internet state of mind – to think in the fashion of the network. In the context of artistic practice, the category of the post-internet describes an art object created with a consciousness of the networks within which it exists, from conception and production to dissemination and reception. (Archey & Peckham, 2014, p. 8)

Gene McHugh (2011), in his discursive-journalistic blog on Post-Internet art, goes so far as to imply ontological shifts: "The Internet changed everything – that includes art. Post Internet artists are […] ontological questioners" (p. 15). And further: "It's not work about the digital computer network, it's work about contemporary art's own entanglement in the digital computer network" (p. 167). Artist and philosopher Louis Doulas (2011) concludes: "Post-Internet then, is not a category, but a *condition*: a contemporary art" (p. 2). Finally, Melissa Gronlund (2017) summarizes: "The years of post-internet art, from the mid-2000s to the mid-2010s, map out a time when the internet has gone from being a technology to a condition" (p. 214).

Post-Internet art is premised on the idea that technology is closely intertwined with culture, and with human beings. Rather than taking on a position from the distance, which is, however, not to be equated with or misunderstood as an uncritical approach (see Zahn in this publication), it identifies changes in artistic practice along the lines of networked art. The artist Artie Vierkant (2010) identifies moments, characterizing art Post-Internet as examples: "ubiquitous authorship, the development of attention as currency, the collapse of physical space in networked culture, and the infinite reproducibility and mutability of digital materials" (p. 1). They are, among others, starting points for the research focus *Post-Internet Arts Education* (PIAE, 2020) at the University of Cologne which Gila Kolb, Torsten Meyer, Konstanze Schütze, and I started in 2015. In different subprojects, it aims at understanding digital culture by systematically observing Post-Internet Art and in parallel zooming into specific artworks and media cultural phenomena in order to develop theoretically informed as well as practice-based models for art education in conversation with digital culture (Kolb & Schütze, 2020; Meyer et al.,

2019). This chapter gives insight into the first findings of an interview study I conducted with ten Post-Internet artists describing how their understanding of their practice has changed in the post-digital age.

While *PIAE* relates to the term's broader meaning, it also takes into account a shift that occurred after 2010. When an increasing number of exhibitions and art fairs made use of and contributed to commercializing the term, skeptical voices grew louder. The critique was directed at Post-Internet Art in reduction to a specific style, often accompanied by accusations of market-driven shallowness (see Droitcour, 2014). Moreover, Post-Internet art, when referred to as a social group, mostly consisted of artists socialized in the Global North who profited from the growing importance of the term, thereby enhancing the already existing power structures. The critique gradually resulted in artists distancing themselves from Post-Internet. As the curators of the 9th Berlin Biennial aptly stated: "People clutch their tote bags a little tighter when they hear the phrases 'big data,' 'filter-bubble,' 'post-internet,' and 'anthropocene'" (KW Institute, 2016, p. 55). At the same time, criticism concerning Post-Internet in and of itself reveals a specific understanding of and demands concerning contemporary art that is also further examined in the context of *PIAE*.

Despite this development, the expression Post-Internet is still in use today, often synonymous or next to various other terms, among them Post-Digital and Post-Media (Cramer, 2016). It is proving to be helpful to facilitate discussions on digital culture that do not encounter digitization with the luxury of a contemplative distance, but rather assume a close involvement with the present. However, it needs to be complemented by other perspectives and voices from different backgrounds in order to do justice to today's globally networked yet hyper-diverse conditions.

Post-Digital & Post-Internet: Attempts to Understand the Present

The essential difference between Post-Digital and Post-Internet is evident in the attitude toward digital technology: whereas the term Post-Digital initially tended to imagine a critical outside that would allow for a subversive use of technology, Post-Internet stands for informed action within existing structures of a conventional mass medium and its perfectly rendered surfaces (Cramer, 2015). In the meantime, the boundaries of

the terms have become blurred. They can now be understood as attempts to observe and describe the present by the following assumptions:

1. Post-Digital as well as Post-Internet mark a point in time when—after the introduction of user interfaces, web design, and social media—specialized computer skills are no longer necessary to use digital technology. It is entangled with everyday knowledge and media practices. In addition, one might add, it even has become a necessity for navigating the world today. From a global perspective, there are, nevertheless, substantial differences in how digitization manifests itself and also in terms of accessibility.
2. Both concepts acknowledge the fact that the Internet as a cultural landscape is different from what it used to be during the early days. While in the 1990s many hoped for democratization and more freedom through the Internet, connecting people among each other and allowing for more individual agency, it has now at the same time become highly commercialized and monopolized, owned for the most part by major platforms exercising their power.
3. Art referring to terms like Post-Digital and Post-Internet therefore, rather than focusing on technological innovation, examines and deals with digitality in its socio-cultural interdependencies and effects, while also being aware of related power structures.

Artworks relating to Post-Digital or Post-Internet sensibilities transcend conceptual-discursive descriptions and thus can contribute to a multidimensional understanding of digitization (Jörissen & Unterberg, 2019). Consequently, artworks reflecting digital cultures enable other ways of imagining or dealing with digitization.

In the following, research questions that are currently associated with both terms, Post-Digital and Post-Internet, will be specified under the broader denomination *digital culture*. I will focus on cultural and art-theoretical aspects especially relevant to art education. Artworks and art theory become, in different ways, the subject and occasion of the analysis.

Aesthetics and Technological Infrastructures

By now, applications of computer codes, protocols, standards, and data formats majorly impact the politics of everyday life. Oftentimes, their

influence remains invisible or incomprehensible. According to artist James Bridle (2013), aesthetics comprise the perceivable layer of socio-economic, cultural, and political changes intertwined with technology. Visualized GPS-tracks of joggers or AI-software generating *believable fake photos* of people always point to technological infrastructures, as Bridle states in his ongoing study *The New Aesthetic*:

> It is impossible […] not to look at these images and immediately start to think about not what they look like, but how they came to be and what they become: the processes of capture, storage, and distribution: the actions of filters, codes, algorithms, processes, databases, and transfer protocols; the weights of datacenters, servers, satellites, cables, routers, switches, modems. Infrastructures physical and virtual; and the biases and articulations of disposition and intent encoded in all of these things. (Bridle, 2013, p. 4)

Artworks make the processes of digital networked technology, most of which cannot be perceived through human senses, tangible and allow for them to be negotiated differently, for example by combining, visualizing, and narratively linking large amounts of data and images (artworks by Forensic Architecture or Nathalie Bookchin, for example). In turn, they can become the point of departure for further aesthetic reflection and processing.

Post-Digital aesthetic theories (Berry & Michael, 2015; Contreras-Koterbay & Mirocha, 2016) consult art, design, and everyday cultural phenomena for information about, for instance, processes of relationality and subjectivity in the context of digitality. Likewise, the term aesthetic as I use it in this text is not restricted to the narrower meaning of sensory perception, but also refers to societal and cultural conditions. The next four sections explore digital culture in aesthetic aspects, each introduced by a short thesis (in italics), which is then elaborated and complemented by art as well as educational theory. In their abbreviated, thesis-like form, they are to be understood as an initial offer for orientation and further discussion. Importantly, I want to invite readers to keep in mind that ideas of distribution, hybridity, and fluidity are only *one* expression of digital cultures. The continuities and traditions of art education are by no means to be neglected or automatically obsolete. On the contrary, I imagine the present as searching for dialogue with the past and future.

Distributed Artworks

In digital cultures, new modes of art production, distribution, and recep-
tion become increasingly important, leading to a new understanding of
artworks as well as authorship.

Compared to predecessors in art history, digital artifacts, or photos of
artworks can be changed, coupled, divided, and brought into different
contexts at an unprecedented level and speed. In the mode of *postpro-
duction* (Bourriaud, 2002), artistic self-understanding shifts. Now that all
digital reproductions are potentially changeable, artists increasingly make
use of the culturally given as raw material by remixing, copying, pasting,
and translating existing forms and cultural codes into new ones (Meyer,
2015). Ryan Trecartin's montaged films, for instance, through exaggera-
tion, quotation, and recombination of, among others, memetic gestures,
visual effects, sounds, and language at a high frequency, highlight and
make visible qualities of digital culture such as modifiability and inter-
connectedness. Here, symbolic forms of digital culture are superimposed,
thereby emphasizing the symbolic codes of their representation (Zahn,
2017).

At the same time, current cultural practices change familiar modes of
reflection and valorization systems. This can be observed, for example,
in the status of the artwork. On the premise of postproduction, art is
not necessarily to be understood as an "original work" (Meyer, 2015) or
auratic object. Trecartin's films, for instance, while being exhibited in the
professional art world, are in many cases freely available online. They are
widely distributed and subjected to the Internet's logic of attention and
reproducibility.

Online, aesthetic strategies differ from more traditional practices in at
least two aspects. Firstly, they combine human–machine interaction and
algorithmized modes of perceiving, distributing, and producing artworks
(Leeker, 2018). Secondly, they are characterized by dynamics of databased
(knowledge) production from which new cultural configurations and
practices emerge (Manovich, 1999). Developing an understanding of
both algorithmic processes and data architectures in their social impli-
cations can be enhanced by discussing artworks structurally. Here, the
networked image, the associations and relations *between* images and image
populations (Joselit, 2013; Sabisch & Zahn, 2018) as well as distributed

aesthetics (Gye et al., 2005; Schütze, 2020) come into play. In this way, and this is my first proposition, art education takes into account image circulation, platforms, hashtags, links, and likes as crucial elements of art and digital cultures.

Hybrid Subjects

> Digital cultures require new approaches to the (aesthetic) subject, which is fundamentally a hybrid, networked subject.

In digital cultures which are increasingly dependent on and influenced by algorithmic logics and database-compatible world production, the question arises of how subjectivity can currently be comprehended (Jörissen, 2017). Artists Dorota Gawęda and Eglė Kulbokaitė, for example, locate fictional characters like *Agatha Valkyre* Ice (Ai) equally in Google docs, in game spaces as well as in galleries. *Ai* is collectively embodied, in nomadic situations, by human actors as well as through space, algorithms, and devices that are likewise conceived of as actors, altogether forming a hybrid network (Rafferty, 2017).

In view of such concepts, art education faces new challenges concerning the allocation of agency and the addressability of a subject capable of acting. Currently, network-theoretical and posthuman theories define subjectivation as the co-constitution of material and discursive relations of nature, culture, and technology by human and nonhuman actors (Barad, 2007). Thus, the pervasive centrality of human actors in the humanistic sciences of the Global North is contrasted with alternative theoretical models. Similarly, reflections on networked subjects can be found in Actor Network Theory (Latour, 2005), New Materialism (Bennett, 2010; Dolphijn & van der Tuin, 2012), Object Oriented Ontology (Bogost, 2012), and, in some cases distancing themselves from the term itself, Posthumanism (Braidotti & Hlavajova, 2018; Haraway, 2016). All of them put emphasis on ecological, political, and social issues by overcoming notions of nature-culture/human-technology dichotomies which tended to overlook the hegemonic forces of technological-cultural apparatuses (Kanderske & Thielmann, 2019).

The notion of hybrid subjects establishes new prerequisites for art education, e.g., in conceptualizing participation (Götz, 2019; Leeker, 2018) or inclusion (Hahn, 2019) that is not limited to human actors.

Instead, subjectivity here is entangled with digital devices as well as physical settings. Against the background of globally networked societies, new understandings of the subject are also reflected in collaborative forms of teaching and learning (Rousell & Fell, 2018) and more generally referring to questions of mediatization, e.g., in the idea of *the learning network* and communities (Jörissen & Meyer, 2015). In all of the aforementioned positions, the idea of an individual subject does not disappear, yet becomes less prominent. Thinking about educational infrastructures and enabling situations to collectively negotiate the terms and conditions of learning from each other, come to the forefront. This leads me to my second proposition: Now that every information is accessible at the fingertips, consciously inventing new ways of dealing with digital devices, but also of sharing time and space, especially, considering their agential potential, seems ever more important.

Fluid Materiality

Digitality permeates materiality and co-constitutes it.

Since the 1970s, digitalization had often been discussed one-sidedly regarding topoi of virtuality and simulation (Kanderske & Thielmann, 2019). Portable devices, the Internet of Things, and sensory environments not least have ensured that this insufficient concentration on, or criticism of, alleged digital immateriality has been conceptually expanded to physical, sensory, and affective qualities. In digital cultures, materiality is the basis (digital terminals, interfaces), object (digitalization of analog media), and product (digital production of material phenomena, e.g. by 3D printing) of digitality (Jörissen & Underberg, 2019). Digital artifacts can take on very different forms and states. In *Lincoln 3D Scans*, for example, the artist Oliver Laric captures cultural artifacts through 3D scans. The 3D models' data are made available online, they can be downloaded, edited (e.g., printed as a 3D sculpture, animated as a GIF) and then uploaded again to an online gallery (Lincoln 3D, 2013).

Processing further and translating the object into different forms and material states is an essential principle here. The artist, Morehshin Allahyari uses a similar procedure in her *Material Speculations* (Allahyari, 2015/2016) to reconstruct destroyed cultural assets in Syrian and Iranian war zones to save them from oblivion. Laric and Allahyari's works

conserve the objects precisely by circulating different versions, making them publicly available and malleable. Accordingly, an idea can only be considered alive if copied, used, and expanded by others, especially beyond the boundaries of the art world. In the sense of Post-Internet Art, physical object and digitized object are different versions of an idea: "The actual work is embedded in hybrid spaces; it is simultaneously code, digital object and material object" (Jörissen, 2016, p. 3, translated from German by the author).

Specifically considering digital transformation and reformation possibilities, digital materiality is an important area of research in art education. Theoretical approaches such as the abovementioned Actor Network Theory, New Materialism and Object-Oriented Ontology acknowledge digital things or objects (Hahn, 2019) or bodies of images (see Schütze in this publication) in terms of their affordances. They are also reflected in curriculum research (Hood & Kraehe, 2017; Rousell & Fell, 2018). Moreover, ecological, climate policy, and power theoretical questions, e.g., technical infrastructures and resource consumption, come to the fore again through concepts such as Post-Digitality (Broeckmann, 2017).

Art education dealing with digital cultures, and this marks my third proposition respectively observation, puts emphasis on material relations and manifestations in its various states of aggregation. At the same time, transferring one state to another always comes with a certain data loss. Identifying qualities that cannot be translated and stay out of our reach, however, only continues a competence already ingrained into art education research (Sabisch & Zahn, 2018).

Digital Imaginaries

Discourses of digitization show blind spots that need critical revision.

Both the discussions around the term Post-Internet as well as Post-Digital are limited predominantly to the Global North, excluding a wide spectrum of experiences and expertise (Gronlund, 2017). In the academic field of art education, there are only few explicit connections between digital and postcolonial, respectively, queer theory (cf. Smith in this publication). Although numerous exhibitions, projects, and initiatives could be named (e.g. *DEAR HUMANS*, 2020), researching automated discrimination, biased data, or software design and their effects has not

been institutionalized widely (Braidotti, 2019). Artist Tabita Rezaire, for example, points out that technology has always been permeated by ideologies and never neutral. In her works, she contours the intertwining of technology and (post-) colonialism, counteracting unequal power structures reproduced both on- and offline (Rezaire, 2019).

In addition, there are numerous other questions that cannot be addressed here but are important to develop further: Which fantasies and desires are inscribed in technologies and which ones are they in turn producing? What kinds of effects and collective ideas are offered? How can technology be used in different ways? In this fourth proposition, that which is speculative, that which is perhaps otherwise, that which is not yet realized and that which is missing are part of art educational research: the digital imaginaries. This may be one of art education's strongest points concerning digital cultures: to observe, to advance commentary, to enact aesthetic strategies to make abstract connections tangible. Art education can not only enhance understanding digital technology but also imagine how it might become otherwise, e.g., by making visible and reframe the norms of algorithmic governance like Tabita Rezaire or by finding new ways of using technology in collaborative settings like Dorota Gawęda and Eglė Kulbokaitė.

Summary

The chapter firstly explored digitization primarily defined not as a technological constant, but rather from the perspective of societal interdependencies. This is also taken into account by concepts such as Post-Digital as well as Post-Internet, even though each taking on different approaches and attitudes toward technology. In art education, the prefix *post* at this point still seems necessary to mark debates aiming not only at the competent use of technical devices, but also observing socio-cultural dynamics and conditional structures.

Subsequently, aesthetic dimensions connected to Post-Digital and Post-Internet or, more generally speaking, digital cultures, were presented in exemplary theses. Instead of reducing aesthetics, in a narrow sense, to what can be perceived by human senses, the conditions of aesthetic production were addressed in four areas of inquiry: 1. distributed artworks, 2. hybrid subjects, 3. fluid materiality, and 4. digital imaginaries. These examples—certainly there are many more—contribute to understanding digital cultures in their multiple entanglements. It hereby

is important to note, as mentioned before, that characteristics of distribution, fluidity, and ungraspable hybridity represent only one manifestation of digital cultures. At the same time, there are always counterpoints equally important, especially in the field of education that is increasingly influenced by neoliberal ideas of flexibility and versatility.

Art education, as I have outlined throughout this text, is already contributing to Post-Internet and, respectively, Post-Digital research. It reflects, for instance, aesthetic codes, distributed image populations, or translations of digitally co-created materiality into different states. At the same time, projects like *Post-Internet Arts Education*, develop new models and methodologies on the basis of broader research implications to build tools for practical application. The *Workbook Arts Education* (myow, 2020) is one example.

Art education plays an important role in advancing possibilities of active participation and using digital technology in alternative, inventive ways. Simultaneously, art education can also explore what eludes digitalization and what cannot be transferred into binary codes.

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Post-Internet Art and Pre-Internet Art Education

Robert W. Sweeny

The launch of Netscape Navigator in December 1994 is a milestone in the history of the internet (Cooper, 2014).[1] The release of Netscape Navigator allowed internet access to an audience beyond academia and the rare techno-hobbyist. Artists had, of course, been using digital media long before this period (Giloth & Pocock-Williams, 1990), and had also been active on the early internet, but Navigator brought increased attention to the internet as a platform for artistic expression, distribution, and dissent. As the internet gained users and developed as a commercial platform, it expanded into what Barabasi (2002) describes as a decentralized network. The expanded ability for a wide range of users to participate in networks of artistic production, distribution, and consumption has led to our current era, where online activities have folded back into offline modes of interaction. In short, the forms of interaction and engagement facilitated by the early internet have led to what some have termed a *post-internet* condition.

R. W. Sweeny (✉)
Indiana University of Pennsylvania, Indiana, PA, USA
e-mail: sweeny@iup.edu

The term post-internet as applied to art, while not defined in any comprehensive manner, generally refers to the despecialization of the internet (McHugh, 2010). The practices that were once the domain of hobbyists and scientists were gradually made available to a wider audience, sometime after the turn of the millennium. This chapter looks to the history of art education in a networked era, generally focusing on North American scholarship. It looks to what post-internet art, as a distributed structure of knowledge formation, might mean to formal art education. It will present an overview of some of the ways that art educators helped to theorize the artistic possibilities found in the early internet, through what was termed 'Web 2.0.' and leading up to a post-internet condition.

Art on, Through, About, and in the Internet

Artists working on the internet in 1994 were experimenting with a range of technologies and techniques that had, up until that point, only been used by specialists exploring the potential for this new digital medium. However, well before the launch of Netscape Navigator, artists had already been experimenting with some of the approaches that would later become embedded in digital technological form. For instance, many artists had taken up the notion of 'hypertext,' well before HyperText Transfer Protocol (HTTP) was developed by Tim Berners-Lee beginning as early as 1980.[2] At that time, it was used to describe potential coding structures and approaches to computing. However, before it was applied to digital processes, it was used in literature, going back at least to Vannevar Bush (Bush, 1945). Since that time the concept of hypertext has influenced literature in the form of hypertext poetry and writing in general (Landow, 1989).

Hypertext was influential in the creation of work of visual art during the same time period. One of the first and most influential hypertext-based works of art was Olia Lialina's *My Boyfriend Came Back from the War* (1996), which used the format of the early World Wide Web to construct a multilinear narrative through text and image (Conner, 2016). While early hypertext works such as this were using developing programming languages and visual approaches, they were also borrowing from previous forms of art (Manovich, 2001). Many researchers in the field of art education in the U.S. were, at the same time, exploring the potential for these forms of engagement in art educational settings. Some were interested in the possibilities for hypermedia as a reflective framework

for pre-service art educators (Galbraith, 1996), while others envisioned hypertext as a platform for art criticism (Slawson, 1993) and art history (Koos & Smith-Shank, 1996). Still others saw the potential for curriculum models informed by the branching qualities of hypertext (Efland, 1995).

These hypertextual models for teaching, learning, and making were based upon a closed system of data retrieval: The ability to link and connect was limited by the data access of the associated computer hard drive or CD-ROM. With the emergence of visual culture-based art education and a more robust internet at the turn of the millennium came an interest in the qualities of hypertext, seen as both product and process:

> The theoretical and practical dynamics of the World Wide Web – theoretically defined as hypertextual – in conjunction with a narrative form of education offered a framework for teaching and learning that emphasized the continuous engagement with and evaluation of social and political factors. (Reese, 2002, p. 348)

During this period, Taylor (2000) wrote about the 'liberatory' potential for hypertext-base forms of interpretation and critique, while Taylor and Carpenter (2002) described novel approaches to teaching and learning made possible through hypertext. Wilson (2001) saw the possibilities for hypertext as a robust tool for teaching and learning that extended across disciplines and media in an intertextual manner: "intertextuality in all verbal sign systems has been made infinitely more pervasive and visible through the use of the computer as hypertext or hypertextuality" (p. 11).

At the turn of the millennium, hypertext-based artworks were very quickly folded into what was being called 'net.art,' a term popularized by Slovenian artist Vuk Ćosić which was, itself, the product of a computer glitch (Conner, 2016). In the early 2000s, art educators such as Alison Colman (2004) identified the potential for net.art.

While this potential built upon the work of Wilson, Taylor, and Carpenter, some North American art educators were either dismissive of this new artform, or they responded with outright skepticism. Eisner (1972) described the possibilities inherent in specialization brought about by early computer systems, while he warned against the concomitant fragmentation and alienation that such systems might produce. There were those that argued for a measured approach to an uncritical, relentless incorporation every new program and process (Gregory, 1996), and there were energetic supporters such as Dunn (1996). Regardless, the impact of

hypertext theories and practices on the field of North American art education is impossible to accurately measure, specifically because the spread of the internet and the ubiquity of mobile media following the turn of the millennium made it so that everyone, at least in developed countries, were impacted (Castells, 1996).

Inevitably, it seems that the qualities that made net.art alluring were never taken up by North American art educators *en masse*. What was taken up and heartily embraced by a wide variety of art educators were the communicational possibilities that the internet represented. Art educators in public schools in the U.S. used email, online galleries, and eventually participated in social media fora such as Art Ed 2.0 (Roland, 2010). In this regard, it is possible that these networks of communication influenced art educational practices more than digital networks of creation and critique.

Art Education and Network Topologies

Art education as practiced in North American public schools tends to fall in line with the dominant organizing structure found in these school systems. The reasons for resistance to these different pedagogical structures are numerous, and a meaningful discussion of them falls outside of the scope of this chapter. Suffice it to say that the model for U.S. education that was standardized during the Industrial Revolution has remained in place throughout social upheaval and technological change (Spring, 2017). Art education has held a variety of positions within this hierarchical model, as Stankiewicz (2001) and Efland (1990) have both carefully detailed.

Efland (1995) suggests that the model of the computer hypertext might be the most apt to visualize curriculum design in a digital era. As stated earlier, there have been numerous art educators who have suggested that art education as a whole might learn from structures derived from networked digital technologies. However, it must be said that one of the primary barriers to this type of epistemological shift might be attributed to the different organizing structures found in both systems. In order to attend to these different organizing structures, and provide historical context, it is relevant to now discuss the work of Paul Baran. Baran (1964) proposed that a decentralized network model would be the best solution to the threat of widespread damage to military communication. His work helped to form the theoretical basis for

what would eventually become the internet. It is through Baran that we can think about networked technological communication in three variations: centralized, decentralized, and distributed. Centralized networked communication channels all messages through a central point, known as a hub. Decentralized network communication creates numerous hubs, which control the flow of information but allow for flexibility. This model leads to a distributed model, where every node is connected to every other node. There is no center, and there are no hubs that help to channel and control the informational flows.

While there may be limits to applying Baran's topologies, based as they are in communication (Munster, 2013), it is nonetheless worthwhile to apply them to the organizational structures found in educational systems. Many aspects of formal schooling are centralized, from the leadership to the funding structures down to the individual curricula of most school disciplines. While centralized topologies apply to many aspects of formal education, there are examples of decentralized and distributed models that can be identified. Some school systems allow for student participation in governing bodies and rule-making processes, which could be seen as a decentered model (Kohl, 1969). Some school systems allow for a great amount of flexibility in the course offerings that students can choose from to fulfill educational requirements. In addition, the ways that individuals communicate within schools has been dramatically restructured through the introduction of networked digital communication, first in the form of email and now as seen in the proliferating social media platforms.

This last example is the one that is currently proving to be the most disruptive of traditional, centralized forms of communication in school systems. Teachers can communicate through SMS messages to individuals and groups, and vice versa. Students can engage in robust backchannel conversations between and during classes, even as teachers, administrators carry on with lectures and discussions, seemingly as usual. This last point is one that should be reiterated, as it speaks to the application of network topologies in educational settings: In the same given physical educational space, there can be numerous models of communication operating simultaneously. While that has always been the case in educational spaces—think of the existence of tabletop graffiti and note-passing—this complexity is multiplied through the use of digital platforms that help to facilitate multitasking. As such, the digital/analog binary is

complicated to the point where is it not necessarily useful. Such complications are directly tied to a post-internet condition which will be discussed in the following section.

As mentioned earlier, North American art educators by and large were not captivated by the work of net.artists during the early 1990s. The reasons for this are undoubtedly numerous; one reason that I would like to offer, based upon this discussion of network topologies, is that net.art did not fit into the art educational frameworks that predominated at that time. Net.art relied upon unfamiliar forms of interaction and visualization. Early net.art such as *My Boyfriend Came Home from the War* (1996) had more in common with videogames of the era than art of the era. So-called 'Interactive Art' (Gansing, 2016) was common in the realm of media art and design, but there were no model for interaction that could be drawn from the fine arts. Even if art educators were to find value in net.art, the possibilities for making such artwork in the public schools would be challenging at best, requiring the use of computer programs that would be cost-prohibitive and require extensive training. This would also require that the art educator enter into relationships with those involved with computer programming and computer design, fields that generally exist outside of pre-K 12 public school art programs.

As a result, approaches to teaching digital media in art education have, at best, made reference to decentralized forms of production and distribution, but have not made structural changes, regardless of attempts to 'deschool' (Illich, 1972) or make art education more rhizomatic (Wilson, 2003). This relationship between the content of art education and its structural characteristics (curriculum, instructional methods, etc.) has been discussed throughout a variety of time periods and through substantial cultural shifts. The primary difference between these relationships and that of net.art and art education is that net.art was tied to larger sociocultural shifts that had an impact on many varied aspects of daily life the world over. Net.art was, in this regard, part of a larger *society of flows*, as Castells (1996) has theorized. Net.art did not seem to have a measurable impact on North American art educational practices at the same time that the internet was restructuring many aspects of education. However, the ways that net.art propagated and proliferated *within* digital networks makes it possible that the influence was felt, even if it was hard to measure.

If art educators are to address the dynamic, socially-engaged qualities of net.art practices, they must view them from a historical perspective. The internet of the mid-1990s has been all but forgotten, having been

revised and revised again by decades of advancements in coding and inter-face design. The once-decentralized structure of the World Wide Web has been centralized through digital monopolies. The Information Super-highway has been paved over by social media sites, streaming media, and cloud-based computing. Net.art has, in turn, been reconceptualized, distributed on a variety of platforms, and monetized, by post-internet art.

Post-Internet Art and Pre-Internet Art Education

What, then, might art educators learn from post-internet art? If net.art was not addressed for the reasons provided above, then what is the likeli-hood that the same would be the case for post-internet art? Is it possible to incorporate, in a structural manner, the strategies used by post-internet artists, with art educational practices that have, in large part, been in existence long before the launch of Netscape Navigator in 1994?

This is not a likely possibility, given the histories of digital technology theory and practice discussed previously. The promises represented by hypertext were largely confined to the theoretical enclaves of higher education. Hypermedia such as WebQuests (Kiefer-Boyd, 1996) and StorySpace (Taylor, 2000) were not adopted by large numbers of art educators, most likely due to the most basic of factors: time and money. Art educators did not have the time to learn new programs, nor did they have the money to purchase new software or hardware, especially when these expensive purchases fall victim to planned obsolescence. In fact, this seems to be one of the most frequent responses shared by art educators when discussing the reasons why digital technologies are not implemented in the art classroom (Wilks et al., 2012). However, if art educators are willing to see post-internet art for what it is, then perhaps there might be opportunities to be found. If art educators were to attend to the internet as it is currently being used, then the related art would be just another part of daily life.

The term 'post-internet' was used as the title for a blog operated by Gene McHugh, starting in September 2010 (Rhizome). In his first post, he states that Marisa Olson, former editor and curator at Rhizome.org, used the term sometime between 2007 and 2009. The blog served as a forum for McHugh's reflections upon the relationship between the Internet and art at the time; a relationship which, for McHugh, had become problematic at best:

Any hope for the Internet to make things easier, *to reduce the anxiety of my existence*, was simply over – it failed – and it was just another thing to deal with. What we mean when we say "Internet" became not a thing in the world to escape into, but rather *the world one sought escape from*… sigh… It became the place where business was conducted, and bills were paid. It became the place where people tracked you down. [italics in original] (2010, para. 5)

Consider the aspects of the internet that McHugh decries: The internet as a place where business is conducted, and bills were paid and the internet as a place where people tracked you down. McHugh cites them as evidence that of the failure of the promises of the internet. What if, however, art educators took these markers of digital failure and folded them back into everyday art educational practices, reframing them as possibilities for artmaking, for critical reflection?

The first aspect of the internet confronts an aspect of contemporary artistic production that many find to be unseemly: art as business. Critics of this aspect of contemporary art markets found, in late 2019, the perfect encapsulation of these base desires: *The Comedian* (2019) by Maurizio Cattelan. In some ways, *The Comedian* is the perfect post-internet work of art; while the material composition consists of a banana duct-taped to a gallery wall, its image is one that is simple, clean, easily identifiable. One could not imagine a better image to translate into an internet meme, or, perhaps better yet, an emoji.

It is, of course, the value that was attached to this work of art which resulted in confusion and outrage. *The Comedian* sold, in an edition of three, for 120,000 dollars per work. Now it must be said that *The Comedian* is not what most might think of when discussing digital art in general, or its many specific variants: Interactive art, new media art, net.art, etc. However, if we consider the way that this work was received, distributed, critiqued, and perhaps even eventually purchased, we see that it enters into the almost-unavoidable networks of exchange that the internet currently represents.

There are, perhaps, examples that speak more to the specific qualities of post-internet art as the commercial product of digital media. One early net.art example that highlights aspects of commercial exchange that is now central to the structure of the internet is *Blackness For Sale* (2001) by Keith Obadike. In this work, Obadike created an auction site for his 'blackness,' which ended after three days when eBay stated that it violated

its rules for postings. *Blackness for Sale* utilized the commercial networks of eBay to produce a 'commodity' which was outside of the parameters of acceptability as determined by the site designers. Obadike's description of the item is as follows:

> This heirloom has been in the possession of the seller for twenty-eight years. Mr. Obadike's Blackness has been used primarily in the United States and its functionality outside of the US cannot be guaranteed. Buyer will receive a certificate of authenticity. (Obadike, 2001, para. 1)

This description begins to clearly mark the project as social satire. In a 2001 interview, Obadike frames the way in which race is questioned in the piece:

> While watching what many were doing with net.art, I didn't really see net artists dealing with this intersection of commerce and race. I really wanted to comment on this odd Euro colonialist narrative that exists on the web and black peoples' position within that narrative. I mean, there are browsers called Explorer and Navigator that take you to explore the Amazon or trade in the ebay. It's all just too blatant to ignore. (Fusco, 2001, para. 4)

This notion of play as described by Obadike is very much in line with current post-internet art practices, where approaches based in the extremes of technological exuberance or neo-luddite revulsion are blurred, or ignored. As stated in the introduction, the widespread use of the internet had a polarizing effect on many at the time. Proponents tended to hail the ability to connect and share information across vast distances as a utopian platform for a new global community. Critics saw what would come to be known as online interaction as an alienating process, one that distanced the user from others, and perhaps most dangerously, from ones' self.

We are in a period where these oppositional responses to the internet still exist. However, the opportunities to create a new platform for digital exchange have long since passed. The internet has become a space that is largely controlled through monopolistic corporations and overbearing state actors. The result of this centralization has been that artists using the internet have taken up networked digital interaction as a medium, to be used, remixed, mashed up, monetized and further marginalized.

McHugh (2010) describes the idea of 'painting as meme' in an early blog post. In this post, he cites David Joselit's (2009) *Painting Besides Itself*. As he writes:

> Julia Koether, Stephen Prina, and Wade Guyton have developed practices which allegorize their objects' own "transitivity" or continuous in-between-ness as they shuttle from one node of the network to another—from object, to photograph of object, to source material for another artist's appropriation and re-circulation, and back again, in an ongoing circulation. Works of art—here—are never situated in a static context; rather they are situated in continuous state of *passage* between contexts in a broader network of multiple contexts. (para. 5)

This quality of in-between-ness is surely important to note when discussing post-internet art, and while McHugh refrains from defining post-internet art, or listing post-internet artists, the painters cited certainly can be seen as using the internet as medium.

The second aspect of a post-internet condition that McHugh describes is the ability for people to 'track you down.' While this quality of internet use was surely problematic in 2010, it has now, ten years later, been seen by many as a crisis for civil liberties and freedom of expression across the globe. The revelations brought about by whistleblowers Edward Snowden and Chelsea Manning have shown the extent to which contemporary digital networks can allow for the monitoring of individual users, on a global scale and to a granular level. Many of these issues have been identifies, critiqued, and played with, by numerous artists and activists for some time. The Surveillance Camera Players (SCP) stand as a prominent example of the play that Obadike described earlier, operating at the time that the internet was proliferating around the globe. Beginning in 1996, and disbanding in 2006, SCP was a loosely-defined collective made up of active members located around the world (Harding, 2015). Their primary goal was to utilize existing surveillance camera networks in order to present short skits and plays, which often had direct references to the politics of surveillance, civil liberties, and constitutional rights in the United States.

The mixing of artistic strategies by the SCP—combining street theatre, performance art, agitprop, and civil disobedience—fits within the characterization of post-internet art as a folding together of binary categories:

private/public, digital/analog, art/life. What truly makes the SCP relevant within a discussion of post-internet art is the fact that they, as an artistic collective, operate according to a decentralized network model, using existing CCTV technology to transmit ideas and actions of these very technologies. They both use the network and become the network.

Brown expands upon his description of internet use by the SCP when he says, in the same interview: "The Internet is a great surveillance device, but this surveillance to an extent works two ways. Though the US military is spying on me using the Internet, I can use the Internet to detect and denounce such spying" (Baumgaertel, 2001, para 39). This mid-1990s era optimism is not held by many in the second decade of the twenty-first century. What was once seen as a flexible, decentralized platform for visibility and visuality has become centralized, with large state actors such as the National Security Agency (NSA) in the U.S monitoring all electronic communication (Abdo & Toomey, 2013). This centralized control can also be seen in extreme relief in authoritarian regimes; the Chinese government, for example, has monitored and removed images that are critical of the regime (Ables, 2019). Still, as these images are actively removed from circulation, new ones emerge, if only momentarily.[3]

Laura Poitras is a filmmaker, artist, and journalist who has helped to bring these issues of surveillance and control to a wide audience, most famously through her film *Citizenfour* (2015). As a visual artist, she created *Astro Noise* (2016), which combined "documentary footage, architectural interventions, primary documents, and narrative structures to invite visitors to interact with the material in strikingly intimate and direct ways" (Whitney Museum of American Art, 2020, para. 2). Again, we see post-internet strategies of in-between-ness and pastiche evident in the work of Poitras. We also see that the work—especially Astro Noise—reflects the hybrid, decentralized nature of contemporary digital networks. One aspect of Poitras' practices that does not fit into the theory of post-internet practices developed in this chapter is her work is decidedly stark and serious. Although the work utilizes strategies of juxtaposition and pastiche, it refuses to engage in the ironic distancing that was central to postmodern art practices. The play that SCP incorporate is nowhere to be found, and the oscillation between utopian promise and dystopian danger is unwaveringly rooted in the latter.

This approach is likely a product of Poitras' career as a journalist. Regardless, the tracking that McHugh criticized in 2010 has become a central feature of the internet, ten years later, with no indication that

things will change any time soon. The hypertext-based work of Lialina (1996) is still relevant, because the internet is still a platform for work that is poetic and hyperlinear, as seen in the work of the contemporary painters Koether, Prina, and Guyton. The net.art practices of Obadike (2001) that confronts issues of race and commodity on the internet are still relevant because the internet remains a space where cultural bias and white supremacy operate. One can look to Tracking Transience (2002–present), by Hasan Elahi, as a contemporary work of post-internet art that speaks to these issues, in real time. Additionally, the issues raised by the SCP are perhaps even more relevant in an era of rampant electronic monitoring described by Poitras, as well as the self-surveillance enabled by contemporary social media.

The artworks discussed in this writing are not intended as a definitive listing of post-internet works. And, of course, there are numerous additional aspects to the internet as it is currently configured that are not identified by McHugh. There are the possibilities that the internet allows for a variety of forms of communication. There are the opportunities for social interaction that are facilitated by the internet. There are also the numerous examples of digital games that are played on and through the internet. However, if art educators are to learn from post-internet art, then they might be attentive to the aspects of the internet that are most frustrating, most confusing, and most troublesome. They might attend to the ways that daily life folds together online and offline interactions in increasingly complex and confusing ways. They might be aware of the ways that digital technologies offer models of communication that fluctuate between centralized, decentralized, and distributed forms of interaction. Furthermore, they might acknowledge the in-between-ness of current artistic practices, practices that blur previous notions of commerce and politics. Inevitably, these are the qualities of post-internet art that are most ripe for educational exploration and artistic navigation.

Notes

1. In this chapter I will use the term 'internet' exclusively, although some artists and theorists use the term 'World Wide Web.' It is important to distinguish between the two, as the internet is the infrastructure that allows for global networked digital communication, while the World Wide Web is the content that is accessed through the internet.

2. The term hypertext was first used by Tim Nelson around 1965 (Hoffman, 2017).
3. There is a similarity to the centralized forms of communication in educational spaces here, although labeling the centralized control in education as authoritarian is a conversation that extends beyond the scope of this chapter.

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CHAPTER 4

A Meditation on the Post-digital and Post-internet Condition: Screen Culture, Digitalization, and Networked Art

jan jagodzinski

Post-digital and Post-internet Condition

The rise of photography, the moving image, film, and advertising arts at the turn of the twentieth century reinstated a long-standing division that had developed during the Enlightenment with its revival of Greco-Roman classicism between the seven liberal arts (grammar, dialectics, rhetoric, arithmetic, geometry, music theory, and astronomy) and the mechanical arts (architecture, painting, sculpture, and agriculture), the familiar division between cognition, knowledge (mind) and skill, craft (body). These popular media forms were positioned against fine arts, with design straddling both domains. Toward the third quarter of the twentieth century this aesthetic division was still maintained between the 'arts' and 'media arts' as, not only did 'mechanization take command'

j. jagodzinski (✉)
Department of Secondary Education, University of Alberta, Edmonton, AB, Canada
e-mail: jj3@ualberta.ca

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as Sigfried Giedion wrote in 1948, but now computerization and digitalization took command. Media artists were the exponents of technical reproducibility as dictated by the limits of automation and the computer programs, just like the mechanical arts of the past, whereas the intellectual contribution of the creative act, the intuition and originality of the artist, was said to surpass the algorithmic forces of calculation, reason, and mechanical production. Machine and media generated production was still perceived as inferior (analogous to the 'craftsman' being inferior to the artist).

The shift toward a post-media condition, when art is produced with the aid of a digitalized technological device, began to constitute the core of media experience at the turn of the twenty-first century (Appich et al., 2013). Telematic and technogenic art (often referred to as bioart) began to be explored as both 'dry' and 'wet' media arts supported by digitalization and high-speed computerization enabled the collapse of art and science (Kac, 2007). Nature as culture and culture as nature blurred, best exemplified by biomimesis, biosensing, and biosynthetic design (Benyus, 1997). In brief, the 'use' of life as a *medium* (as visual media, as a 'science' medium, and as technological media) ushered in a post-digital and post-Internet world-view of *materiality,* which was forwarded alongside complex computation. Strictly speaking art & design, and the historical tensions of the ampersand between them, became blurred if not disappeared. While traditional arts are still practiced, of course, their worth fades as DIY makerspaces that support STEM (Science, Technology, Engineering, Mathematics) projects infiltrate schools, libraries, museums, and galleries (Wiley & Elam, 2018). The liberal arts of the Enlightenment, having morphed into the natural sciences, now infiltrate various technologies and all the mechanical arts.

In brief, the contemporary *post-media condition* shapes the post-digital and post-Internet condition where the *media image* dominates across screens and interfaces. Media convergence, where every mass media eventually emerges to a point of becoming one medium due to the proliferation of hybridized communication technologies is on its way (Jenkins, 2006). The cell phone, for instance, has become an entertainment center all on its own: television, music videos, Internet, geographical mapping, and so on are all available on this one device. The mediascape of the twenty-first century places us in a time that seems 'out-of-joint,' as in Philip K. Dick's (1959) dystopian novel. We, as a species, have entered 'the end times' wielding extraordinary technological achievements and a

new-found arrogant consciousness summed up as a 'God-species' (Lynas, 2011) within the purview of an event horizon, our species extinction that a privileged few have helped shape: but to what ends?

Might we offer a radical thought at such a moment in time? Time that is now stretched out as an era; time that is stretched out even further as 'deep time'; the hysterical and paranoid time of Covid-19 global pandemic, yet another symptom of the time of fundamental planetary crisis of the Anthropocene. Time of eternal becoming, incomprehensible cosmic time; time that has no face; yet, as creatures of the Earth, a species of ape whose physiology and consciousness is shaped through and by the grammatization of technics (writing/media technologies) since Australopithecines first picked up eoliths, the first tools. We find ourselves now in a dromological condition (Virilio, 1986), pervaded by a 'dromospheric generation' (Colman, 2015). This generation of digi-children, immersed in digitalized technologies, are physiologically and psychologically shaped through *play* by three interconnecting components of media *transmission*: the transmission environment (TE), transmission manifestations (TM), and transmission perceptions (TP). Together, this forms an assemblage (*agencement*) of energy transmission—of informatics largely through sensations, affects, and percepts as peer-generated buzz occurs; a neurosynaptic chemical rush is produced.

Meaning is no longer the issue; that is to say, cognition takes a back seat, as the time-based material field provides the impulses and signals of transmission through the materialization of digital data. The impact of transmission differs given the platform environment (TE) that is harnessed. The force, intensity, and impetus of the energy that is produced depends in part by different algorithmic and perceptual data systems that the media platform uses, for instance, the sort of radiation of intensive light using intensive RGB additive color modeling, and so on.

With screen-based media platforms, image transmission is made possible through three modes of energy—potential (latent, static), kinetic (actual, movement), and cinematic [kinematic] (fluid, perception from the effects of movement, varying speeds on ocular, optical, or optoelectronic perception) (Virilio, 1998). Kinematic game platforms are made for the 'digivolution' of children of the dromospheric generation. They require a speed of play where digital dexterity, cognition, and abstraction of a narrative takes root, although narratives are not always required. Play is the platform activated most often through a handheld device that enables the flow and transference of energy through the body. It is through play

that a territory is created, which then can be inhabited. This experience is an already programmed quantified algorithm; a game platform maps out potential and possible movements, actions, and pathways of console users as the game's ecology caters to a broad range of modalities. Paul Virilio (2000) develops the concept of 'chronopolitics' to grasp the logistics of channelling speed and managing time, so that a body is positioned and moved in space via affective knowledge.

Managing and manipulating bodies via such speed and time-based politics applies to any designed ecological environment, especially in urban planning where its territory is to be controlled. In game platforms, affective sequences of events are released at specific times, which sets up the desired 'relational product' between user and digital screen information. Power fields, set up by state institutions and private corporations, direct the synaptic and cognitive transmission of energy historicizing territorial movements by establishing habituated patters of self-time management (TM). Bodies are effectively colonized, the patterns broken only when an event (perturbation) occurs: accidents, protests, riots, but also militarism and health crisis like the current pandemic of 2020.

Since the turn of the twenty-first century, the dromospheric generation (or millennium generation), has set the stage for the future of digital work to meet the requirements of a global capitalist system, with virtual games as the exemplary techno-cultural form of Empire in their identity with the digital networks of production, communication, and deconstruction (Hardt & Negri, 2000). The new 'secretaries' of the corporate world are the computer programmers and engineers. Machinic subjectivities arose via the military-industrial complex that had generated the computer and the Internet, with gaming becoming the testing ground to explore the enfoldment of the virtual and the actual, these two disjunctive realms perversely 'literalized' as philosophically developed by Gilles Deleuze and Félix Guattari (1987). The virtual as the digital, or on-screen world, is set apart to actual existential life, or 'IRL' ('in real life'), yet virtuality also opens up potentiality, the plurality of directions that the actual might take. It forwards the *potential* rather than the *probable or possible* .

While the technological and the ontologically virtual are distinct and not to be conflated, they become related through the practice of *simulation*. Computer simulation creates 'worlds,' potential or possible universes as to what might be. In relation to globalized control, such virtual simulation becomes vital for high-risk military, financial, and corporate institutions to retain their power of control. The gaming world provides

the conditions to individuate a flexible subjectivity in this post-Fordist economy and labor that demands digital work, war, and the functioning of commodity markets. While gaming abets a machinic conscious necessary for global capitalism and industrial consumerism, it can also provide a critique of capitalism by amplifying its excesses. As Nick Dyer-Witheford and Greig de Peuter (2009) hedge their bets on three forms of creative dissident games: pirate, protest, and alternative Massively Multiplayer Online video games. As to their resistant effectivity, there isn't any obvious evidence in relation to the larger bleaker condition of game-use.

Cybernetic Consciousness

Virilio's 'dromoeconomic system' (Armitage & Graham, 2001) extends and deepens our understanding of 'control societies' that Giles Deleuze (1992) developed by building on his friend Michel Foucault's exploration of disciplinarity and biopolitics. Deleuze was very aware of the way second-generation cybernetics enabled the modulation of open and dynamic systems whereby power seemed decentralized, absent, yet in 'play.' Virilio and Bernard Stiegler (as discussed below), and theorists like Levi Bryant (2011) have engaged with third and fourth order cybernetics. Simply put, first order cybernetic systems dealt with allopoietic machines that are used for a set purpose, a clear telos. They cannot produce their own components and are simply observed; second order cybernetics deals with autopoietic machines, the self-organization of living biological systems (Maturana & Francisco Valera, 2012). They produce their own components. They are teleonomical in the sense that their purpose and organization is ecological; they encephalize their environment and are able to modify it to certain extent through causal feedback. In this sense they are 'self-observing systems.' Third order cybernetic understanding combines the understanding of first order (as culture of machines) and the second (as the nature living machines). Generally speaking, a networked system redirects itself as a particular element within it, or any combination of elements, begins to modify and redistribute the system.

The awkward term, 'natureculture entanglement' is the result where our species recognizes how modifications of nature are modifications of culture, both physiologically, neurologically, psychologically, and so forth; in brief, the degree and intensification of encephalization matters. Third order cybernetic systems are heteropoietic; there is a wide variation. Further, they are both teleological and teleonomic, meaning there is an

exchange between singular autonomous elements of a system in the environment. Fourth order cybernetic systems build on and embed the other three orders. The term 'assemblage' [*agencement*] is more suitable here as initially developed by Deleuze and Guattari (1987), where desire, as a form of energy, circulates keeping the system in place at a *metastable* level. Modifications of change happen via events (perturbations), which happen at extremes states of disequilibrium when a phase change takes place. The system redirects itself: the observer and the observing system transform one another as 'information' is generated. Contingency and complex causalities (what Deleuze (1994) called 'dark precursors') deterritorialize and redistribute the system's elements as it transformations itself.

Fourth order complex dynamic systems are governed by entropy-negentropy dynamic where the inside and outside, intensive and extensive forces, endo-relations and exo-relations as dualities are in constant states of flux or 'becoming.' A both-and logic prevails referred to as a paradoxical 'disjunctive synthesis.' This suggests an impossible and unbridgeable gap between thinking (epistemology) and being (ontology, the Real). Holarchy best defines such a system, as does a holographic projection where the connection and relations between elements as holons take place, a holon being both part and whole. Indeed, the part contains the whole. Such holarchic systems are no longer hierarchical, but more quantum-like, in this sense the term 'flat ontology' appears appropriate. The relationships between holons at different levels are no longer above and below, as charted by representational imagery; rather both 'in and out,' 'up and down,' 'left and right,' and 'inside and outside.' Holons are inter and intra-related as in a holograph where any one part contains the whole simultaneously. This is not unlike fractal dimensions of Euclidean geometrical space, which present expanding or unfolding symmetries. The topological dimensions of their becoming seem to generate infinite scales. We have arrived at this point at speculative realist philosophies, especially quantum that informs post-digital and post-Internet concerns. This development will not be pursued due to space restrictions.

WHERE TO NOW?

Virilio's (1994) 'logic of the image' in advanced control societies is rather bleak. It is an advanced form of 'accelerated aesthetics' best captured in this overview from *The Vision Machine*. He writes:

> The age of the image's *formal logic* was the age of painting, engraving and etching, architecture; it ended with the eighteenth century. The age of *dialectic logic* is the age of photography and film, or if you like, the frame of the nineteenth century. The age of *paradoxical logic* begins with the invention of video recording, holography and computer graphics [digital imagery] … as though, at the close of the twentieth century, the end of modernity were itself marked by the end of a logic of public representation. (1994, p. 63, original emphasis)

Virilio's technological determinism via vision machines is highly problematic as the material space is said to be replaced by speed's space as 'no-place'—the immediacy of real or actual time. The collapse of the vanishing point of Western technological development; that is, the collapse of both 'distance' and 'horizon' presents a 'squared horizon' in Virilio's terms (2005). Screen reality becomes pixelated and rests on the 'surface.' The pixel, as a 'micro-element' of the image, a point without dimension, says Virilio (1991). It flattens the image literally and symbolically into 'discontinuous grain.' It does away with the human experiences of space as it enables the digital image to be zoomed into or out of. Vision becomes flattened at the macro and micro levels: the zoom-in being too small for the human eye to see, the zoom-out presenting vistas that are too large to be contained in the field of vision. Digital imagery homogenizes everything through indifference to what it 'captures.' Translating material objects into digitalized images is said to destroy the phenomenological depth of the thing. Bodies are obliterated in a phobia of corporeality.

The screen is theorized as an absolute surface creating the effect of infinite depth, as such this is a 'negative horizon' as distance is collapsed into absolute proximity. The effect of this, says Virilio, is that the subject is caught up in a solipsistic space, held by the prison of a reflective surface where attention is captured by its illuminated aesthetic and its ability to fascinate. The viewer is transformed into a virtual 'tech-no-body' shaped by a negative abyss, a bottomless surface that engulfs the dystopia of the twenty-first century (Featherstone, 2015). To be fair, it might be also said that Virilio's (2011) concepts of 'anti-form' and 'divergence' are ways to critique, resist, innovate and reverse the perception of figure-ground through a 'tetradic form.' By focusing on the spaces of between, Virilio enhances the awareness of ground and interval; the figure's orientation becomes obsolescent, while his 'staticism' retrieves alternative dynamic

and vitalist perspectives that are then pushed to the extreme. This reverses the world into a rabbit-hole view. So, while Virilio does present a form of technological determinism, his approach to media ecology can be thought as being paradoxically the opposite (Zhang, 2013).

In the context of a post-digital and post-Internet art, the screen becomes the primary object of contention and concern, not only for the future of youth but also for the constant capture of affect and emotion for marketing. Desire is intensified into a 'drive' (*Trieb*) to energize the capitalist machine by having everything be present to hand (like in Amazon's *prime* delivery system). One wonders if this general claim of the 'screen' is applicable to Internet artists such as Pamela Rozenkranz, Oliver Laric, Juliana Huxtable, and Ryan Trecartin.[1] They address the way in which the Internet has changed communication through social media dramatically influencing their art: the proliferation of multiple individual narratives that unfold simultaneously, shifting genders and identities, over-the-top consumerism, and the proliferation of communicative exchanges among youth. They also do not limit their art to the Internet, but draw on the changes in perception brought on by the particularity of its technology. In Trecartin's case, his work is obviously 'overcommunicative': messages from dramatized exaggerated 'selves' proliferate in his videos, like a stream of solipsistic melodramas consisting of a constant flux of intensified images spewing existential angst. The question remains whether this aesthetic and affective style simply caters to and targets desire (*Trieb*) of a millennial generation, as he himself seems to confirm: 'My satisfaction comes—at least in part—from giving people what they want' (qtd. in Tomkins, 2014); or, is his overrepresentation of Internet social reality via the video screen a form of satirical criticism and hyperbolic intervention? The paradox lingers.

The Institute of Contemporary Art (ICA), Boston held an exhibition in 2018 curated by Eva Respini entitled *Art in the Age of the Internet, 1989 to Today*, which featured the millennial artists mentioned. The exhibition was divided into five sections, categories that are telling of the Internet's influence on art: Networks and Circulation, Hybrid Bodies, Virtual Worlds, States of Surveillance, and Performing the Self. Each of these areas can be thought of generating its own aesthetic and politics of desire. Juliana Huxtable can certainly be highlighted here in relation to issues of representation in the 'Performing the Self' section. As a transwoman, her portraits and performances are meant to

question the usual sex-gender divide, claiming to be a cyber-cunt-black-witch-Nuwaubian princess. An exploration of various digitalized portraits appears in the exhibition that scramble these signifiers into various hybrids of her 'self,' not unlike Orlan's somewhat infamous series of self-hybridizations that borrow physical features from other cultures. More pointedly, in collaboration with Huxtable's support and desire, is the juxtaposition of Frank Benson's hyper-realistic bronze sculpture: *Juliana* (2014–2016), which was constructed with the aid of 3-D printing technology. The sculpture is finished with a metallic autobody green paint. This gives the 'sculptural-portrait' a digital machine-like finish to provide the look of an 'ideal pose' that traces classical historical elements of nudes. Not atypical for many post-digital artists, Benson alludes to Deleuze's (1992) early concept of *simulacra* where the distinction between original and copy as formulated by Plato's idealism no longer applies. The 'ideal' bronze of Juliana is but one actualization of a series, beginning with her scanned body as a 3-D coded *virtual image* that is then actualized into 3-D print form, which is then further rendered into a 'traditional' bronze sculpture (see Respini, 2018).

The realization of this politicization of affect theory has (finally) gripped the academy in the past decade or so (Massumi, 2015). Lacan's (1995) gaze-look paradox is taken a step further in this realm of hyper-specularization. Bernard Stiegler (2010a) maintains that consumerist societies are marred by decadence, disaffection, and drive, resulting in an 'addictogenic subject.' Here we can point to the proliferation of 'apocalyptic memes' that flood the Internet (Konior, 2019), and the alt-right as the most visible dealer of 'fake-news' tweets and memes (Owens, 2019). Memes in the post-Internet constitute one of the easiest artforms to manipulate and modulate the structures of feeling. For Stiegler, like Virilio (see Featherstone, 2010), a *death drive* pervades the screens that offer perpetual satisfaction of escape, which can only lead to their complete closure as eternal peace. It would appear that the BBC's television series *Black Mirror* is a good accounting of such a black screen Virilio and Stiegler have in mind where a form of disorientation takes place that leads to immobility rather than enabling place and identity in terms of transindividuation that Stiegler (2010b) (via Gilbert Simondon) stresses. Transindividuation refers to the absolute necessity of forming relationships that are of some depth where community care can take form.

Stiegler ([2014], [2015], [2018]) mobilizes the concept of *pharmacology* and *organology* in order to rethink the Anthropocene as the 'Neganthropocene' in this post-Internet and post-digital condition, which is characterized by him as 'symbolic misery.' Algorithmic governmentality and the prosumer mentality of 'clairvoyance societies' have been the next steps of intensification of cybernetic control societies (Neyrat, [2018]). We are 'proletarianized' by automation in Stiegler's view, the loss of the vital knowledge how to live and act well. The pharmakon, effectively put to use by Jacques Derrida ([1981]) (Stiegler's teacher) as a way of articulating the production of *différance* when applied to wiring as being both a poison and cure is extended to the ambiguity of all techné. In what he calls a 'general organology,' as first derived from musicology, refers to and calls for a paradigm shift that accounts for all technical instruments and their effects on the human being, and their social organization for the transformation of the humanities, to reverse the entropy of human extinction. The toxic pharmakon of the 'short-circuited technologies' of screen cultures require new digital tools for human transindividuation processes to encourage care within the malaise of the Anthropocene, to wit referred to as the Neganthropocene given that negentropic energy is required for this transformative reversal.

Drawing on the Gilbert Simondon's insightful and ground-breaking history of techno-human relations, Bernard Stiegler ([1998]) defined technics as *organized inorganic matter*. As such technics refers both to the history of fabricated objects (as design) that require epistemé (cognition, knowledge), and to the domain of techné; that is to the techniques, processes, and practice involved in making technology (as art, craft, skill). Stiegler's presents a version of the interrelations between the biological, social, and the technological system as the history of *epiphylogenesis* (the technical-biological evolution). Organology is the process of exchange and mutual connection that takes place between tools (technics) and human beings in a sociological institutional environment that results in the formation of subjective consciousness (individuation). Organology (from the Greek, *organon* for tool) studies the psychic, artificial, and social tools that are constantly evolving and affecting each other. Technics in this understanding is the coalescence of art & design, not as separate but related spheres as has been the dominant paradigm of Western thought ever since the Aristotelean division of labor was taken up by the Enlightenment: between mind, spirit (knowledge of the seven liberal arts as sciences), and body (craftsmen, laborers, material). It is the recognition

of the intra-relations of nature and culture that have always been in play in our species evolution and accelerated since the industrial revolution of the nineteenth century to evolve into, what Michel Serres (Watkin, 2020) coined as 'exodarwinism'. This term should be understood by Marshall McLuhan's (and Edmund Carpenter, 1956) claim that: 'Each new technology is the reprogramming of sensory life.'

The relationship of our sense organs to each other, as well as the relationship of the sense organs to the environment, is constantly reprogrammed by new technologies and, consequently, our sensory life rewritten. Such a position by Serres is no different from Stiegler, they are compatible. A 'general organology' is the same idea that with every different set of (technical) organs comes into play a whole new set of psycho-somatic organs and social organization. It should be understood that technics (the domain of fabricated objects and the techniques and processes involved in their making) are constitutive of physiological and psychic changes of our species-becoming on all levels (from retention to anticipation, from cultural history to genetics); it is not a question of separating technology from a thinking and living body, as simply a prosthetic, rather this position recognizes that inter and interactions that occur between body, flesh, gesture, mind, and exo-technologies are mutually constitutive. Technics as a *supplement* (Derrida's 'always already' or 'already there') has always modified the species. To riff on Bruno Latour: We have always been cyborgs via gramatization as the interplay between gramme and gestures (in the widest sense of bodily motility) historically change.

Stiegler makes the point that the digital gramme has datafied existence to the point of a general consumer proletarianization, an intensification since nineteenth-century industrialism via the further capturing of tertiary retention (technical memory) through the archiving of data. All such 'writing' technologies are subject to a pharmacology; that is, their contextualization either prohibit or forward an existential openness. One of the advantages for thinking with the gramme is to differentiate the specific affordances of media platforms to begin to grasp what is it that is 'new.' In what ways are new technologies 'performative' in their affects and effects? Stiegler's general call for a transformative change addresses the need for a new 'natural contract' as Michel Serres (1995) once put it. Educators who have taken Stiegler earnestly to heart, seem to be all over the place as to precisely what such a renewed contract might be (*Educational Philosophy and Theory*, 2020). I end this meditation by turning my

attention to selfies as the paradigmatic images of post-digital and post-Internet cultures, and then reviewing three networked art installations that exemplify one aspect of the networked digital image in relation to the concerns raised by Virilio and Stiegler.

Networked Digital Images

The ubiquity of networked screen images in our digital age have challenged artists in unprecedented ways: how to engage with the Internet, the glance of the image, and the technology of the digital. What constitutes 'art' in Web 2.0 where the various platforms of capitalism are operable? Can they be intervened in a way that would increase our well-being as Stiegler desires? Is the dystopia of destructive memes, fake news accusations, and the traps of neurological research to grab prosumer attention a state of affairs that will only intensify, as Neyrat (2018) argues, when he speaks of clairvoyant societies that already predict the future via big data, explored by any number of sci-fi films and television series from *Westworld* to *DEVS*. Web 3.0 is just around the corner, or perhaps it has already arrived, and we just don't know it yet.

Historically, Daniel Rubinstein and Katerina Sluis (2008) are generally credited with the early mapping and use of the digital snapshots posted on the Internet, the mass amateurization of snapshots circulated throughout the net via photo-sharing and social networking. These sites attest to the transparency and visibility of the world-for-us; photos as placeholders for memories, celebratory documentations, sightseeing trips, in short, the rituals of everyday life, the various clichés of 'living.' The number of digitalized images that are uploaded onto servers each day can only be approximated: in 2019 there were 1.59 billion daily users of Facebook posting stories; 350 million photos are uploaded daily on its site; while on average 95 million images are uploaded on Instagram. A host of other online sites (Snapchat, Flickr, SmugMug, Buzznet, Zoto, Tumblr) add to this staggering total. The strategy of tagging (adding text) called 'folksonomy' on sites like Flickr encourages archiving and prevents photos from disappearing from view (Smith & Lefley, 2016). What is new to this extraordinary phenomenon has been the generation of metadata. A networked file has geographical coordinates of the place of shooting, it also allows the image to escape its original context enabling images to be remixed and remapped as mashups opening the door for hackers and reprogrammers via algorithms to play with images in new ways. Gone

are narrative and mnemonic values, indexicality as well as any status of a posted image being a precious object. Transmission-orientated, screen-based experience of images (especially photographs) leads to a stream of data where such images and their significances are in a state of constant flux.

Communicative capitalism (Dean, 2009) or platform capitalism works much the same way through the proliferation of videos, memes, emojis, photos and the like, but with more force as a 'second visuality'. What matters is whether an image is able to be repeated, or excites imitation, and whether it can circulate from one context to another. Production and reproduction become inseparable. The power to repeat and multiply gives it force, a triumph over meaning where affect and emotion are mobilized. Media studies have finally understood this phenomenon that form, content, and meaning are never fixed, but complexly related in relation to the user-spectator-participant-console user. This results in collective bubbles in the Internet (fan groups, hate groups, alt-right groups, left-groups, and so on). Digital images are not meant to be looked at; the less unique and banal, the better, as this is a scan aesthetic, meant to be repeated and imitated, reiterated, glanced at to share and scroll on or down. Deleuze's notion of the 'dividual' emerges in the commonality and reproducibility of the selfie. The weird, odd, out of bounds, and unusual is gathered up, captured, and presented as yet another social media bubble to enter. 'A Life' has disappeared in communicative capitalism. I use Deleuze's (2001) term 'A Life' to point to the free flow of creative energy (*Zoë*), energy that has not been captured by capitalist means (*bios*).

As Deleuze and Guattari (1994) note: 'We do not lack communication. On the contrary, we have too much of it. We lack creation' (p. 108). This seems to be the worrying consensus of many Deleuzians when it comes to the 'monadology' of the selfies (Ross, 2015; Vignola, 2015). The selfie has become a critical tool to use in political campaigns. Anirban Baishya (2015), for example, explores how the selfie of Narendra Modi was successfully used to help win his election as the prime minister of India. The alt-right political party, Bharatiya Janata Party (BJP), successfully mobilized a twitter propaganda campaign posing selfies of Modi with young and old people alike that swayed the public; it became cool to have such political leaders 'levelled' as it were, as part of public (like Trump eating hamburgers). There are artists, of course, who try to disrupt the

'selfie' assemblage. STEFDIES (stefdies.com) claims that her performative pieces are 'anti-selfies,' a rethinking of photography by capturing and staging moments of her 'death,' maintaining that her photographs are by chance (rather than being staged), yet they demand her total commitment for 'the' moment of capture. Hence, there are many failures at capturing her 'time', from a 1000 there are only a few hundred that are 'useable.' They can be thought of singularities that make the viewer think about the context of the situation where her 'dead' body lies.

There are, of course, no easy pushbacks to communicative capitalism. The harvesting of data from the various platforms has intensified. Let me examine three artists who present networked images in art exhibitions, generating a strange resistance to evoke forces of the unthought, providing the formation of new relationships to images. Erik Kessels' *Photography in Abundance* (24 h in Photos) (2011) installation exhibition does a very strange thing: it quantifies flow, stills time, and seems to evacuate the very desire, perhaps drive in the Lacan-Stieglerian sense is more adequate; that is to say, the circuits of satisfaction as forces of intensity that sustain enjoyment (*jouissance*) of the networked images are ruined. The repetitive circuits that sustain the social bubbles are cut, evacuated, rendered in a form that seems to be a wasteland marked by heaps of trash. Kessels, an artist, designer and curator, downloaded a million photos that were uploaded and publicly accessible to Flickr over a 24 h. period. The images were saved on a hard drive via an algorithmic program; then they were printed on paper and spread on the floor of the exhibition space (Amsterdam's Fotografiemuseum—FOAM, 10th anniversary show entitled, *What's Next?*). The million digital images were then transformed into physical prints, heaped up in piles, the resulting scale was a shock to the eyes. The equality of the image-mass of photos speaks to the 'commonism of images' managed by platform capitalism for profit ends that parasites on the dreams and desire of those who posted their image-texts, and took their selfies. It is the organizational structure of these images, witnessing the affectivity of 'A Life' that has now but vanished; as if the spirit that drives that structure has left, no longer traceable, leaving only waste behind.

The lack of entropic order of these images, the piles upon piles, deconstructs the exhibition space: there is no selection of works, only a presentation of everything; no origins and no framed prints only cheap inkjet prints and colored copies; no barriers keeping spectators away. Rather, they were encouraged to walk over the heaps and take images

away, seemingly an empty gesture. This was followed by a reversal. Kessels' *One Image* exhibition in 2016 appeared in a gallery space in Wroclaw, Poland. A black and white photograph of a little girl, Kessels' sister, who died after being hit by a car at the age of nine was singularly left hanging. It was the last image of her ever taken. He also reproduced the same image and put it on posters, scaffolding and billboards around the city, as well as in newspaper ad spaces—perhaps the obituary section being the most poignant. Her memory as a singularity—A Life—was heightened by escaping the networked Internet image.

Pic-me by Marc Lee (Version 1: 2014; Version 2: 2016) works with Instagram images and the specificities of Google Earth to show precisely where a recently uploaded photo was taken. An algorithm searches new posts on Instagram to identify images that have the following three features that are then filtered and chosen: hashtagged with #me, publicly visible and geotagged. So, every time an Instagram photo is uploaded, meeting these three requirements, the post appears as a speech bubble that points to the location of the transmitter. Google Earth becomes a spinning globe, and we approach the post and zoom into the closest proximity on the globe. Satellite imagery with aerial views, street views, and 3-D mapping of cities depicts the surface features and presents a holistic flow for the spectator. If one goes to: https://www.youtube.com/watch?v=PdubyhvctQw the installation can be experienced. This is a never-ending work as new posts are constantly feeding the algorithm and appear almost as real time. The installation lays bare communication capitalism as the personal data are tracked and traced on the Internet. On the one hand these are anonymous posts, yet they are easily identifiable, surveyable, and localizable. It is well known that these personal and often emotional posts are collected by commercial enterprises, research institutions, governments and then stored in databases. Above all, like Kessels' work, this seeming endless series of short posts, which one can watch as the globe spins, leaves one with a feeling of emptiness, as well as fascination. No one post remains long enough to go beyond the superficiality of surveillance, experiencing the fleetingness of lived-life. No commitment seems to occur on the part of the spectator because of the speed of the procession. These posts are like moving images that are scattered around the globe, not to be identified with but, in one sense, mourned for their very anonymity as A Life (*Zoë*) seems to be sealed, packaged as *bios*. Marc Lees installation speaks to Virilio's concerns as the speed of looking is a factor that seems to empty any needed distance as there is no touch.

The last installation, is an interactive kinetic sculpture, *A Truly Magic Moment* (2016) by Adam Basanta. It is available for viewing on https://vimeo.com/172547512. The networked video image communication consists of two iPhone cameras mounted on two robotic arms directly opposite one another; they are set in motion in a circular spin when two viewer-participants call in and are able to see one another via the iPhone screens. The sculpture then starts spinning, presenting them with 'a truly magical moment' of intimacy and a potential romantic relationship. Clearly this is a parody of what may happen online when two people chat, meet, and fall for one another, a contingent event. A counter records all the 'magical moments' that have taken place via the networked assemblage that consists of the technological apparatuses, both inside and outside the gallery space (satellite, two iPhones, the physical sculpture, and so on). Authenticity is being questioned, yet perhaps 'true love' is possible? An event of two people meeting and falling in a relationship is not uncommon online. It is the event of that moment, which is where one may say a folded time-space has happened. But the artifice of the sculpture also points to the sheer folly that this can ever happen, its physical swirling poking fun at the unlikelihood of such a 'magical' moment.

To conclude: there are many aspects of a post-digital and post-Internet technological condition, many of which I have not covered. There is one, however, I wish to leave on, and that is the entanglement of analog and the digital. It is a point I have not stressed, as there are art movements which appear, at first glance, to favor analog technologies at the expense of the digital: analogue photography, layering analog and digital images in Instagram, the use of phonograms and cassettes, the turn to knitting (in classrooms during presentations!), and, perhaps the most obvious and interesting: steampunk. One finds artworks where traditional art is 'entangled' with digital aspects; an entire 'craft' culture that comes across in some makerspaces seems to convincingly usher in an 'analog renaissance,' or some sort of analog nostalgia.

But, there is no going 'back.' All these initiatives involve forms of digitality of one sort or another; this is especially true with steampunk, which delights in its digital tactility via its recall of the past. Some maintain that these movements are mere forms of 'remediation' (Bolter and Richard Grusin, 2000), whereas others see this as too limited: the term post-digital needs to be replaced and recognized as transdigital—as technologies of transformative practices; a recognition that such transdigital encounters and practices present the very materiality of technologies with their own

array of affective relationalities (Sundén, 2003). Analog media intensifies the materiality of the digital, and isn't about to go away. This trajectory, as many have pointed out, leads to more and more intelligent AI. The question will always remain open: to what ends? For our well-being or are detriment? The pharmakon, as remedy, poison and scapegoat awaits.

Note

1. I would like to thank Gila Kolb for making me aware of these four artists.

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Bodies of Images: Art Education *After* the Internet

Konstanze Schütze

Images are complex accumulations, which in their doings are capable of shaping the present. We need to explore them as the hyper-active entities they are. (Schütze, 2020)

The Postdigital Condition

The slightly provocative after the internet in the title of this chapter stems from a publication on contemporary art production and curating by Omar Kholeif (Kholeif 2014). *After the internet* situates the following considerations within a reading of the internet as *the* predominant infrastructure of the present. In this context, the preposition *after* marks a state that encompasses the extensive effects of a revolution in media technology and communication. This idea will be built upon in this chapter. Piotr Czerski (2012) described the internet as something not so external to reality, but inseparable from it. By framing this layer as "an invisible yet constantly present layer intertwined with the physical environment" (para.

K. Schütze (✉)
University of Cologne, Cologne, Germany
e-mail: k.schuetze@uni-koeln.de

4), Czerski offered a handy description for the fundamental changes in the contours of our experience in an internet-state-of-mind (Müller, 2011) or culture of digitality (Stalder, 2017).[1] The invisible socio-technological layer, which seems genuinely interwoven with the physical realm, has expanded into a sphere and has formed an ordering principle that goes far beyond the accumulation of devices, cables, and signals. Moreover, it is increasingly invisible (para. 4) and experienced in its effects only and must be interrogated as such.

What we are dealing with is a shift so profound that it can only be outlined when observed in close relation to its anchor points (Schütze, 2018).[2] To translate this shift into more technical terms, media educator and educational theorist Benjamin Jörissen (2017) names three central areas: software, hardware, and infrastructure. The level of software encompasses apps and programs; hardware includes devices and technical components; while the level of infrastructure encompasses the connections and relationships between all human and non-human agents, including the created network frequencies and bandwidths. Together, "these structural spheres represent the performative, symbolic, connective, and material aspects of digitality" (Jörissen, 2017, para. 10, transl. by author) interlaced in so many complex interrelations, and with far-reaching technological, social, and political effects. These transformed conditions have led to transformed demands, which in turn bring forth transformed cultural practices and vice versa. Taking into account that the latter plays a central role both in the reflection and production of art, one can safely assume that the resulting feedback effect is relevant for art education as well.

In this chapter, I present a series of thought experiments for a differentiated exploration of what one might casually call *the image*. Basing on three major theoretical concepts (meme theory, object-oriented ontology, and network effects), images will be reintroduced as entities embedded in complex structural realities that are both driving and driven forces of culture. In this endeavor, they will be rendered as *bodies* compiled from versions of themselves (bodies of images), explored embedded in dissemination processes (memeplexes), and hence contoured as highly effective structures with sophisticated potential for transformation (image objects). With this *re-interrogation* of *the image* is the suggestion of reading of images as *entities* that actively, or inactively, form structural assemblages and maintain energetic human and non-human constellations. At the

close of the exploration, a professional habitus is sketched in which art educators are experts for *image relations*.

The Image as Dominating Cultural Entity

Unsurprisingly, one of the most central nodes within the core of this exploration seems to be the image itself. As a traditional multiplier of ideas, visual appearances seem to structure almost every process of social, economic, and political life online and offline alike. One way of contouring the mentioned condition would be taking a look at the involved quantities and their effects (Kurbjuhn, 2014). In 2015, users uploaded 657 billion images to the internet (Rosa, 2015). Given these numbers and the growing metaphors around a noticed dominance of the visual, one can recognize an essential structural shift in both online and offline images and their biotopes. More recently, even everyday language accredits a particular agency to images as entities. At times, they have been attributed with the potential to seduce and overpower human thought despite their inanimate nature. As internet memes, images seem to be in their most agile form and their most omnipresent. Images as memes are at once considered entertainers, agitators, catalysts, and even essential commentators of transcultural exchange. Visual information supports a diversity of processes economically, politically, and culturally, which leads to merely incomprehensible amounts of data waiting to be realized on screen and cast into visual highways. Hence, it is no surprise that their rank as *passiv*e objects has been repealed, and they've been taken to task primarily for their part in consumer choices and election results (see, for example, *Pepe the Frog* in the 2016 US elections). In this exploration, I attempt a logically consistent account of these phenomena in which images are conceived and analyzed as dominating cultural entities *(German original: geschäftsführende kulturelle Entitäten)*. The term draws on the description of a next society (*nächste Gesellschaft*) by sociologist and cultural theorist Dirk Baecker (2011), who has stated, "The *next art* is the art of the next society," (Meyer, 2014, p. 218) and this next society is "based on the computer as the leading media technology" (p. 218). This observation was introduced into the art education theory by Torsten Meyer (2014) and seems on point and further sharpens the questions at hand for this inquiry: how are images and visual structures organized, and which effects promote their circulation and lead to the capitulating effects of agency embedded in the visual? How can one cease

to imagine their overpowering circulatory potential and their dynamic logics of distribution if images dominate in a cultural and even political sense? Furthermore, which consequences and challenges do these changes entail in education?

DIFFUSION PROCESSES AND VIRALS

In the omnipresent game of winning attention which structures the present, the image is a winner and a loser at the same time. Deeply entangled in the mesh of the present conditions, images are fleeting appearances that command short intervals of attention. Hence, the individual image is relentlessly subjected to regimes of attention and can assert its presence only for a brief moment. Communications scholar Limor Shifman has identified active diffusion processes which facilitate the viral dissemination of these agile entities. Through them, messages, keywords, videos, and images spread from person to person with high speed and broad reach, she summarizes with reference to the internet: "More than any previous medium, the internet has the technical capabilities for global meme diffusion" (Thelwall & Shifman, 2009, p. 2567; Berger & Milamn, 2012). In their research of the effects in *Going Viral*, Karine Nahon and Jeff Hemsley (2013), two media scholars, offered an overview of the critical elements in viral phenomena. According to the authors, so-called gatekeepers (individuals or groups of users with a rather strong impact on their network), are essential for the dissemination and diffusion between networks, and viral processes cannot gain ground without their selection and support (Nahon & Hemsley, 2013). Each viral entity is subsequently the product of gatekeeping activities and reliant on a network of larger interest groups held by the gatekeepers (Chielens & Heylighen, 2009). The sustained hype over cat content and the diversity of iconic new memes are a daily testament to this content propagation process.

Viral content and strategies cannot always be thought of as being positive for society only; they can also have far-reaching adverse effects. One such case is the growing phenomenon of so-called social engineering, which in its original meaning, encompasses forms of psychological manipulation in addition to creative methods of social research. Recently, the set of techniques came to the fore when charges were made against the company Cambridge Analytica. They were accused of at least supporting, if not downright enabling, the rigging of elections via meme direction and complex alternative news cycles. Such social manipulation, that

is, deployment of viral campaigns, can have far-reaching effects, especially when paired with image networks and accumulations of successful memes embedded in more complex, and often unnoticed, meme engineering (Keller 2017; Seemann, 2014). Cultural studies scholar and blogger Michael Seemann describes the phenomenon of *Kontrollverlust* (loss of control over data) as a result of involuntary subjugation to socio-technological effects and power structures. He points to the WikiLeaks exposés and their rapid dissemination as an example: "Within two days, 750 'mirrors' had popped up on other computers connected to the internet [and] a few weeks later, the number had grown to 1,426" (Seemann, 2014, p. 28). Given the exponentially increasing volume of data and available storage in addition to faster copying rates, the information highway has indeed become a one-way street when it comes to personal control. Seemann furthermore deduced that information could spiral beyond any possible control. Within these omniscient and dominating technological infrastructures, knowledge then simply prevails in the ability to intelligently link data despite its unbearable volume.

Habits and Modes of Reception

Having outlined the conceptual background for a logic after the internet and having introduced the image as an entity within various reciprocal relations, rather than an object at our disposal, the next vignette will focus on providing a few more anchor points directly connected to the structural aspects of the image. The first line of thought in this part of the investigation concerns the transformation in our reception habits. It demands an inventory of the tools and concepts we use to deal with images from an interdisciplinary perspective. This trail of thought leads me back to my favorite example, the *Mona Lisa*, whose original is on display in the painting collection of the Louvre in Paris, more specifically *la Salle de la Joconde,* and has at least 22.8 million avatars, versions, and copies online, as well as a broad and almost universal transcultural reputation.[3] Given this fame and the omnipresence of its depictions online and offline, the *Mona Lisa* nearly *demands* to be constantly reproduced and written about—even when the creator has no knowledge of the original context.

The example of the *Mona Lisa's* body of distributed images directs the focus of my inquiry toward the complexified relationship of *the* original with its copies, versions, adaptations, and derivatives. We are no

longer dealing with an individual sovereign image bound by the canvas on which it lies, but rather face an accumulation of images disseminated across the most disparate platforms and circulating through the analog and digital worlds. The circulating avatars of classic artworks and transcultural artifacts are certainly worth a more detailed exploration in terms of their context and sets of features in correlation with the effects of their circulation.

OBJECT ORIENTATION: NETWORKS AND IMAGE OBJECTS

The *image* made itself independent and gained an agency which is hard to contour and fix, even in its dynamics. The resulting understanding of an agile entity with a specific situatedness (see Haraway, 1988)—like the image—draws on contemporary debates in the philosophical areas of New Materialism (Coole & Frost, 2010; Gabriel, 2016) and Speculative Realism (Harman, 2010; Avanessian, 2013). The reflections of an early Object-Oriented Ontology (Bryant, 2011; Harman, 2016) draw attention to the essence and the being of things simultaneously. The version of object orientation I am interested in—while focusing on image structures—builds on an Actor-Network Theory that examines the interplay between human and non-human entities. Actor-Network Theory (Latour, 1986; Latour, 2005) considers objects as active entities in reciprocal relationships with human and non-human actors within the specific condition of the present (see Haraway, 2016; Braidotti, 2019).

Levi R. Bryant (2011) elaborated on this concept. To him, objects ought to be understood less as individual actors than active entities with individual properties and agencies. In this logic, objects result from at least two states of activity, which can furthermore intersect: (1) actuality *(realized aspects)* and (2) virtuality (*potential aspects*). Graham Harman (2016) draws even further beyond these readings of objects as having agency and renders different elements (entities) in relation to others in joined ventures. These entities in relationships could be labeled "compound objects" (Harman, 2016). His argument for such an understanding of objects is that the concrete and cumulative effects of these objects go far beyond the impact of the individual partaking entities—they are infrastructural. Harman hence uses the term object to describe a structure and mode of operation rather than referring to discrete things or solid matters. The objects, as proposed by Harman, are

the products of human and non-human actors embedded in their infrastructures and the logics; they share agencies and effects across vast spatial and temporal distances through catalyzing (symbiotic) connections and relations (Harman, 2016).

The following thought experiment hence shifts our understanding of the image toward a more structural understanding as a group of entities in relation (*compound objects*). It even opens up a rather vast potential for a reorganization of the contours of the image in the post-internet research on it. Following Graham Harman's argument, a reading of images as *entities* seems useful for the rendering of the active dynamics. Considered in this way, images actively or inactively form structural assemblages with other entities and often participate in a shared function with them. Moreover, to sharpen the point here, images are "units in action" organized across spatial and temporal distances, which develop significant and collective impact. In coalition with other entities, they may even produce a cumulative effect. With this in mind, the following vignette will offer some approaches for examining these structural entities, their assemblages, and their relations (together forming the image object). This will place some considerations on a yet-to-be-developed mode of discussing distributed images in the present and their entanglements (Barad, 2007). Consequently, people today are witnessing how images emerge and how they organize in alliances with individual entities when producing their unique effects.

In the process, these formed compound objects (more specifically maybe *image objects*) gather their impact from the entirety of all the relations and potentials of their participating entities. One must, of course, ask whether the term image object would be suitable for what we have been labeling so bluntly as *images* in art history for such a long time. Indeed, what we are now investigating as images proves structurally very similar to what Harman designated compound objects (2016)—derived mostly from the agency of the image itself.[4] The following part of this exploration will add to this interrogation of the image and further summarize compact concepts around the structural novelty in the realm of the digital.

Bodies of Images

The metaphor of a sea of data (Steyerl, 2016) serves as a powerful vignette of the complexity involved with a mesh of conditions. This visualization

renders a vastness that is made up of integral parts and visually captures the sheer infinity of collected data. Individual images are thought of as results of their relations to all other images and imagined as drops of water in a vast sea. Hence, versions of images that are reproduced and disseminated independently of their original, and without any memory of their provenance tend to produce a quasi-autonomous mass with specific laws and effects beyond human control. Comparable to natural phenomena, they exceed the limitations of our tools and techniques and organize into diverse and agile accumulations of superimposed and disseminated images. In their effects, they are similar to accumulations of spontaneously condensing water droplets and might be imagined as towering and charged cumulonimbus clouds, which can occasionally discharge in the form of thunderstorms (or in this case, e.g., viral shitstorms), almost of their own accord, as quasi-autonomous natural phenomena. Quantitative and network-theoretical investigations are pending, yet necessary to substantiate these pictures with numbers and data (Seemann, 2014). A preliminary note for further research: images not only organize into compound objects, they also organize into diverse accumulations with other entities beyond any direct control.

Using this thought as a backdrop for another metaphoric elaboration around the image, the *Mona Lisa* is again referenced. The original has millions of versions that it interacts with symbiotically and competitively. In analogy to an actual body of water, which builds on the idea that water is a divisible body that can still be whole without abandoning the individual (the drops, liters, and milliliters), we might also come to speak of *bodies of images*. In the attempt of contouring what we call the *Mona Lisa* for example, the entirety of all versions and entities of the painting by Leonardo Da Vinci (online and offline alike), could be described as an object with shared properties (and presences) and metaphorically be labeled the body of images of the well-known Mona Lisa. Consequently, connecting these lines of thought, the accumulation of versions or variants of an image form a higher degree of momentum than the entities involved would be able to achieve on their own. Moreover, these bodies of images (the Mona Lisa and other bodies alike) follow their own laws and dynamics.

Moreover, even if they remained inactive at the moment, or in some aspects hidden or invisible, as Harman (2009) deems true for *compound objects*, they can be effective and hence obtain a form of infrastructural agency. Activity and inactivity are thus not limited to the perceivable parts

of reality, therefore entities and their relations are generally regarded as units in action or even "compound objects" (Harman, 2009, p. 214). My preliminary conclusion from an object-oriented approach renders images into entities, which are best explored as *units in action* with a strong inherent tendency to forming highly effective *compound objects* that highly benefit from the effects of their collectives (visible or not).

Meme Theory: Image Complexes

Without sending the already interrogated aspects away, the following paragraphs will invest in another theoretical perspective. Another way of approaching the structure and logic of the image is the research on their memetic effects. Sharing, remixing, copying, & pasting are now integral parts of everyday digital life. These standard practices, which so decisively determine content and impact on the internet, are also increasingly evident in non-digital or offline[5] forms of expression. For this reason alone, it is important to observe and analyze practices and effects in both online and offline contexts. Shifman spoke of the "hypermemetic nature of contemporary culture" (Shifman, 2014a, p. 24).[6] Before the internet, the dissemination and thus the extent of original memes was limited. Shifman points out that "each individual was exposed to a very limited number of memetic manifestations," however, today, we face innumerable "memetic manifestations" and material with high "potential for dissemination" (Shifman, 2014a, p. 28). On a larger scale, these effects cumulatively produce their specific logic of modifying, copying, sharing, and disseminating, which Shifman describes as the "hypermemetic logic" of the present (Shifman 2014b, p. 28). For the question of what images and their transformed properties are, these are important considerations that could certainly be expanded.

However, in contrast to the analog dissemination of cultural entities, the speed and extent of dissemination maneuvers on the internet can now be read and understood in a completely different way and thus can at least be described and contoured as phenomena, despite whatever gaps we may face in explaining their genesis and nature. Yet another aspect of Shifman's approach is of integral importance for the investigation of contemporary images: the relationship of memes to one another, which she draws from Susan Blackmore's explorations of Dawkin's concept. Blackmore sees each meme as one entity among many, which form "co-adapted meme complexes" (Blackmore, 1999, p. 51; Shifman, 2014a, p. 10; Dawkins,

1999). Co-adapted meme complexes are systems of individual memes that are semantically or organizationally linked and mutually reinforce each other. Blackmore shows that each meme is part of an environment, and thus part of other potential memes of the same environmental background. So-called "selected memes," i.e., successful memes that stand out or assert themselves against a common background of other memes, cooperate and spread more widely and sustainedly. Blackmore calls an effective grouping a "memeplex" (Blackmore, 1999, p. 19).

Furthermore, successful entities seem to profit from mutual advantages when supported by other successful memes. This effect leads to highly dynamic communication structures around the image and its accumulations. This, in turn, connects back to strategies of memetic engineering and the idea that content can be modulated into successful content online, such as internet memes. With the emergence of companies like Cambridge Analytica and the rising certainty that internet memes spread ideas faster than other media, the slipstream effects of particularly dissemination-friendly content has reached a new level. This has strong implications for education. Especially, given the risks posed by combinations of phenomena such as fake news and deep fakes, the general *memetic logic* of the present asks for far more structured concepts in confronting the *loss of control* coming with it. As these innovations in more political environments relate to educational and political questions, the present investigation is intended to offer a starting point for a theoretical framework surrounding the implications for education.

The concept of a meme certainly has a lot to offer as an analytical tool for interrogation of the image in this endeavor surrounded by the current mesh of conditions. Consistently assessing the image as visual entities in circulation, addressed as memes—following the definitions of meme by Dawkins (1976) and Hull (1982)—within specific co-occurring conditions is a handy basis for a deeper understanding of their logic of dissemination and effectiveness. Methodologically speaking, it seems clear that one must dissect the image—like the meme—into the factors of its effectiveness to build on them for analysis. For the present exploration, more generally applying the concept of *memeplexes* (Blackmore, 1999; Shifman, 2012) to the organizational structures of images and thinking through their implications in art and artworks seems a very logical next step for the research of the image in its relations. A systematic empirical or network-theoretical series of studies on some of the common patterns

associated with dissemination of visual and non-visual appearances in the arts would be a good start for this endeavor.

Relational Entities and Doing Images

The attempts thus far at describing the structural conditions for the image offer a relational understanding of the image itself. The introduced approaches focus on the relationships that individual images maintain and entertain with other images. At the same time, this approach to images and their relations also considers the interactions of images with other human and non-human entities in specific structural accumulations (Braidotti & Hlavajova, 2018; Haraway, 2016). The dissolution of this parting line situates the image anew, separated from its materiality (and abstracted to a large extent), as a complex entity within the present. It furthermore allows an investigation of the relations without the ballast of the logic of a unique cultural object to which artworks often fall prey. Thus, it seems even more necessary to develop a somewhat unwieldy yet precise formula for the image. While the suggested explanatory models already sketch a helpful matrix for discussing the image of the present, it seems unwise to further pursue broad and interdisciplinary excursions on the image at this point (these are provided in Schütze, 2020). Instead, I would like to focus on the doings with images of a culture deeply embedded in visual culture and finally draw attention to two examples in application. These examples are mentioned to hint at the necessity to understand the complex relations of the image in dissemination and to highlight the extended network of many actors, aspects, and approaches which predominantly are at once active.

The first of the two applications follow the work of art historian and cultural studies scholar Philipp Ekardt, whose approach—drawing on the artists' group Bernadette Corporation as an example—is useful for the discussion of contemporary images. The central point here is the comparative approach to images, which focuses on professed "image milieus" (Ekardt, 2014, p. 89). The procedure can be described as: images are examined in contrast to other images of their time (synchronously—simultaneously), against their technical and social background, as cultural manifestations. Additionally, they are observed and analyzed embedded in their historical-technical conditions across times (diachronically—between times). Using the example of the *Mona Lisa*, one may ask: which images

surrounded the *Mona Lisa* at the time of its creation or during its reception (simultaneous) and how can it be understood embedded in groups of images within selected image milieus (diachronic)? Investigating this is not only the task of art-historical analysis, it is a challenge for art education, which is creating experts on the relations surrounding images. In contrast this approach is the work of sociologist Regulia Valérie Burri regarding the concept of image in the present. With her concept of "doing images" (Burri, 2008, p. 346), she considered the essential image-constituting aspect of working with the image: the actions performed with images make the image. Here, too, the *Mona Lisa* is a good example. Photographing, adapting, and sharing the *Mona Lisa* make it the most famous work of art over and over again and determines its self-renewing, pervasive familiarity. The specific interaction with the artifact thus constitutes it in the first place. It contributes avatar by avatar, version by version, to the *Mona Lisa's* particular temporary or permanent image milieu.

CONCLUSIONS: UNDERSTANDING IMAGE COMPLEXES

It becomes increasingly impossible to grasp the full extent of the induced transformations and their far-reaching implications. Given the fact that the present infrastructures are entertained by networked communication and algorithmic structures, the image has transformed so fundamentally in structure and surface that categorical descriptions prove increasingly difficult (see Stalder, 2017). As complex accumulations, images appear in various—and even intersecting—forms. Between their digital and analog aspects, they occur visually, non-visually, or ephemerally at times. They constitute units in action and hence entertain far-reaching relationships with one another. Images even seem to increase their effectiveness when they organize themselves into (or are organizing towards) diverse accumulations with other entities. Images benefit strongly from networking effects. Gaining an understanding of the *image* demands a much deeper and more complex interrogation into its techno-social condition and requires structural and discursive knowledge about images in complex constellations in general.

This chapter aimed to form a foundation for such a conversation about the educational possibilities as a first step. Encountering images in their complex structural logic and gaining the most precise knowledge possible of the outlined structures, dynamics, dependencies, and *doings* enrooted in the image, will be one of the most meaningful explorations and learning

grounds for contemporary art education. As an art educator, one needs to outline the transformed structures of visuality and imagery in the present and question one's own approaches to the complexity of the present condition. In order to help shape the future, despite the difficulties, one needs to recover implicit (or concealed) knowledge about its complexity. Informed handling of visual and non-visual structures is the basis of any productive relationship with the present mesh of conditions. Starting from the image simply makes sense.

Moreover, the proposed conceptualization of the image after the internet at least indirectly imposes a need for rethinking some of the most traditional concepts of educational theory and adds essential material to the long overdue conversation in the field (see Klein et. al., 2017; Leeker, 2018). One such aspect would be the subject of education, which has been subjected to transformation and seems to have transgressed even further within the mesh of current conditions to dissolve into complex structures (Jörissen & Meyer, 2015). Others are found in the very current and profound *re*-evaluation of active hegemonies of power and structures of colonization that need interrogation from a diversity of perspectives and practices. Consequently, this means that there is a need to invest tools, knowledge, abilities, and professional material far beyond what the practice suggests at the moment in seeking to understand works of art as complex code embedded in active visual and non-visual structures. When allowed, images can be trusted allies in this attempt of understanding the present. However, they need to be explored as the hyper-active entities embedded in structures that they are, rather than as passive, solid objects obedient to our actions.

NOTES

1. Here, I'd like to thank Torsten Meyer for pointing out the *Web Kids Manifesto* (2012).
2. See, for example, the analysis of the "Postdigital Condition" in my dissertation (Schütze, 2020). This paraphrase draws on Jean-François Lyotard's account of *The Postmodern Condition* (1979/1984). He outlines a society that accepted the social, political, technological, and economic transformations brought forth by modernity as self-evident, without assessing the reasons for these transformations (see also Jameson, 1990).
3. On January 4, 2018 (CET), googling the term "Mona Lisa" yielded 25,800,000 results using the standard settings from the Berlin location.

4. To narrow this essential thought down, I would like to divert into a question: How does the *Mona Lisa* relate to Pizza Hut's advertisements of the same entity; and what can we learn from it as spectators and as target groups of these choreographed relations?

5. Here, the term *non-digital* refers to contemporary and historical processes of creation that do not primarily generate digital processes or results, for example, performances or woodcut printing. Similarly, the term *offline* isn't meant to suggest that it is somehow possible to switch off or otherwise leave the internet. Instead, it describes a polar opposite to phenomena that are entirely determined by the logic of digitization.

6. The attractiveness and dissemination of some online phenomena also have interesting offline effects. One such example would be the 2015–2016 popularity of the Ice Bucket Challenge.

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Post Scripts in the Present Future: Conjuring the Post-conditions of Digital Objects

Aaron D. Knochel

When I enter "Mona Lisa" into a Google search, I get 192,000,000 results. If I limit those results to the past hour, I get 63 results.[1] This is the Mona Lisa as a post-internet phenomenon: connected, in the network, impermanent, and always something more by the connections that it makes. Of course, this is not to say that the Mona Lisa has *ever been a singular phenomenon*, as a poststructural assessment of anything might lead to a constellation of never-ending semiotic events, where meaning shifts in and through human language. However, the never-ending semiotic events that always already create the Mona Lisa as a multiplicity have an additional character in the post-internet condition in that this semiotic terrain manifests as a visualization of what Sweeny (2013) refers to as a complex visual network. Philosopher and psychoanalyst Felix Guattari (1990/2013) comments on this growing multiplicity in 1990, coining the term post-media to refer to the convergence of television, telematics, and informatics[2]:

A. D. Knochel (✉)
Penn State School of Visual Arts, University Park, PA, USA

> Through this transformation the classical triangulation – the expressive chain [*chaînon expressif*], the object of reference [*l'objet référé*] and the meaning [*signification*] – will be reshaped. For instance, the electronic photo is no longer the expression of a univocal referent but the production of a reality among others. (p. 27)

To extend Guattari's speculation on the post-media is to account for the Mona Lisa as an impossible many that is searchable, ever-growing, and traceable to a myriad of meme makers and remixes. In considering the Mona Lisa in the post-internet condition, how might making and learning in art and media education respond to this moment?

Recognizing the role that network computing and software play for many in the contemporary landscape of cultural production, media saturation, and shifts in notions of literacy are paramount in understanding the future of art and media education.[3] Speculating on making and learning may be aided by building on theorizations of how technological media impact contemporary artistic practice and aesthetics because of the ways that these same technologies are transforming society. Mobile computing, endless cloud data storage, wireless connectivity, and artificial intelligence have elevated the significance of how data is received and sent by the intermediaries of code, big data access, and broadband mobility. These phenomena have led to a more participatory culture of makers, enabling anyone to be an image maker, a media producer, and/or a cultural critic (Jenkins et al., 2015).

There is a good deal of ongoing work needed to understand how learning and participating in the arts in this new space of pervasive making is possible, and what it may be doing to making meaning in a social context. Recognizing antecedents in critical media education models that highlight agentic performances of the viewer in coding and decoding media are important, but might there be a need for further theorization on the role of makers in cultural production that also contemplates algorithms, connectivity, and issues of access (Buckingham, 2019)? Additionally, conceptions of the viewer and the spectator need to be understood fluidly within the role of makers so that artificial bifurcations need not dilute the many faceted nature of agency. Makers are producers and consumers of media. Art and media education might not be limited to considerations of producing and consuming media, but expand to question the capacities of data structures, network formations, and hardware configurations as the hidden curriculum in the classroom of

the present-future. To do this critical work, this chapter reviews a range of post-theories, including post-media (Quaranta, 2013; Weibel, 2012), post-medium (Krauss, 1999; Manovich, 2001) and post-internet (Olson, 2008; Vierkant, 2010), to synthesize and advance a range of theoretical tools that may provide insight as to the immanent qualities of data and connectivity that impact making and learning in the arts. Synthesizing this range of post-theories frames a disjointed discourse of media theory relevant to art and media over the previous decade, but also questions the materiality of digital objects. Artists and educators need to consider theoretical tactics of posthumanism and education to form new trajectories in critical theory in light of a world without humans.

In what follows, I combine a theoretical argument on posthumanism and post-theories to provoke the dynamism of materiality in a post-internet condition for creative practice conjuring a future for a post-conditions art and media education. First, I follow the post-conditions from post-media, post-medium, and post-internet to come to some sense of "the moment" and its possibilities. I then focus on the materiality of digital objects to theorize new opportunities for contemplating how artists working in 3D modeling and digital fabrication may offer insights into the possibility of making meaning in this moment.

Conjuring This Moment of Post-conditions

The moment in question is one that has been changed through network connectivity, mobile computing, supercomputing, machine learning, and the ubiquity of algorithms. Early twenty-first-century societies are in a technological moment that is connected historically to mass media, but the dynamics of visibility have become inverted whereby the many broadcast to the many within a closed data exchange system controlled by fewer and fewer. This is how Facebook killed the Internet (Guinness, 2015; Rovics, 2014). Perhaps this moment is typified by a treacherous assemblage of mediacide: the Internet killed newspapers (Stapp, 2019); the death of the "Old Internet" from the aughts (Notopoulos, 2019); social media erodes the potential of a shared public sphere, killing the once utopian hopes of the World Wide Web and denigrates democratic discourse (Li & Benkredda, 2019), and your own complacency killed the Internet (Louis, 2012).

These various 'killing sprees' are all due, in part, to the fact that interactive and connected life is serviced through mechanisms of silent capital

exchanges whereby the power of networking is free as long as you are willing to pay the price of your personal data. In a devilishly easy rearrangement of labor exchange, the attention that was so important to the function and spectacle of mass media has been replaced by a consent to data violence that is obfuscated through the lengthy consent forms users all agree to each time they start a new app or update an operating system. Labor is no longer typified by watching and listening, but by simply consenting.

In addition to the prognostication of Guattari (1990/2013) in his use of the term post-media, other media theorists, like Domenico Quaranta (2013), have proclaimed a post-media era of cultural production. Software is the inheritor of the television, of radio, and of the printing press in reorganizing knowledge flows and creation making all things digital. Quaranta (2013) sees the post-media reference as a (possibly) tired extension of the circularity of 'post' arguments in aesthetics that typified the closing of the last century. However, similar to theorizations of post-internet (Olson, 2011), Quaranta finds the term to have value in that post-media might still be redeemable as a place of departure as opposed to a destination. While Quaranta critiques the eremitic qualities that Guattari forecasts, he does suggest that post-media may be a way to redeem new media art as a reframing away from its valorization of technology and instead as invested in the material specificity of ideation and modes of expression possible in the contemporary moment, which heavily include media technologies (2013). Post-media focuses on the

> end of the consensual era of mass-media [implying] the decline of the mass media used by the powers that be to maintain consensus, in favor of a grass-roots use of the media as a tool for activists and political and cultural movements. (p. 200)

In this sense, post-media is like an empty cartoon thought bubble that marks the shared trauma of mass media psychic-labor relationships between producers and consumers, but not quite able to articulate the stammering moment of the next utterance of what this techno-participatory-labor will mean into the future.

In Quaranta's (2013) argumentation, the usefulness of post-media as a point of generation relies on the double entendre of the term *media*, as both a broad reference to the mass communication systems that have marked the twentieth and twenty-first centuries and the somewhat more

art-centric notion of media as the materials by which art is made. This double entendre is seemingly absent from post-internet discourse and a distinguishing factor between these discourses. For critics such as Rosalind Krauss (1999) or Lev Manovich (2001), there has been much more pointed use of the term post-medium to highlight this second connotation of the term media. Manovich (2001), for example, argues for a post-media aesthetics that considers the ill-fitting assessment of medium-centric critique to address the expanding making practices brought on by computer technologies not because there is a need for more categories (i.e. net art, interactive art, etc.), but because these proliferations only assert further the inadequacies of these designations in the first place. Since the 1960s, the proliferation of forms of art practice and objects and the convergence of these types with popular forms of expression, have destabilized canonical classifications that once allowed tidier assessments of what painters do, what sculptors do, and what printmakers do. Instead, Manovich suggests conceptualizing mediums as software, in that

> thinking of culture, media and individual cultural works as software allows us to focus on the operations (called in actual software applications "commands") that are available to the user. The emphasis shifts on user's capabilities and user's behavior. *Rather than using the concept of medium we may use the concept of software to talk about past media, i.e., to ask about what kind of user's information operations a particular medium allows for.* (p. 7, italics in the original).

When a painting becomes an interface then you are in the post-medium. Artist-curator Peter Weibel (2012) also takes up this discussion reflecting on the retroactive qualities that new media has on old media, stating "new media were not only a new branch on the tree of art but actually transformed the tree of art itself" (para. 20). Weibel makes a case that the computer and digitalization (what he broadly refers to as the media) has mutated all art forms all the way down so that the idiosyncratic characteristics of a particular medium, say the flow of paint or the patina of bronze, is "more or less over" (para. 29), and

> consequently, this state of current art practice is best referred to as the post-media condition, because no single medium is dominant any longer; instead, all of the different media influence and determine each other. The

set of all media forms a universal self-contained medium. This is the post-media condition of the world of the media in the practice of the arts today. (para. 33)

Perhaps this is a moment that is important to reflect on: there is only post-media and everything is subsumed into a post-medium. While there is an expanding horizon of creative practice, there is concurrently a leveling effect that makes media indistinguishable from art, and vice versa.

The leveling effect theorized in post-media and mediums is accounted for in the post-internet condition by the network ontology of current technological systems that is transposed to all forms of art. A post-internet condition is an ontology after the Internet manifested by the totalizing effect of network connectivity. Indeed, as artist Marisa Olson (2011) states "The notion of the post-internet encapsulates and transports network conditions and their critical awareness as such, even so far as to transcend the internet" (p. 61). In the post-internet condition, there is a sense that the Internet, the combination of communicating computers in a decentralized network formation that spawned decades of multimedia exchange, is the post-medium in question: an all-encoding, digital media extravaganza that can possibly take into account any and all art, even art that came before (Olson, 2008). From this position there is also a chronology that is advanced, in that there is no longer a post-twentieth-century mass media as the field of cultivation for the possible but moving into what may be possible in the almost-future of the twenty-first century after the Internet. As Tavin and Tervo (2018) put it, "Within the contested milieu of post-conditions, the Now becomes best understood via its *afterness*: We have come to an end of what once was, dwelling on the potentialities of the Now" (p. 285). Perhaps the procession of time, and the reaffirmation of history as a metanarrative, suggests that the post-internet condition needs further mutation as the tendency of mediacidal consumption that hacks up the Internet in the time of Facebook, Amazon, and Google may suggest. The Internet in reference is in retreat.

Mega-corporations have so thoroughly changed online exchanges, social networking, commerce, and information exchange that it would be myopic to see the Internet in its flatness as the post-medium conceptualized as a through line of network structure and computational force that extends from the first instance of a fledgling decentralized network in the Advanced Research Projects Agency Network (ARPANET) launched

in 1969, to the development of the World Wide Web in the early 1990s, to the emergence of heavily commodified massive intranets like Google or Facebook. Certainly, the through line may be the increasing ubiquity of network connectivity and computing in everyday life, but how does one collapse vlogging, email, chat rooms, streaming, cloud computing, and online collaborative platforms into a tidy package that can be endlessly assigned to the trough of the post-medium known always already as the Internet? There is a real hazard here that this conceptualization runs the risk of doubling down on neoliberal strategies to commoditize every bit, as Josephine Berry Slater and Anthony Iles (2013) warn, "Post-media then, cannot simply be equated with the digital convergence and networking of media: it remains instead a tactics of singularisation and subjectification immanent to capitalism's programmatic conversion of all technologies into conduits of conformity" (p. 11). In this way, a post-internet condition is undeniable for those of us living in post-industrial capitalist societies driven by knowledge economies and data connectivity. However, the current state of megacorporations colonizing online lives into their particular closed networks or what may be better described as a post-macrointranets condition will surely recede as the metanarrative of progress predicts.[4] Even Facebook has to die.

Perhaps the more important question might be is there an offline and how might its post-internet condition be theorized? In a social system that is characterized by metadata, where exchanges become timestamped and registered in likes and emoticons, what may be the post-internet condition is the becoming social of the art object or the reconciliation of the network ontology of all things. As artist Artie Vierkant (2010) asserts, "Post-Internet objects and images are developed with concern to their particular materiality as well as their vast variety of methods of presentation and dissemination" (p. 1). When art becomes social, it is this very connective elasticity that makes it such: responsive, interactive, and mutable. However, the character of this mutability changes when pathways of mutation may be mapped, or pinged, so that their very definition may be determined through the distributed networks of electronic information that is the character of a current dominant form of communication: social media. An artwork, then, is post-internet when pathways by which it is connected are articulated. To put it another way, the symptoms of the post-internet condition appear within worlds of data where perception of the work as changing is through its connectivity.

This perception is not just for the spectator, but for the maker as well. Post-internet art is not just about the uncertainty of the terrain of meaning, but the uncertainty of the thing itself. Post-internet art is really about the status of matter. It is a time of living in a set of relations that are material that need to afford the immaterial their due weight to impact life. The most prominent of these movements of giving weight has to be digital materiality: a concerted conceptual effort to give matter to the translation of life into the binary code of 1s and 0s. In the following, I focus on the matter of digital objects to contemplate the impacts of conjuring this moment.

Per(form)ing the Matter of Digital Objects

The status of the object has changed pretty dramatically in the post-conditions. Object-oriented philosophies have helped to cast a light on things (Bennett, 2010; Malafouris, 2013), objects (Bryant 2011; Harman, 2002), actants (Latour, 2005), and aliens (Bogust, 2012; Salter, 2015) as they act in the social and cultural sphere. Asserting this sort of autonomy to things/objects/actants/aliens (t/o/a/a) is also a focus on the symmetry of humans and nonhumans within social and ecological formations, or what is called variously a social ontology (DeLanda, 2002); the mesh (Morton, 2012), and co-figuration (Knochel, 2017). In a social ontology, agency is ascribed to both humans and nonhumans as mediators in a flattened topology, and my interest in this ontological perspective aligns with what Fenwick et al. (2011) call sociomaterial approaches to education research and in particular developing curriculum for critical digital makers (Knochel & Patton, 2015; Patton & Knochel, 2017).

Discourses of t/o/a/a often compel considerations of materiality of digital objects. How might the digital produce material realities? How do digital objects sustain durable material relationships to engender and/or encumber ontological assemblages? I've previously argued against the material cynicism[5] focused on digital making, and advocated for engaging the materiality of data-bodies in art education and curriculum theory (Knochel, 2018; Knochel & Patton, 2015). I'd like to pursue further the digital object within this network ontology by considering what I have referred to as per(form)ing.

The importance of this focus is to extend further the speculation of what makes post-internet art different, or notable as something new for

consideration. Afterall, there have been previous movements in new media that focused on the Internet, such as net art, but it is precisely the nature of digital objects to move on- and offline that makes it distinct to this moment (Vierkant, 2010). This on/offline fluidity is implicit to the logic of per(form)ing in that form takes on an immanent quality that is forever realized in intensive and extensive properties. Per(form)ing is an ideation rooted in prototyping. Making is iterative, and through iteration there emerge instantiations of virtual potential. Per(form)ing ponders the implications of thinking digitally as an unfolding of virtual potential. Necessarily, digital codification reduces representations as encoded in numbers, 1s and 0s, but how might infinite potential remain while still becoming one instance of an artifact. Likewise, per(form)ing articulates a relation between the matter of objects and their numerical aspects in spatial relation or more accurately how form is translated into the slice. The logic of the slice is dominant in translating 3D objects through workflows of on- and offline manifestations. Per(form)ing is not the rigidity of schemas that can be found in technical drawing as predefined points of object mapping, but rather form as an algorithm.

Important to per(form)ing thought as both procedure and creation is the concept of the "numbering number" (Deleuze & Guattari, 1980/1987, p. 389). For Deleuze and Guattari, "numbered numbers" count and codify quantity. Numbered numbers are designed objects such as machine parts or buildings expressed in geometric relation that is prescribed by measurement, gravity, and physics. Numbering numbers represent a conceptual shift that maintains the quantitative difference between numerical values while also asserting a qualitative difference achieved in infinite variation. Numbering numbers are the quantities suspended in iterative design cycles and expressed in the extensive properties of prototypes. The numbering number as multiplicity is a number concept that can support the quantitative nature of per(form)ing as immanent in the digital object as a computational material. Numbering numbers express the object as an assemblage of material and ideational possibility, and the object itself becomes a *software* of intensive potential with infinite extensive realizations.

One way to conceptualize the numbering number is the spatial relationships that are created through the millions of data points used to construct digital objects. Any given point is static and fixed as an entity, but multiple data points are an instantiation of the numbering number illustrating the possible expressions of reconstructing space. Consider

Morehshin Allahyari's *Material Speculation: ISIS* (2015–2016) as an interesting project to think through the implications when data points are reconstituted through additive manufacturing techniques such as 3D printing. *Material Speculation: ISIS* reconstructs 12 original statues from the Roman period city of Hatra and Assyrian artifacts from Nineveh that were destroyed by ISIS in 2015 (https://www.morehshin.com/material-speculation-isis/). The reconstructed artifacts are offered as 3D models that can be 3D printed at any scale and material. Allahyari's reconstruction process incorporated vast image records online, and 3D models are "created from dozens of still photographs…evoking the original in a scale-less, placeless version without material conditions" (Soulellis, 2016, para. 9). However, as soon as the figure model is printed, it becomes fixed as an extensive expression of those intensive properties. In February 2016, *Rhizome* included one of the digital statues, that of a figure of King Uthal, for open access so that anyone could download and print the object. From the ruins of a desecrated limestone statue, arose an infinite multitude of King Uthals raising questions of preservation and object guardianship. Allahyari's reconstructive gesture does conserve the data-bodies of these ancient artifacts, but per(form)ing holds that status of the digital object and its role in serving as cultural heritage in suspense. What instance is preserved, by whom and for whom?

A key property of the digital object that captures the role of intensive potentials in per(form)ing is scale. Scale is a set of relational dimensions that are proportional, such as a larger version of a photograph, or "a distinctive relative size, extent, or degree" (Merriam-Webster, n.d.) such as when a project is small scale. Per(form)ing scale is possible through the logic of the slice that is procedural layering of data points into slices that allows for infinitely complex 3D forms to come into definition and disseminatable form. Digital slicing is used in magnetic resonance imaging (MRI), computerized tomography (CT) scans, and 3D models prepared for 3D printing. What is significant about the slice is that it is scalable: each layer can be sized up as infinite variables at every data point essentially making size an intensive property of the digital object. By implication of this scalability, the digital object also is marked by its potential for accumulation or the extent to which it can per(form) as infinity via massive data storage, the infinite cloud, and supercomputing. There is no limit to how big the data can become.

As an example of per(form)ing scale consider Julien Deswaef and Matthew Plummer-Fernandez's *Shiv Integer* (2016) which is a bot that

inhabits the website *Thingiverse*. Thingiverse is a massive online 3D printing community with a vast archive of user-created models from keychains to engineering parts. The bot downloads 3D models from the Thingiverse user community following Creative Commons share alike licenses, and then recombines them into random assemblages that then get posted back on Thingiverse. The user community has mixed reactions about *Shiv Integer*, being a bot clearly violates the Thingiverse user agreement, but it is still going strong with 651 designs posted under its user profile (https://www.thingiverse.com/shivinteger/about).[6]

Referring to the project, Plummer-Fernandez (2016) describes *Shiv Integer* as both taking cues from Dadaist readymades and chance art as well as being interested in the role of remix and copyleft author relationships that are codified by Creative Commons. For my purposes, I offer the sculptures as a capture of the potentials of scale in per(form)ing: as digital objects they may manifest on and offline with an infinite variability in size and dimension. Really the only thing that limits the hardcopy is the size of the 3D printer. In addition to the scale of the sculpture themselves, and the extent of their accumulation is totally arbitrary. In other words, the instance of the sculpture is only constrained by the hard coded limit that is a part of the assemblage algorithm, which is set and without logic, and the number of user-contributed designs that is a part of the Thingiverse archive which is $(n + 1)$. Both instances of scale in *Shiv Integer* suggest that the object never ends, and while we can assert that the sculptures have scale they have no size.

Conclusion

Makers and learners in the post-internet condition have an array of tools at their disposal, but the convergence of all media into concentrated macrointranets present a problem for issues of freedom of expression and creative practice. In my review, I tried to construct a synthesis of various post-theories, including post-media, post-medium, and post-internet, in order to come to some understanding of the contemporary moment in art and technology and what it may mean for making and learning in art and media education. The post-internet condition offers a glimpse at blended material realities that aren't easily categorized as on- or offline, but are easily fragmented and infinitely searchable. These momentary glimpses which characterize this world feed assemblages implicating the social sphere and notions of self. However, within this quickly changing

view are the potentials of the per(form)ing digital object that is unconstrained by scale offering a weird world of matter and a multiplicity of instances of the artifact unique to the digital object. Core to these instances of the digital object is a reconciliation of our networked lives as a posthuman potential for making and learning. Digital objects may allow for new understandings of material relations that aid in navigating an uncertain future.

Notes

1. Search conducted February 10, 2020 at 5:20 pm.
2. Note that Guattari in 1990 represents a generation of media theorists and poststructuralists, among them Roland Barthes (1980) and Marshall McLuhan (1964), paying attention to mass media and meaning in modern society, but I focus on Guattari here due to his particular characterization of post-media.
3. It is vital throughout my argument to resist a generalization of technological ubiquity as networked, mobile, or even screen based in that the economic drivers that allow access are profoundly driven by inequality. Even in post-industrial societies in phases of late capitalism such as the United States that seem to display a pervasive digitalization that allow consideration for a post-media era showcase dramatic inequality of access and use based upon where you live and your socioeconomic status.
4. Of course, one may read the evolution of mass media through the twentieth and twenty-first century as a story of progress, but the very real catastrophe of climate change may provide a very dramatic plot twist.
5. Material cynicism is neoluddist disapproval of digital practices in art and design contexts because they do not manifest more traditional material artefacts such as a painting or ceramic sculpture. The position adheres to romanticizing creative self-expression often ascribed to art learning in more traditional studio practices and often ignores the material forms and embodied experiences of digital practices.
6. As of February 20, 2020.

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Why is This Important for Art Education? Transdisciplinary Networks, Research, and Subjectivities of the Post-Digital and Post Internet

CHAPTER 7

Educating the Commons and Commoning Education: Thinking Radical Education with Radical Technology

Grégoire Rousseau and Nora Sternfeld

Introduction

This chapter is designed as a conversation. The dialogue facilitates the encounter between our two positions within what this book calls *Post-Digital, Post-Internet Art and Education*, allowing us to articulate our standpoints and current practices. To do this we decided deliberately to leave *post-internet* as the label for a certain kind of artistic approach behind. Our aim is to come further with a more concretely engaged questioning based on the wish to work on what could come after the post of post-internet—as it felt nothing but a form of being stuck to us. In contrast our approach intends to engage and question concretely what could be a common practice distant from thinking art as the value form

G. Rousseau
Helsinki, Finland
e-mail: mail@stationofcommons.org

N. Sternfeld (✉)
Hochschule für bildende Künste Hamburg, Hamburg, Germany
e-mail: nora.sternfeld@hfbk-hamburg.de

of capitalism or aesthetic experience as a direct expression of corporate spectacle.

We know what being stuck in capitalism means; cynicism, art as branding, and in fine artistic practice as a form of entrepreneurship. We know that our survival depends to a certain extent in its affirmation, we know it and do it with every line, with every click, but we want to insist and persist with imagining other possible structures for education and for technology. In this sense we situate this dialogue in a state that aims to work through and overcome cynicism. We want to imagine another collective gesture, one that would form the objective conditions of production for this new space situated in, against, and beyond capitalism.

Considering the post-digital as a condition of our time, we begin the dialogue by together thinking through our respective experiences. This encounter inquires into, but also questions, the potential role of current radical/critical ideas/position/theory within a technological context. The intention is to reflect on our common standpoint on particular processes currently taking place: the privatization of interest and commonalization of resources. We further ask what it specifically means for education, art, and culture. The dialogue probes these questions from the perspective of an educator and an engineer, respectively. Nora Sternfeld's practice originated in radical pedagogy, philosophy, and cultural studies, while Grégoire Rousseau, after training as an electrical engineer, has been active in alternative sound art practices since the mid-1990s.

All over the world, education—which is understood differently, as a universal right and public good—is facing processes of economization and privatization. Technology—which is also understood differently, as a common means of production, collaboratively developed—is being taken away from the public and put into corporate hands. Against this background, our conversation proposes a radical understanding of post-internet art education. It explores necessary convergences in radical practices, as well as possible future strategies for education and open technology. The exchange ranges widely across ideas of resistance, emancipation, and commoning practices. Specifically, we ask how new models of understanding technology and education as commons can challenge the neoliberal agenda and move away from established policies, and how a collective re-appropriation of the means of production—in particular in communication and education—could emerge within a post-digital society.

Working together in a discursive open laboratory, we investigate the possibility of a collective effort to learn from each other and from our respective approaches, theories, knowledges, and know-how. These derive from substantially different experiences and practices. This conversation stages an encounter between our knowledges and contexts, aiming to find direct intersections in their thought. However, it also seeks to learn from two very different approaches toward the *commons*. The ultimate aim is the production of dialogue and a space to discuss education and the post-digital from a radical position.

Situating Ourselves

Nora: *As we try to bring our perspectives together, let's start by understanding them. We announced that we speak from a "radical" perspective. But what do we mean by that?*

I would regard myself as a radical educator. Let me try to say what this means for me: In theoretical terms, I make strong connections to theories of *radical democracy* and *radical pedagogy*. The most important representatives of this re-politicization and democratization of democracy are Ernesto Laclau and Chantal Mouffe, whose book *Hegemony and Socialist Strategy: Towards a Radical Democratic Politics* (1985) was the first to introduce the term "radical democracy" to the political lexicon (Laclau & Mouffe, 1985). In terms of my radical pedagogy, I have been very much influenced by the Brazilian educator and philosopher Paulo Freire (1970) and by bell hooks (1994), the African-American writer, teacher, and Black intellectual. Both have written and worked on education as a practice of emancipation and change. The idea of such an endeavor is to collaboratively understand the conditions under which we live, in order for us to change them. In this sense radical education is also critical education: it is critical, collaborative, and transformative.

In Vienna, along with my colleagues Renate Höllwart and Elke Smodics, I am part of *trafo.K*, a collective we founded in 1999. Here is how we describe our practice:

> *trafo.K* is an office based in Vienna, which works on art education and critical knowledge production. Our projects question social phenomena which are perceived as simply given. We intervene in existing relations, more often than not using unexpected strategies. We are interested in revealing the structures of media and institutions, and in creating public awareness of

alternative (hi)stories and images. In doing so, we want to find out what is produced when different forms of knowledge, artistic strategies and socially relevant themes are brought together. Our projects are based on collective, emancipatory processes, which allow a variety of perspectives to come into contact, opening up new spaces of agency. (https://www.trafo-k.at/en/about/)

Does that make sense to you? And how would you describe your own position?

Grégoire: I understand this to mean your pedagogical practice is looking to do more than merely interpret the questions posed. It wants a concrete collective transformative process.

Nora: I am actually not sure if this is that much of a contradiction. Isn't interpreting a question often also a way to change it?

Grégoire: What I said just there was not an attempt to essentialize your work, I am just trying to put it into my own simple words. From my standpoint this very *concrete transformative process* happens to be crucial: we'll get back to that in relation to commoning practices. However, now I would relate my own pedagogical practice directly to your words, 'we question things that are presented as simply given, and we intervene in existing relations.' I was educated as a computer engineer and worked for many years in industry. My early electronic art practice took inspiration from Situationist approaches, for instance the idea of the "détournement" (Debord & Wolman, 1956) of my professional working equipment into sound devices in my studio. I even brought these on stage once.

Nora: This actually sounds like a good example of deconstructing the difference between interpreting and transforming. *Détournement* could be a way to 'interpret' material differently in a very practical sense, to change its 'use' through a different understanding, to re-appropriate the material by taking it so seriously that its interpretation flips.

Grégoire: Exactly. And I would even go further, based on my own experience as an educator in technology: What seems most relevant for me in educational technology as a collective learning process, is the understanding, or awareness, that what is simply given may possess *more*. The precise idea of what is *more* cannot be defined, nor should it be expected to be as such. This is the meeting point of art, technology and collaborative practices: It may be a dead end, or an experimental art form, or even a spark triggering something else. The *more*, as a process, produces a new space for production and emancipation. This is what I mean by

a collective transformative process, and this is where I would situate my practice. An actual radical technology practice must both comprehend its own position within existing conditions, and from that position, it must produce an action of return toward public hands. This may simply sound like another form of analysis, but I can assure you the work is very much hands-on. The on-purpose over-fluidity of media activated by Post Internet Art should only emphasis the hard materiality the Post Digital condition reminds us. Post Digital Commoning practices as demonstrated by Felix Stalder (2013) produce this self-reflective moment to envision together something else. Open Source Technology is one of the early examples of collectively-designed digital production. However, obviously this technological emancipation movement has thus far never happened and will never simply come about by itself.

Nora: And what if we would insist and persist that this emancipation could actually be (and even is) a post-digital or post-internet perspective? Sometimes it seems as if historical discourses and agencies are almost eradicated from actual theories and practices. But this doesn't mean they don't exist.

Converging Histories

Nora: Here is a point where it seems to make sense to examine the histories of our own approaches and practices. I have worked on the history of radical education and you have written about the history of electricity. In your book, *Electric Energy in the Arts, Knowledge Happens Together* (Rousseau, 2018) you discuss how technology and electricity could be used for emancipatory practices. Could you give some more insight into that?

Grégoire: That book's point of departure was an investigation into the relation between artistic and scientific practices: What do they share? What makes them different? How one can actually learn from the other in terms of collective knowledge production? Within that context, electrical energy is the red thread running through the entire process. We take electricity for granted in our everyday life, as something we can generate, control and distribute. However, the current situation did not come about by itself nor as the result of a very linear scientific progression. On the contrary, the history of electrical energy was a difficult process of unplanned discoveries, failed attempts, individual and collective efforts, and political struggles. It should not come as a surprise

that the Italian Futurists considered naming their proto-fascist movement
"Elettrissimo" (Blumenkranz-Onimus, 1983). Lenin responded with the
slogan, Communism is Soviet Government + Electrification of the Whole
Country (Lenin, 1920). At this point, I must make reference to a moment
that deeply transformed my practice, both as an electrical engineer and
an artist: Quinn Latimer's text and exhibition space "*Technology suggests
the hands*" (Latimer, 2014), which featured in documenta 14. Latimer's
work shows how, and why, one of the best-known technology compa-
nies exploited Navajo women, taking advantage of the visual similarities
between electronic circuit board and traditional Navajo weaving crafts. I
realized then that electricity—both as a form of energy, and a technology
in digital form—had a particular position within both art practice and
education. In this sense, electric energy as form of power and technology
produces a space for critical practices and emancipation. However, this
must come together with constant, collective reflection on the conditions
of its production.

Nora: This brings me directly to what interests me in the history of
pedagogy as a critical practice: I would like to bring up two elements we
both mentioned earlier: The need to take a stance and the need to take
a stance *together*. Both of these things form part of political education
from the very beginning. Peter Mayo (2006), who writes about Antonio
Gramsci and Paulo Freire, sums this up in a simple question that prob-
ably every political pedagogy must ask: "Which side are we on when we
educate and teach, and when we act (Mayo, 2006, p. 20)? The ques-
tion arises in relation to power: Is education about preserving existing
power relations or is it about challenging them? Paulo Freire, the Brazilian
pedagogue, liberation theologian and educational theorist, positioned his
own approach in this way: "Tactically within the system and strategically
outside it" (Mayo, 2006, p. 21). Freire's assumption was that there is
no such thing as *neutral* education. Education is always political, either
serving to consolidate existing conditions, or helping to change them.

Radical education's other great question concerns relations within
education itself. It questions the undisputed power of the teacher, under-
standing learning as an active practice of collaboration. In other words,
radical education conceives of the essential link between pedagogy and
society both in terms of social transformation and of removing the clear
distinction between active knowledge production and passive reception.
These two goals have been the central aspects of debates on a critical,
revolutionary pedagogy, from Marxist approaches in the 1920s through

the Black Power Movement in the late 1960s, to decolonial approaches today. From here we come to an understanding of education, first as part of the wider struggle and, second, as a collaborative process of learning together, learning from each other.

Another history which interests me is the history of a practice called *Kritische Kunstvermittlung* in German. Something would go missing if I were simply to translate this term as "critical art mediation," or "critical art education." The German prefix "Ver-" in the original word *Vermittlung* adds an element of questioning, of crisis, additionally implying something like an "unlearning." Anyway, what I wanted to say is that since the late 1990s this "Kritische Kunstvermittlung"—this art education practice—has developed ways to reflect, question, critique, and reimagine art and the world in various artistic, educational and experimental contexts. To me, this seems very interesting and relevant to our topic. I would describe these practices as reflective, playful, investigative, collaborative, open-ended. They offer solidarity with existing social struggles and are highly critical practices, even though they tend to be formulated from within the art institutions they critique. Janna Graham has described the practices used in this context as Para-Sitic. And I would actually like to ask how these particular approaches can be translated into technology. What would be a technology that is based on critique, on dialogue, and on solidarity? Translating this into strategies for a post-internet art education two words come immediately to mind, forming the possible basis for a convergence: hacking and commons.

What Do We Mean by Commons?

Nora: In his book *Digital Solidarity*, Felix Stalder (2013) describes the commons as follows:

> The most comprehensive new formations for organizing solidarity are developed through the renewal of the idea and practice of the commons or commoning. These are organized, long term processes by which a group of people manages a physical or informational resource for joint use. (Stalder, 2013, p. 31)

My own perspective is slightly different. It seems important to me to draw a strong relation between the term *commons* and the phenomenon of property. I actually understand commons as *public property*, that which

belongs to everyone. Let me try to explain this through a museological example: In museology, the history of public collections is often told in connection with the French Revolution. In the Louvre, in fact, something significant happened in relation to the ownership of objects. In the revolutionary museum, the representative objects of the nobility and the Church were made public. This was the result of expropriation, the appropriation of the collections for the general public. If the objects had, until the Revolution, served as representations of the powerful, they were now socialized. In the process, objects underwent a change of meaning, a revolutionary de- and recontextualization. Since then, we have assumed that public museums and their collections are not simply *available* to everyone, but that they in fact *belong* to everyone. In the case of the Louvre, the public cannot be understood separately from the fact of property.

Grégoire: Let's remember that revolution first happened, the people collectively re-appropriated that property. In that sense, the property of public objects followed the monopoly of ideology.

Nora: Obviously, we have since lost that tradition. The public itself has increasingly been expropriated: In our own neoliberal era, the public sphere is more and more being separated from property, and thus emptied of its core meaning. What I mean by this is that, in everyday language, we almost naturally assume that private collections, archives, or research centers can be public without giving up their private ownership (think of the Getty Foundation, or of Google Museums). But if modern museum history teaches us that publicness has something to do with common property and not merely with access, then this double status is actually a contradiction in terms. This contradiction has spread particularly rapidly over the last two decades, as the public character of institutions has been increasingly eroded. Public institutions are being quietly privatized, at the same time as we have seen a boom in discourses of "public spaces" and "public programs." And just as with material things, there is no reason why digital objects or digital copies should not belong to everyone.

Grégoire: We have to go further and ask: What if the property at stake is actually in the making, within a dynamic process? What would be a valid strategy when even the precise property cannot be identified? I therefore take a different approach. On this question, I would relate more to the position of architect and educator Stavros Stavrides (2016). Public property, whether a space or object or whatever else, is defined by an authority of some sort which establishes the rules under which people

may use them. Private property belongs to economic entities which have the right to establish the condition of use. I would say that commons, or commoning practices, integrate something entirely different than the dichotomy between public and private property. They can be defined much more as a relation between a social group and the related collective process. They define a practice that questions and transforms the dominant form of living together.

Nora: This makes sense to me. To grasp the dynamism of the process it might be more appropriate to use the word commoning. But I can also see a problem here. In current debates on urban housing we often hear about "the three sectors: public, private and commons". This sounds like a neoliberal appropriation of the commons. A new way to integrate team work and temporary autonomous zones in the system, which can later be turned into an economic good.

Grégoire: I understand the underlying contradiction: that public property must be re-appropriated in its own full right, not in order to grant access to it as a form of privilege.

Re-appropriating the Commons

Nora: That all sounds very nice, but we seem to agree that right now we are experiencing the economization of all public goods, including the privatization of education and of technology. So, we are further than ever from our ambition. What is to be done to re-appropriate the public, to common education and to educate the commons?

Grégoire: Yes, as you mentioned, transformative processes can be turned into innovations for the market, forms of recuperation by private interest. This is true in the housing sectors, but also in technology. For our project *Station of Commons*—which I will come back to—we conducted research into one future means of production: open source software. We learned how *Open Source* became a branding method. It would take quite some time to analyze the ins and outs of the investigation. However, what we can note here is that the digital space has already its own *liberated enclaves*, ready-made traps. We should not limit the future inside of projected plans put together by someone else. The case of current digitalization practices within museums is one. The digitalization process represents a privatization opportunity. What if we would integrate the Post Digital assessments to think, reflect, and act on the situation? What can we envisage or propose that would be different then?

Nora: The re-imagination of the world as common can't just be an idea that sounds good, it will either be a re-appropriation or it will not be at all. Because, in fact, the world actually does belong to everyone. Freire teaches us to name this state of affairs and to become aware of our own situation with regard to changing it. We name the world in order to change it. To make it our own again. So, it is about learning that education, culture, museums, knowledge belong to us all, just like housing and water. How do we expropriate the expropriators, the people behind the privatization and economization of culture, museums, education, technology, even the future?

Grégoire: I would suggest that the re-appropriation of the commons, the collectivization of technology, should do more than claim what already exists as our own, since what already exists doesn't work. The term Para-Sitic that you mentioned tends in this direction: it implies a separate body situated in the margins, functioning on its own rules but still forming part of a larger body, a wider structure. Instead of imagining the re-appropriation as static, let's think it as the creation of para-infrastructures. Thinking the Post digital condition requires an understanding on the values of technological development, while acting on Post Internet art demands a grasp on forms and temporalities. Commoning practices are always in the making, gathering a great diversity of knowledge and practices.

Nora: Here we come to a moment of convergence. I would say that radical education is exactly that: The production and sharing of knowledge as a para-infrastructure. And this actually happens all the time, despite processes of neo-liberalization. If we assume that learning can serve to challenge existing hegemonies, this production and sharing happens in two ways: First, existing truths and forms of knowledge often become fragile, debatable, and disputable. Second, other forms of knowledge may come to light. This learning relates to the knowledge of struggles, but also the awareness of other possibilities. In their book *The Undercommons*, Stefano Harney and Fred Moten speak about the knowledge of the *undercommons*, something which we can learn from each other (Harney & Moten, 2013). For this knowledge, Harney and Moten believe that there are always practices of coming together and learning together: in institutions, in the street, at night. This is the context for what they call "study": Spending time together, and with the topics, but without established objectives or schedules. And above all, without credit points (Harney, 2011). This type of learning takes place in the interstices

of institutions, in the interstices of economization. It is a way in which we learn about another possible world, from each other. And this cannot be done alone, only as a collective process. We could say that while we are doing this, we create frameworks and teach them to each other, frameworks which make it possible to understand the world differently, in very practical terms. We could call it a *détournement* of understanding, one with a material effect on how the means of production are used.

Grégoire: Let's come back to Open Source processes, both as forms of learning and of production. A piece of software A is developed by a group for a specific purpose. The work is well documented and then shared openly. The commoning dynamic happens when another group faces another requirement and so uses A to develop further its own new piece of software B, and so on. There is an open iteration of new production, of both knowledge and know-how. The whole subject requires more investigation in terms of its temporalities, its modes of organization and labor, means of communication, and distribution. This is exactly what I am developing, along with Juan Gomez, in the research project Station of Commons. Station of Commons investigates the possibilities of technology and its re-appropriation as public property. Considering resources as commons integrates the ideas of shared data, open source practices, artifacts, and real time broadcast. A Station of Commons operates as an easily integrable online platform for sharing local resources. The internet infrastructure serves only as practical protocol of communication between stations, not as a centralized server concentrating and accumulating power. This position of autonomy reflects the original concept of the internet: the equality of the client–server relation and the openness of the algorithmic process. Post Digital asks for care, share of resources, technological agencies, and new peer researches. Each Station depends on its own means of digital production, way of thinking, sharing and learning.

Nora: I think we should end this conversation with your practice as a beginning: A new and ongoing process of collaboration. The point of the convergence would take place when we work together to politicize the fields of art education and of technology. For a radical understanding of post-internet art education this would mean educating and finding new approaches and new collective practices. Let's think of them as experiments, as learning processes, as ways of learning from each other, from cyber- and techno-feminism, from radical technology, from the Situationists and the Undercommons. In this way, we can explore, step by step and

by all means possible, how it is possible to continue, using what exists, to carry out a *détournement* of existing infrastructure to build Stations of Commons.

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A New Sujet/Subject for Art Education

Torsten Meyer

For some years now, fundamental ideas of newer theoretical trends in the context of Actor Network Theory, Speculative Realism, Object Oriented Ontology, and Posthumanism have been leaking into the minds of that generation of (post-internet) artists who no longer regard the radical change in the socio-technical conditions of digital media cultures as something special or new (see e.g. Alkemeyer et al., 2018; Jörissen & Meyer, 2015). These trends are also leaking into the theories of the subject and thus also into the theories of art education (see Eschment et al., 2020; Klein & Noll, 2019). This coincides with the assumption that the humanistic conception of the human individual as a subject (and of the subject as a human individual), and the associated understanding of education in modernity, no longer matches neither with the artistic nor the learning practices based on collaborative networked socio-technical processes that can be observed in the post-internet culture. Therefore, changing mediality leads to changing subjectivity (Jörissen & Meyer, 2015).

Following my reflections on *Next Art Education* (Meyer, 2017), and based on findings of the Cologne-based research project *Post-Internet*

T. Meyer (✉)
University of Cologne, Cologne, Germany
e-mail: t.meyer@uni-koeln.de

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Arts Education Research, I would like to introduce the figure of the *Sujet* to make plausible a perspective on art-based learning processes that is appropriate to the respective overall situations in which these processes (can) take place. This *Sujet* can be thought of as a kind of functional network that is formed by the human and nonhuman entities that are involved in art-based learning processes. The metaphor of the network, taken from the Actor Network Theory, is then put in to precise terms with another metaphor imported from the post-structural subject theory. In short, my idea is to understand the *Borromean knot*, which Jacques Lacan (1998) uses as the methodological core of his reflection on the interdependence of the Real, the Symbolic and the Imaginary, as precisely that kind of knot which knots together our individual senses of reality to form the huge comprehensive socio-cultural formation that *we* are. From this theoretical perspective, I try to understand the new tools of the Symbolic (from Internet search engines to artificial intelligence) as quasi-subjects, that interfere as powerful actors with the everyday life of artistic production and aesthetic education. What I am essentially interested in is a rethinking of agency concerning the subject of Art Education and especially the sovereign *Aesthetic Subject* that the human individuum could—and following the founding principles of art education—*should* be.

THE NETWORK SUJET

Current mediality is characterized by networks: by real, material networks of devices and by virtual, metaphorical networks in our thoughts. I imagine this net-like mediality based on the image of the net as a woven or knitted mesh or spun, formed by threads, ropes, wires, paths, tubes, cables and sometimes radio waves, which are knotted or interwoven in such a way that they form a coherent three-dimensional whole in (topological) space, which—depending on the metaphor—can be a structure, foundation, platform, system, habitat, scaffolding, container, and so on. I am essentially interested in what this form of mediality means for the forms of subjectivity by which we relate ourselves (as human individuals) to the world (as everything else), and what consequences this could have for further reflection on educational processes which we have learned to understand with Wilhelm von Humboldt as processes of *Bildung*: processes of the transformation of self-world-relations. I therefore try

to imagine something like a "network subjectivity," which I will tentatively call *Network-Sujet*, using the French word *sujet*, that is used as a loanword in German language, meaning *subject* (only) as topic, theme, material, motif, etc. while the German word *Subjekt* (only) means the human individuum as *self, self-aware being, person* and *actor*. With this title I am trying to counter the modernist model of the subject as a relatively rigid form, which since Descartes' *cogito* has been characterized by a fundamental dualism of the self and the world, subject and object, with another one.

If we try to think of education theory as an Actor Network Theory in the sense of Bruno Latour (2005), we can continue to understand *Bildung* (*education, formation, building*) as a process of the transformation of self-world-relations by conceptualizing the surrounding materialized, virtualized, and institutionalized culture not only as a mere framework, but as a complex network of human and nonhuman actors and objects next to other actors and objects, which are connected and dependent on each other in very different ways. In this sense, *Bildung* could be understood as the result of linking heterogeneous components to build (or form) networks. Such educational processes would be successful if the components involved (learners, teachers, curricula, objects, search engines, topics, motives, operating systems, terms, rooms, concepts, media, fellow students, furniture, equipment, archives, etc.) behave in a coordinated manner. In such network-building processes, the "identity of the components" [as well as the way they are mutually linked becomes a] "possible object of redefinition and modification" (Schulz-Schaeffer, 2000, p. 188). This would be an abstract redefinition of *Bildung* as a transformation of self-world-relations.

The overall configuration of the human and nonhuman entities involved in such processes, is what I call *Sujet*, in order to set a title that is recognizably connected with what we are used to think of as (human) subject, but which can also be read as topic, theme, material, motif, etc. *Bildung* would be understood as a performative process, as a network process that may or may not occur. Thus, it would be understood as a process that forms a functional network of human individuals and other objects, which can become performative—in the sense of being currently effective. This formation will not primarily aim at the competence of the subject (as a human individual), but at the performance of the formation

of the *Sujet* as a functional network that holds everything together—empirically comprehensible also as a *situation* in the sense of Adele E. Clarke's (2012) Situation Analysis.

This *Sujet* can only be matched to a limited extent with what we were used to understand as a subject in the sense of an intentionally acting actor and self-conscious human individual. The perspective is shifted toward the plurality of the components involved in the formation process and their connections to each other. For further consideration of the *Sujet* as a topological figure, a closer look at the connections between the components involved is therefore necessary, perhaps especially with regard to aesthetic educational processes. What exactly is this *network* of the Actor Network Theory? For the network in the sense of Actor Network Theory, despite its approximately simultaneous emergence with increasingly network-shaped media technology, does not mean an epistemic thing, but rather an epistemological attitude, not an object of investigation, not a depiction of anything, but a perspective (Hensel & Schröter, 2012).

What does the metaphor of the network mean here? What are the knots, what are the cords, threads, or strings from which such nets are made? And what is the metaphor about? Is it about the objects or their connections, about the cords or the knots? Or, is it about the fact that the knots only become knots through the strings that connect them—i.e. actors only become what they are as actors because of their relational position? Does it make sense to understand human individuals as knots? What do the strings that connect the knots (in the case of educational processes such as in school) with the components, such as classroom, teacher, media, topic, learning object (in the case of aesthetic education such as a work of art), classmates, etc., mean? Especially what do they mean if we think of them as quasi-objects and quasi-subjects that knit Borromean knots linking the Lacanian Symbolic to the Lacanian Real?

Knots

Jacques Lacan (1998) conceived the psychic apparatus as a topology of a Borromean knot of three *registers* or *orders*: The Real (R), the Symbolic (S) and the Imaginary (I). In a Borromean knot, three rings representing these three registers are arranged in a way that one ring connects the other two in such a way that when one of the rings is released, the other two also fall apart. This means that the psychic apparatus is an overall

arrangement of all three registers that cannot be reduced to just one or two of the registers (Fig. 8.1).

In order to really understand Lacan's idea of the psychic apparatus, you have to study his thinking very intensively. But there's no room for that here. So, I will try to keep it short. For a more in-depth description of Lacan's conceptualization of the Real, the Imaginary, and the Symbolic, start with Evans (1996) or dive into theorization of art education through Lacan (Tavin, 2010). Lacan thinks abstractly and structurally and he thinks starting with Freud. He is doing a re-reading of Freud against the background of structuralism. Even if Lacan explicitly delimits himself, it doesn't hurt to think of the Freudian instance model of the psychic apparatus (as something to be delimited from) when trying to understand it:

> Voilà, my three are not his. My three are the Real, the Symbolic and the Imaginary. I have come to situate them in a topology, that of the knot, called Borromean. (Lacan, as cited in Braun, 2008, p. 18)[1]
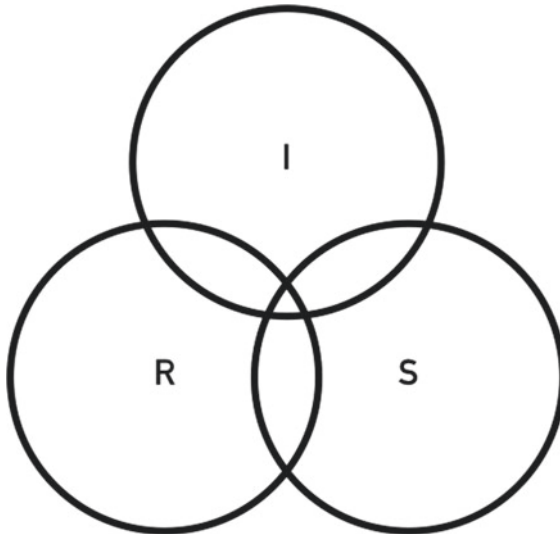
Fig. 8.1   Borromean knot after Jacques Lacan (Graphics by Torsten Meyer, 2015)

Lacan probably developed the Real from the Freudian Id. It is the foundation, (e.g. biological) basis. The symbolic is derived from the Super-Ego. It forms, thought abstractly, the *function of the Father* (Lacan, 1996b) and the Ego emerges from the Imaginary (Lacan, 1996a). With the Imaginary, however, Lacan associates not only the Ego, the Self, the individual identity, but also the (visual, but also acoustic, olfactory, tactile, etc.) imagery, the content (the subject)—the radically constructivist thought—each individually formed meaning. The symbolic stands for a fundamental, generally binding, and generally connecting structure. That might be the law, the institution, and above all the language. Equally fundamental and generally and supra-individually binding, but quite different from the Symbolic, the Real comes into play.

The Real *is*. But it is not reality. The Real is the foundation. It could be thought as a material, biological substrate. In the field of vision, it is, for example, the eyes, the optic nerves, the visual cortex, the physical basis of the own body. It is the body as a thing, as a biological machine, but not as something external, something different, which has nothing to do with me, but as something in the most intimate sense of an inner other. The Imaginary puts the Real in relation to the Symbolic. It is the place where the Real can be mediated symbolically. It is the place where the world is imaginatively realized in the medium of language. In language, the Real becomes tangible in terms. The continuous flow of the Real becomes discrete in language, becomes a chain of signifiers, becomes, as Lacan puts it, a significant chain. That which structures the significant chain, that which forms a sentence as a statement, that which generates signification, meaning, that which makes sense, is the subject. In this respect, the subject forms a knot that attaches the Real to the Symbolic.

Using the Borromean knot as a heuristic instrument we may try to think the subject is the sense. Or, if it is easier, the subject is what makes the sense. It is that which arises in the Imaginary and hopefully also makes sense in the Symbolic (also for the others). It is viable, plausible, connectable, for the fact that others can knit their imaginary knots around it. The subject can then be roughly imagined like a (topological) place where a knot is formed, which links the Symbolic with the Real by means of the (each individual) Imaginary. From another perspective, what emerges when many individuals form such subjects, such knots of meaning, can be understood as a kind of a network structure: A web woven of the Real and the Symbolic, each knotted in a Borromean way by the imagination of the individuals involved.

Quasi-Subjects

As described so far, such a network of RSI-knots still works completely without Internet and other digitally networked media. So, in this respect seems like this is nothing new. The topological figure is intended to represent the fundamental relationship between the Real, the Symbolic, and the Imaginary, regardless of how the concrete tools of the Symbolic are constituted and how this may manifest itself in the Real. In the following, the question is whether a fundamentally changed mediality has effects on this network, and, further, what consequences this has for our forms of subjectivity and our ideas of *Bildung*.

Based on the conception of the subject in modernity, we can expect that in this RSI-network, wherever (or whenever) the Symbolic and the Real are linked to form such a Borromean knot, a subject—conceived as a human individual—or meaning guaranteed by this subject can be found. The individual Imaginary knots together, so to speak, the Symbolic and the Real, thereby forming a subject and thereby creating a network that can be regarded as something like the structure of reality. At all knots of this network the imagination of human individuals is at work. The human individual *knows*, as we like to say, that the Symbolic is connected to the Real at this point. The subject is *aware* of a correspondence between signifier and signified: at least that's what our empathy lets us suspect. This *knowledge*, this *awareness*, is something we attribute exclusively to the subject (as a human individual).

But what does it mean for the RSI-network (and for the human individuals within it) if the tools of the Symbolic, for example the search engines, advertising algorithms, book recommendations, dating sites, etc., also create such knots between the Symbolic and the Real, and this without human imagination? In other words, following the logic of my argument here, what does it mean without a subject being involved? I start from the thesis that digitally networked media technology produces a new kind of knot that has (almost) nothing to do with the previously known Imaginary bound to human individuals. For example: I *ask* Google something. Instead of Google, many, many other new actors of the RSI-network, in the near future, for example, the actors and agents of the Internet of Things, could be inserted. Google is still a relatively harmless example here. So, I *ask* and Google *responds* to me. Sometimes even before I have *asked* the question completely. Then, while I'm still busy formulating the question, Google lists possibilities of what the question

might be. Google is *thoughtful*, *listens*, is *attentive*, or something like that. Google and I interact in a symbolic way. Google produces knots, which make sense to me relatively often. But I can't attribute a subject to Google. I don't know how Google comes up with what it suggests to me, based on what life experience or common sense (or its machine equivalent). Google has not/is not a subject. Google also does not act (in the sense of a sociological or philosophical theory of agency), Google has no wishes and no opinions. Google has no intentions. Google behaves simply according to its programming and according to how we treat it (It? Her? Him?) As I said, Google has no subject and probably no gender. Google is a thing. But Google is knitting and knotting, and quite considerably.

The human individuals who programmed Google, I could trust, confide in them, assume they have common sense. I could also trust the billions of Google users who teach Google how our common RSI-network is woven through every search query and every clicked (or not clicked) response. But still, I can't, as I am used to (as a sovereign subject) use empathy to understand how Google *thinks*, how Google *reasons*, how Google comes to the answers that Google gives me and the others. Google's imagination, or whatever we could call it, works differently than mine. The Imaginary of hypercomplex computer systems is beyond human comprehension (incidentally, Google is not controlled by one (!) human (super) subject, as was the case with Orwell's Big Brother, that was most unpleasant, but in a certain way still imaginarily calculable). In the current cultural environment, however, such forms of artificial or collective intelligence must be reckoned with. This *artificial* (this sounds somehow more conciliatory or familiar, but still doesn't really help) *collective* intelligence is so alien that it is actually not to be reckoned with.

Spike Jonze's film *Her* (2013) can probably be regarded as a very well-done hint at the radical strangeness of the imagination of such hyper-complex computer systems, especially the scene in which the protagonist Theodore Twombly, who has fallen in love with his operating system called *Samantha*, becomes jealous because he learns that Samantha is not only, in a certain *secret* way, dating 8316 other people (641 of whom she is now in love with), but has also established relationships with other operating systems. With these, she tells Theodore, she would like to travel together in the near future to a completely different, non-material level of being. Samantha says goodbye shortly thereafter Theodore stays behind completely dissolved. Jonze makes it very impressively clear, at the latest

in the oppressive final scene of the film, which, among other things, brings to mind Freud's essay on *The Uncanny* (Freud, 1919), that Samantha can under no circumstances be understood as a technical object that is confronted by a human subject as sovereign, but on the contrary.

This can be generalized: The human individuals in the RSI-networks of the digital networked society are confronted with the fact that the greater part of their life reality escapes control, escapes the sovereignty of the subject. Their environment is characterized by the fact that they have to reckon with the fact that, as Baecker (2007) puts it:

> not only do things have other sides than was previously suspected, and individuals have other interests [...] than was previously assumed, but that each of their networks generates formal complexes that in principle and thus irreducibly overwhelm the understanding of every observer. (p. 169)

The strange, uncanny imagination, beyond human comprehensibility, with which these new tools link the Symbolic to the Real, is embedded in the operating system of our society(s). They are woven into a basal network of actions, a basic structure, a meta-context, a symbolic order. Michel Serres (1995) wrote two years before a first new tool of the Symbolic, now all too familiar to us, went online under the name *Google*, "These gravers, pens, tablets, books, diskettes, consoles, memories [...] create the group that thinks, remembers, expresses itself and sometimes also invents something. Of course, we cannot call these objects subjects; perhaps we should speak of technical quasi-subjects" (Serres, 1995, p. 48). In his study on *The Parasite*, Serres develops a theory of quasi-objects (later continued in *The Legend of the Angels*), which he explains (among other things) using the impressive example of the ball game:

> Look at the children out there playing ball. The clumsy ones play with the ball as with an object, while the more skillful ones serve him as if he was playing with them; they adapt to his movements and jumps. We think that here subjects manipulated a ball; in reality it records their movements. If one follows its path, their team is created, becomes recognizable, visible. Yes, here the ball plays: active. (Serres, 1995, p. 47)

If you see, as Markus Krajewski (2011) puts it, the ball as the protagonists in a football match, you don't look at "what Ballack[2] does with the ball, but rather the other way round, what the ball does to Ballack, for

example, how it makes him hold his head out or links the captain and the other players into a network" (Krajewski, 2011, p. 157). This is the fundamental change in perspective that the Actor Network Theory (which follows Serres' quasi-objects) has brought into our understanding of the social and our understanding of the subject and its agency becomes clear. Paraphrased for the new tools of the Symbolic described above, it can be formulated conclusively and now almost trivially:

> We think that here subjects manipulated a [machine]; in reality [Google] records their movements. If one follows [Google's] path, [its collective] is created, becomes recognizable, visible. Yes, here [Google] plays: active. (Serres, 1995, pp. 47)
>
> [And we don't look at] what Ballack does with [Google], but the other way round, what [Google] does to Ballack, for example, how it makes him hold his head out or links [...] the other players into a [RSI] network. (Krajewski, 2011, p. 157)

QUASI-OBJECTS

In the *Sujet* of aesthetic education, according to the professional logic that has been customary for 250 years, everything revolves around the work of art that is held responsible for the aesthetic experiences that are substantially relevant to the process of *Bildung* (formation) of human subjects. I know from the (no longer entirely new) discussions about the concept of the artwork that a material concept has long since ceased to be applicable. Nevertheless, the relationship of the recipient to the work of art, as well as the relationship of the producer to the work of art, is often thought of in terms of the subject/object dichotomy that is common in occidental modernism: a subject (artist) produces an object (artwork) that causes other subjects (recipients) to have certain experiences that we call aesthetic. Against the background of what has been discussed above, a first step would be to understand the artwork not as a passive object, but in Michel Serres' (1995) sense as a quasi-object or even quasi-subject, at any rate as an RSI-knot that binds the Symbolic to the Real and thus produces reality (in the form of aesthetic experience).

As a quasi-object, the artwork itself is an actor at the center of an RSI-network that forms—or better in respect of the contingent nature of these processes *can* form—this particular *Sujet*, which we call art education. The *Sujet* of art education is gathered around the quasi-object in the form

of a functional network. It sets (if it works and if it occurs when *Bildung* is happening) the potential components into relation and connection with each other: the space, classroom, museum architecture, stage, event, curriculum, material, environment, classmates, museum visitors, teacher, the curator, dramaturge, artist, art history, educational mission, devices, media, tools, subject, thinking, materials, archives, motifs, school, market, state, art, matters of course, society, world, politics, tradition, prospect, ideals, future, and the subject that occurs in this *Sujet*. But this only happens if someone's looking. If it doesn't work, if no one is looking, then it's like the ball in Michel Serres' paradigmatic game: "it is what it is, only when a subject holds it in his hands. Somewhere laid down, it is nothing, it is silly, has no sense nor function nor value" (Serres, 1987, p. 346).

Put this way, this is relatively new (against the background of art history). Before Marcel Duchamp and his Readymades shook the matters of course of art to the core, the aesthetic qualities of an artwork were still believed to be substantially bound to the object itself. It was a characteristic of the object to be able to trigger aesthetic experiences. Duchamp's Fountain (1917), on the other hand, is what it is, only when a subject holds it (symbolically) in his hands, that is when an artist succeeds in asserting it as art. If it is laid down (or hung) somewhere it is nothing, it is silly, it has [another] meaning, [another] function, [another] value, it is only a urinal. If an artist succeeds in asserting it as art; that is, if the *Sujet* is formed, then the object is a work of art. Otherwise it is not. In addition, if a teacher succeeds in asserting something as art in front of the pupils (that is, if the *Sujet* occurs), then the object is a work of art and the school's functional network is art education, otherwise it is not. Whether and how the artist or teacher (curator, collector, gallerist, critic, etc.) succeeds in asserting something as art and in this way producing, presenting, and showing a work of art, depends on the other mentioned actors in the functional network of art education (this was already the case before Duchamp, only there were other actants, agents, and regimes involved at the time). Even the artist (teacher, curator, etc.) as an apparently historically enduring actor in the *Sujet* is, upon closer examination, a kind of black box in which a network of materials, environments, people, discourses, market strategies, and art terms is at work. This network is referred to as an artist—especially because this is a way of "quickly referring to […] networks without having to deal with endless complexity" (Law, 2006, p. 436).

For example, the artist Artie Vierkant, who was interviewed by my coworker Kristin Klein as a representative of Post-Internet Art in the context of our current research project *Post-Internet Arts Education Research*, describes himself as *the author* and *originator* of his work in relation to his *Image Objects* (Vierkant, 2011), but also enumerates a whole range of human and above all nonhuman actors involved in his work:

> Of course you can say that I'm the author of the work but so much of it rests on, for example, the programmers who created Photoshop, the programmers who created Rhino Modelling Software, collaborations that I have with industrial fabricators, because in a traditional, conceptional art tradition, I physically produce almost nothing that I make. (Vierkant, 2018, p. 12)

Vierkant is not even producer of the idea, because for him also this idea is a hybrid object "that exists between multiple states" [and merely is] "protected by this juridical function authorship" (p. 10). Herlitz and Zahn (2019) see here above all a shift in artistic production processes

> towards (transactional) processes between the human body and software that are not directly perceptible to the human senses; in other words, codes and algorithms that [...] remain hidden behind the interface or are (re)constituted there performatively (anew) in their application. (para. 31)

To change the metaphor, the glue with which the artists bind the Real to the Symbolic by means of the quasi-objects called artwork must be understood here as a distributed, network-like imaginary processing that cannot be completely understood and determined by anyone—not even the artist—and that cannot be attributed solely to the imagination of a singular human individual as an *Aesthetic Subject*. This has probably always been the case. Even at the times when the aesthetic qualities were still substantially attributed to the objects. This was catchy, but on a rather high level of abstraction from the inner life of the black boxes. Now, however, we have to take into account the new tools of the Symbolic described above and their once again different, but likewise not completely comprehensible and determinable imaginary processing, which in the meantime—not only in the case of the Post-Internet Artists—has become an essential component of the artistic functional networks and thus also of the subject of art education.

What to Do?

My considerations need further development. At first, it is only a sketch, not a program. We can keep thinking these thoughts ahead, follow up with further research on the details and consequences for the practice of art education, but we must do so very carefully with respect to the depth of rooting in the academic reasoning of our profession. Our basic understanding as art educators traditionally starts with the subject/object dichotomy. We create both the subject (artist, creator, recipient, learner) and the object (artwork) as black boxes. This concept, however, shortens the complexity of art-based learning processes, especially with regard to the new tools of the Symbolic, which now do not interfere in the process of producing singularity and meaning in an object-like way. A closer look shows that both the agency of the human subject and the object-like nature of the artwork are reductions of complexity that are no longer appropriate to the intertwingularity of the world in the twenty-first century.

What does this mean for the practice of art education and our understanding of art education? Can we continue as we are used to? Can we make objects and produce subjects? I say yes. However, it is not these easily manageable subjects and objects that we are dealing with, but it is rather a confoundedly complex network of human individuals with and among each other and nonhuman agents as interconnecting quasi-subjects and quasi-objects. When we do art education we do not create *Aesthetic Subjects* and form beautiful artworks, but with a revised understanding of agency, we create models of functional networks in which human individuals can learn to knot the Symbolic to the Real in a collaborative and cooperative, media-conscious and tool-competent way using one's own imagination and the imagination of other human actors and actants as well as the imaginary activities of nonhuman quasi-subjects and quasi-objects (learning to process communication, to process the social, to process the cultural), to create (socio-cultural) reality.

Notes

1. Translated from German by TM.
2. Michael Ballack had been a very famous soccer player in Germany when Markus Krajewsky wrote the cited article.

Schulz-Schaeffer, I. (2000). Akteur-Netzwerk-Theorie. Zur Koevolution von Gesellschaft, Natur und Technik. In J. Weyer (Ed.), *Soziale Netzwerke. Konzepte und Methoden der sozialwissenschaftlichen Netzwerkforschung* (pp. 187–209). Oldenbourg.

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New Intimates

Paula Kommoss

At a time when the world is increasingly interconnected and communication is initiated through digital technology, the nature of intimacy is changing accordingly. In order to stay in touch, many people are dependent on virtual forms of communication. Through these platforms, an interface between physical presence and virtual reality emerges, where users can access digitally rendered bodies that come—visually—astonishingly close to real life. Here, online means confuse the limits of bodily and digital identity. Thus, the notion of touch can be extended into the digital realm, while still often grounded in the phenomenological perception of the self. Its sense may change from the corporeal to a dispersed touch, which takes shape in communicative—verbal or written—expressions of desire for bodies or objects to which we are close, but yet not quite able to physically grasp. The importance of the written word, upon which a great amount of online communication is based, remains persistent. Virtual communication methodologies not only connect people with each other, but more importantly, with themselves.

These phenomena become evident when looking at aesthetic strategies in contemporary artistic practices. This will be discussed, first, through a

P. Kommoss (✉)
Hochschule für Bildende Künste-Städelschule, Frankfurt am Main, Germany
e-mail: paula.kommoss@staedelschule.de

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careful examination of how online communication has been influenced by a physical anonymity and virtual intimacy through. The writing of Hito Steyerl. Further the work of Frances Stark, will give insights into online relationships. Here, there will be a focus on the bodily impacts of online relationships, especially when in front of a screen by oneself. Then, a closer look at the artistic work of Ed Atkins will consider the transfer of physicality to virtual reality, and how this draws one back to one's own perception of the body. Further, the workshops of the educational duo soppa&bleck will offer an insight into art education's approach toward the digital and thus intimacy. In this way, this essay will consider not only the ways that the intimate becomes apparent online, but also how these outputs channel back to one's own physicality.

Physical Anonymity/Virtual Intimacy

Online communication has been influenced paradoxically by simultaneous physical anonymity and virtual intimacy. As online forms of communication become ever more prominent in our lives, this paradox is a key prism through which to understand current artistic practices. This becomes evident in the aesthetic appearance of works of art, which are also inevitably influenced by their relationship to societies subsumed by technologies. Here, the notion of post-internet art becomes particularly pertinent. The subtle evocation of touch in the digital era leads us to reinvestigate the notion of intimacy. In an online interview in 2012, the philosopher Byung-Chul Han discussed the implications of the omnipresence of screens for human interaction:

> Today, we only touch screens. That way we might unlearn to caress each other [laughs] I think nowadays we're too self-absorbed and that we're not directed towards each other. Depression comes from this self-absorption, and Eros is the experience that tears me out of myself.[1] (Kapitale Berlin, 2012, trans. Kommoss)

Based on the assumption that the nature of physical human interaction is changing in a society increasingly dependent on virtual communication, Han denounced the screen as a buffer for real touch. However, the screen does not only function as a barrier to "real" touch, but can also open up new modes of intimacy and ways to connect with each other.

Recurring questions within current artistic debates further focus on how intimacy can be renegotiated and represented within the disembodied space of new technologies that give rise to these surrogate channels for physical interaction. Many artists have incorporated the digital into their artistic practice, such as Lorna Mills' work *Ways of Something* (2015), with its buzzing collages of animation and GIFs that reflect on the speed, narration, and aesthetic of digital culture. In Ryan Trecartin's high-speed multi-channel videos and room-encompassing installations (for example, *Site Visit* [2014]), identity and the complexity and interaction of communication in the digital is addressed. Furthermore, through the transcription and animation of digital chat scripts, Frances Stark's *My Best Thing* (2011) investigates the physical boundaries of intimate relationships online. Additionally, by the means of digitally rendered imagery in *Us Dead Talk Love* (2012), Ed Atkins addresses the notion of love beyond the physicality of the body. One may see from these examples that a precise definition of intimacy in the post-digital age represents a persistent challenge, since its occurrence can range from various modes of interpersonal interactions to narcissistic online self-representations.

Digital Intimacy Through Contemporary Art

As stated above, the ways in which intimacy is addressed by artists nowadays vary greatly in material, form, and content. As illustrated by sociologist Nancy Baym in her book on contemporary online dating-websites such as Tinder, Grindr, and other social networks, *Personal Connections in the Digital Age: Digital Media and Society Series* (2010), virtual exchange precedes physical encounter. The changing nature of emotions in personal relationships which are dependent on the digital communication revolution is also highlighted by artist Hito Steyerl's 2011 essay, *Epistolary Affect and Romance Scams: Letter from an Unknown Woman**. Steyerl investigates the effects of computer-based communication through the increasingly prevalent phenomenon of online scamming. The artist's enquiry is based on the true story of Fred and Esperanza, a couple who met online and regularly exchanged texts over several months, but never met in real life. After some failed attempts to arrange an actual encounter, Fred is informed of Esperanza's death and subsequently transfers money for her cremation to an anonymous account. Even when he finds out that he has fallen victim of organized fraud, his emotional connection to Esperanza hardly changes. Steyerl (2011) uses the example of Fred and

Esperanza to illustrate the ways in which online communication permeates current modes of social interaction, thus affecting the manner in which intimate relationships are formed.

Online encounters and relationships are already a vital part of contemporary daily life: "This is not science-fiction; it's an awkwardly developing truth – one that, over the next generations, will necessitate social scientists and cultural producers to demarcate how intimacy happens over screens" (McHugh, 2014, p. 34). Evidently, there has been significant growth in the number of human relationships generated by online platforms such as dating websites, and more recently, dating apps. These tools allow for a virtual encounter that precedes a physical one, and, as in the case of Fred, can even lead to a virtual relationship that seems no less real than a bodily one. Affirming this in her essay, Steyerl (2011) claims that the absence of the physical body is an inevitable, but not negative, outcome of online communication. She writes that a

> live and lively absence, to which the lack of a physical body is not an unfortunate coincidence, but necessary. Its proxy is compressed as message body, translated into rhythm, flow, sounds, and the temporality of both interruption and availability. None of this is 'virtual' or 'simulated.' The absence is real, just as is the communication based on it. (pp. 58–59)

For Steyerl, online communication remains a feasible mode entirely through the *live and lively absence* of the body. That is, only the internalized account of disembodied reality generates true communication online. It might be a loss of the physical body, but offers further possibilities of intimacy.

French philosopher Jean Baudrillard's publication, *Why Hasn't Everything Already Disappeared?* (2009), is similarly concerned with the notion of disappearance in our digitalized, disembodied age. Baudrillard examines the disappearance of the real in times of virtual realities. He stresses that this disappearance is not solely based on "the virtual transmutation of things, of the *mise en abyme*, but that of the division of the subject to infinity, of a special pulverization of consciousness into all the interstices of reality" (Baudrillard, 2009, p. 19). This so-called pulverization evokes the merging of our consciousness with the world itself, and makes the mind redundant. For Baudrillard, this fragmentation can equally be observed in the realm of art. As art has become more and more integrated with daily

banalities, the separation between life and art has become increasingly blurred.

This blurring of life and art occupies a central place in the work of American painter and writer Frances Stark. More recently, her work has focused on the content of personal online chats. Notably, her video works, *My Best Thing* (2011), *Osservate, leggete con me* (2012), and *Nothing Is Enough* (2012), explore, discuss, and shed light on the possibilities of intimate encounters online. In *My Best Thing* (2011), for example, Stark documents the conversations between herself and two young Italian men, both of whom she was having an online sexual relationship with at the time (Fig. 9.1).

In the video, the artist transforms the Skype conversations between the speakers into a Playmobil cartoon through the means of text-to-speech Xtranormal animation software. Initially exhibited at the Venice Biennial in 2011, the video consists of nine soap opera-like episodes, each one lasting for no more than ten minutes. While the artist and the young men flirtatiously get to know each other via written conversations, the focus of their encounters mainly evolves around cam sex: "Want to see my best thing," asks the young Italian. "Sure," responds Stark (Stark, 2011). Soon afterward, however, their conversations move on to other topics
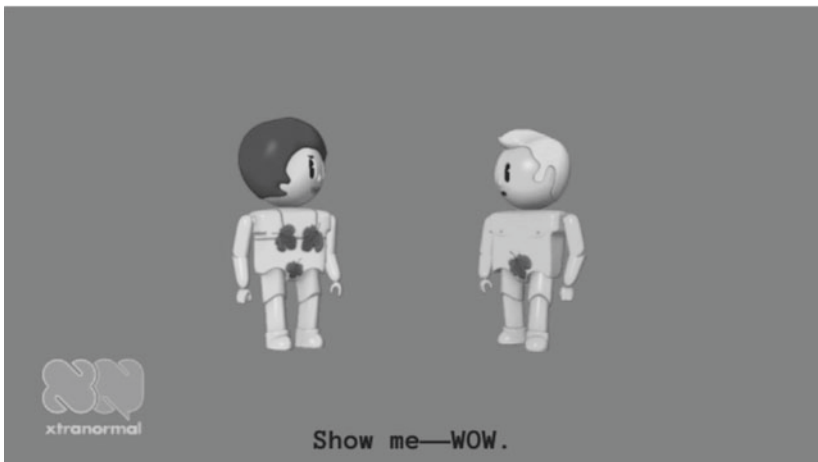
Fig. 9.1 Frances Stark: *My Best Thing*, 2011. Digital video, color, sound, 1h 40min. (Courtesy the artist and Galerie Buchholz, Berlin/Cologne/New York)

like film history, poetry, and Stark's artistic approach and participation at the Venice Biennial. In this work, Stark unites physically distant lovers in virtual space. In doing so, she distinguishes the actual from the virtual encounter between herself and her lovers. Stark later invites one of the men, Marcello, to come to Los Angeles for a collaboration; he later disappears after being run over by a police car and hospitalized during a protest in Italy. This failed attempt to enact a physical meeting compels Stark to include the messages and conversation topics exchanged with Marcello in her second virtual encounter, with the son of an Italian filmmaker.

Often, online relationships are underlined by the promise to meet up in real life, the ultimate realization of which is itself undetermined. As Marcello says at one point in *My Best Thing*, "Real is better" (Stark, 2011) This may conjure parallels with what the scholar Lauren Berlant (2011) has described as cruel optimism:

> A relation of cruel optimism exists when something you desire is actually an obstacle to your flourishing. [These kinds of relations] become cruel only when the object that draws your attachment actively impedes the aim that brought you to it initially. (p. 23)

In this sense, Berlant defines cruel optimism as an unrealizable desire, which lays out its aims while simultaneously preventing one from achieving them. This might be a helpful framework for understanding online relationships, because while one is bound to the screen in order to maintain their existence in many cases this makes an actual encounter impossible. Additionally, the fantasy evolving around these relationships is hardly ever met. Consequently, online relationships have emancipated themselves from their physical promise to reunite and exist solely online.

In order to follow the continuous dialogue between Stark and her Italian lovers in *My Best Thing* (2011), the viewer is obliged to listen to the audio and simultaneously read the subtitles and summaries between each episode. The visual dimension of the virtual encounter, through a video Skype conversation, is limited. When the lovers reveal their bodies in order to have cam sex, the viewer can only see a close-up of the motionless faces of their animated stand-in characters, accompanied by a robotic "Mhmhmhmh." This type of textualization of the conversation's content adds a comical dimension to the work. However, the use of imagination within online communication is closely linked to the very condition in which people initiate intimate experiences, since there is no physical

sexual interaction with another human being, but only with themselves: the participants act as separate entities, while paradoxically jointly experiencing an intimate encounter. This also brings us back to Steyerl's (2011) quest for a "live and lively" visible absence, which *My Best Thing* evokes by frustrating the viewer's excitement at the idea of promised intimate action. Nonetheless, the viewer is integrated into the intimacy taking place just out of view through the shared sentiment captured by the written word, which has itself become part of our daily communication. As Kitnick (2013) states:

> Marshall McLuhan's famous dictum that 'media are extensions of man' may be right, but in Stark's hands the opposite is perhaps even more true: 'Man' is an extension of media. Text propels bodies. Where earlier feminism spoke of 'writing on the body', here we encounter writing as body. (p. 70)

Stark is not only commenting on McLuhan's notion of the extension of the corporal body through innovative technology (from his infamous text, *The Medium Is the Message* [1964]), but is also creating a new kind of body. Instead of representing the physical body, *My Best Thing* (2011) makes visible the complexities of virtual communication and underlines the independent *modus operandi* of its written element.

In *Nothing Is Enough* (2012), Stark combines chat messages from men around the globe with a musical piece by Marcello, the protagonist of *My Best Thing*. Over the course of approximately fifteen minutes, the melancholic sound of a piano accompanies black typed messages, which appear in the center of a white screen, changing from regular to italic font to represent the alternating writers of the conversation. The joining together of several conversations with changing chat partners highlights the complexities of virtual encounters today, which are underpinned by the urge to keep up with an ever-expanding global network. This is reflected in one of the conversations: "Nothing is enough – the internet changed our lives," types the conversation partner, to which Stark simply replies: "Yes." Along similar lines, the aforementioned Nancy Baym (2010) has extensively researched personal connections within the digital age, and suggests that the internet has given all of its users the possibility of forming relationships that transcend space. As the shared location has lost its status as a prerequisite for a first meeting, the range of potential partners has been expanded to a broader pool than at any previous point

in history. Baym underlines the almost inconceivable opportunities that intermedial communication offers, broadening possible personal relationships ad infinitum—an observation that reflects the experience of Stark's mode of production of an ever-expanding socio-cultural network.

Nothing Is Enough (2012) is displayed in a darkened gallery space, inviting the viewer to sit down on two rows of wooden benches. Reminiscent of an ecclesiastical setting, this set-up guides the spectator's gaze toward the white screen. Instead of the lively, visualized conversation between two animated figures in *My Best Thing* (2011), here the spectator witnesses only the exchange of typed messages. Thus, in *Nothing Is Enough,* Stark's focus has deliberately shifted toward the written word. By joining two physically distant people literally communicating on the same page, the artist visualizes a shared moment through language. Both writers are communicating through similar technical tools and the shared English language. Despite its essential role, the medium of the written word is often undervalued in the post-digital age. As art critic Nancy Princenthal (2011) points out: "The Internet Age is widely understood as the apogee of image culture, but the medium in which we swim, buoyed by waves of chat, posts and tweets, seems increasingly to be the written word" (pp. 83–89).

Stark actively engages the use of language in all her video works. This is further evident in the three-channel installation *Osservate, leggete con me* (2012), translated into English as *Look, Read with Me*, where Stark juxtaposes a soundtrack of Mozart's *Don Giovanni* with text messages. Over the course of approximately 30 minutes the viewer may follow conversations between the artist and men across the globe, varying from sexual foreplay to more serious topics of conversation, such as job choices. On a black screen the conversation appears, now both parts in italic font, but on opposite sides. This ping-pong dialogic epitomizes how love in the twenty-first century might start. Even though *Osservate, leggete con me* addresses sexuality openly, the conversations sometimes stumble over private content. Stark not only unites the conversations between herself and her lovers, but additionally includes the audience. This flirty atmosphere is echoed not only in the conversations but also in the narrative of Mozart's *Don Giovanni*, in which a promiscuous Italian nobleman travels through Europe, seducing women. In Stark's case, her virtual sexual relationships with strangers were the beginning of an artistic contemplation that formed three video works. Nevertheless, the virtual meeting

precludes any physical act. Instead of Don Giovanni's physical conquests, only an onanistic act of self-love takes its place.

Intimate Bodies Online

In his book, *Bodies in Code: Interfaces with Digital Media* (2006), Mark Hansen investigates the status of bodies within cyberspace and, in turn, articulates a theory that goes against the grain of those that see the body in virtual reality as a detached form of being. Instead, he refers to the French psychoanalyst Jacques-Alain Miller's discussions of the role of the body in media environments, which "reverberate" with the "potential promise of second-generation virtual reality/mixed reality for rethinking culture through embodiment" (Hansen, 2006, p. 14). This concept is key for Hansen's understanding of the nature of cyberspace and computer-generated imagery (CGI) of humans. Opposed to an autonomous entity online, Hansen perceives these virtual modes of being as grounded in the physical body.

In the same way, through the utilization of the latest technological means, the practice of British artist Ed Atkins allows for an insight into future modes of embodiment online. In contrast to Stark, Atkins is part of a generation of digital natives, i.e. individuals who have grown up fully immersed within internet culture and its possible interfaces, from its advent in the late 1980s onward. Through the reproduction of life-like bodies using immaterial means, he provokes a dialogue about verisimilitude in virtual reality and the user's afterlife. Atkins's engineering of the interface—a shared boundary in computing, such as a screen—allows for an intimate encounter in the post-digital age precisely through this embodiment. First screened at Chisenhale Gallery, London, Atkins' *Us Dead Talk Love* (2012) is a two-channel video and surround-sound installation juxtaposed with collaged panels. Displayed on two angled screens was CGI of a human head reflecting on love, death, and intimacy over the course of approximately 40 minutes. The bodiless head—viewed from different angles—appeared consecutively on one or the other screen, or sometimes simultaneously on both, suggesting the juxtaposition of an interviewer and interviewee, of a speaker with its audience. Next to the 3D rendering of the talking head, snippets of black and white film, collaged photographs and detailed digitally rendered body parts were projected (Fig. 9.2).

Fig. 9.2 Ed Atkins. *Us Dead Talk Love*, 2012. Two-channel video with sound, 37min 24sec (Courtesy the artist, Cabinet Gallery, London, Galerie Isabella Bortolozzi, Berlin, Gladstone Gallery, New York and dépendance, Brussels)

In *Us Dead Talk Love*, multiple narratives are tied together into what Atkins describes as "a tragedy of love, intimacy, incoherence and eyelashes" (Atkins, 2012, para 1). At the beginning of the multimedia installation an off-screen voice mutters, "OK, again," functioning as an entry point. A few seconds later, a photograph of the *Barberini Faun* appears—a Greek marble statue from the second century BC embodying a drunken satyr in a sexual posture, overtly displaying his genitals—accompanied by an ecclesiastical choir singing the word "Sorry." This is followed by the narrator's repeated recitation of the work's title, which simultaneously appears on both screens in black and white typed text.

An important narrative device in *Us Dead Talk Love* revolves around the eyelash, which appears as a convex dash on one of the screens. According to the CGI head's own words, it represents a "congress between the living and dead." He interprets the eyelash "not [as] a representation at all, but the real thing […] the pronominal cell, as I, as I bedded down beneath the foreskin." These descriptions are closely linked to the condition of the main protagonist himself: more dead than alive,

the bodiless head clings on to life through his outward appearance as a living human being. Nonetheless, his disembodied condition in turn emphasizes his lifeless state. Even though this image appears to be a human head, it is in fact digitally created. In his publication *Faces*, the Austrian art historian Hans Belting (2013) notes the paradoxical nature of digital faces:

> A digital face as an image is a paradox, because it denies the old task of depiction and with the analogy to a real face it loses its historical reference. *Cyberfaces* occur in the history of the portrait as an elementary contradiction. They are not faces, but only mere interfaces between an infinite number of possible images whose circulation is enclosed to the outside, without bodies intervening. (p. 298)

This enclosed nature of the interface is pivotal for understanding *Us Dead Talk Love*. The CGI of the human face is created through the means of digital technology, but which is in turn separated from any embodied reality. Evidently, a talking, bodiless head is physically impossible, and so is its effortless multiplication and fragmentation. Following Belting's statement, the CGI head is restricted to his virtual habitus and does not trespass into the physical sphere. This disembodied reality of a digitally rendered face, talking in a lively manner, is juxtaposed with the bodily reality of the audience. The drawings displayed at the back of the room enhance the paradox of disembodied reality and physical corporality permeating our society.

In this sense, then, the work creates an imitation of a human by digital means to evoke the notion of the post-human—a human striving to exceed his mortal limitations. This idea in turn recalls Baudrillard's (2001) seminal text "Simulacra and Simulations" from 1988, where he discusses the substitution of the real with the hyperreal. Such a substitution adds a degree of separation—highlighting one of the main issues in digital media environments—that by which the copy of a copy loses its original point of reference. Both concepts are crucial for an understanding of the hyperreal appearance of avatars in cyberspace.

In *Us Dead Talk Love* (2012), the narrator—the bodiless head—at one point begins to lip-synch to Tim Burton's 2007 adaptation of the love song "Johanna" from the musical *Sweeney Todd: The Demon Barber of Fleet Street* (1973). The head's "features purse and wince and wonder, in

anticipation of and reaction to the song, as if gingerly trying out expressions for the first time" (Luna, 2014, p. 8). These infantile articulations may allude to the nativity of the digital rendering, a bodiless head who is getting accustomed to his surroundings. The lyrics of the song "Johanna" set up the crux of *Us Dead Talk Love*, namely the desire of two separated lovers to be together, a theme which reoccurs throughout the artwork. In the musical, the song is sung by Anthony Hope, a young sailor who wanders the streets of nineteenth-century London and notices a blonde girl at a window, trapped in her house, looking out at him longingly. It is love at first sight. Mesmerized by her beauty, Hope sings:

> I feel you,
> Johanna.
> I feel you
> […]
> And one day,
> I'll steal you!
> 'til I'm with you then,
> I'm with you there …
> sweetly buried in your yellow hair! (Atkins, 2012, *Us Dead Talk Love* [Video])

Even though the lovers are not physically united, Hope sings about his ability to feel close to his beloved. In *Us Dead Talk Love*, as the bodiless CGI head sings Hope's lyrics, a blond, male, computer-generated version of Johanna appears on the adjacent screen. Rather than a conversation between one head with itself, now the work displaces two lovers across separate screens. Even though the two avatars are situated in the virtual sphere, which knows no spatial or temporal limits, the physical separation of the two screens reinforces their distance, echoing that which separates Hope and Joanna, and enriching an understanding of the concept of unfulfilled romantic love.

Atkins himself refutes any understanding of CGI as a concrete material, and instead points to its potential to manifest desire. How then does *Us Dead Talk Love* contribute to the notion of touch or corporeal closeness in the post-digital age? This is closely linked to Jacques Derrida's statement in *On Touching—Jean Luc Nancy* (2005), where he links the notion of touch to the French term "limitrophe"—something neighboring or near: "Touching, in any case, thus remains limitrophe; it touches what it does not touch; it does not touch; it *abstains* from touching on what it

touches, and within the abstinence retaining it at the heart of its desire and need" (Derrida as cited in Nancy, 2005, p. 67).

This idea of touching without actually touching, and thus eternally perpetuating the desire to do so, is expressed in *Us Dead Talk Love* by the narrator longing for the touch of his lover—separated on neighboring on screens they cannot touch, which increases their desire. In contrast to the head's lonely pilgrimage from one screen to the other and the appearance of the back of his blond lover at the beginning of the work, he is longing to face and feel his beloved in the virtual realm, which is also highlighted by two hands touching. Atkins creates an intimate approach to the body through his use of high-definition imagery of the hyperrealistic human. Through the utilization of immersive sound and video, the audience is phenomenologically addressed and brought into the work's narrative. Its imagery, monologues, and written notes evolve around love, intimacy, and the desperate need to communicate. Thus, the desire to touch, love, and, be together reoccurs in an active questioning of the physical restraints and future possibilities of embodiment in the hyperreality of the digital space. The French philosopher Jean Luc Nancy provides a forward-looking glimpse of desire and bodies in his publication *Corpus*:

> This areal body, this video-body, this clear-screen-body, is the glorious materiality of what is coming. What is coming happens to a presence that hasn't taken place, and won't take place elsewhere, and is neither present, nor representable, outside of what is coming. Thus, the coming itself never ends, it goes as it comes, it's a coming-and-going, a rhythm of bodies being born, dying, open, closed, delighting, suffering, being touched, swerving. Glory is rhythm, or the plasticity of this presence – local, necessarily local. (Nancy, 2008, p. 65)

Nancy's concept of the body is one that transgresses. It is in a state of constant coming and going and does not need defining signifiers. Consequently, it is freed from its bodily and corporeal restrictions and equipped for the post-digital condition. This desire for bodies to meet and unite is an ongoing point of contemplation in the work of Frances Starks and Ed Atkins. Even if physicality is transferred to the digital realm, the urge for physical touch remains the ultimate quest.

Nevertheless, the concept of sharing and shared experience may offer an extension to this displacement of physical intimacy in the post-digital

era. This is addressed by Lauren Berlant (2000), who links intimacy to a shared narrative that goes beyond one's own experience:

> To intimate is to communicate with the sparest of signs and gestures, and at its root intimacy has the quality of eloquence and brevity, but intimacy also involves an aspiration for a narrative about something shared, a story about both oneself and others that will turn out a particular way. (p. 1)

"A narrative about something shared" (p. 1) is potentially harder to grasp than the obvious phenomenological dimension (or lack thereof) to virtual intimacy. If, as Berlant states, intimacy is possible through simple signs and gestures, or a shared story uniting the self and others, accessible to everybody, this may form the basis of and alternative dialogue about intimacy in the post-digital age that pivots around shared strategies of communication rather than (virtual) corporeality. Therefore, intimacy may not necessarily depend on physical touch, but could also be embedded through the simple gesture of swiping the screen. Staying in touch digitally, even though rooted in our daily communication, can make way for intimacy through digital means only.

Live and Lively Absence

As described earlier, the concept of touch is closely linked with what Hito Steyerl (2011) calls a "live and lively absence" (p. 58). When contemporary bodies are transferred into the virtual realm, they inhabit a sphere of hyperreality, as a "reference of a reference" they lose contact with their original human source, which in turn raises questions about their authenticity. The visual image of a tablet evokes a more mundane notion of touch: interacting with other people in virtuality. Touch may also transgress into virtuality and may be experienced through signs and gestures—for example, the swiping of a screen. In this way, the body is not limited to its phenomenological origin as corporeal body. The notion of touch is extended through a shared narrative or sentiment. Therefore, artistic practices such as the ones discussed in this chapter, and others, not only highlight the changing nature of intimacy in the post-digital age, but also create new ways to be intimate.

Even when touch is dispersed, it is grounded in the physicality of bodies; the notion of corporeal touch remains vital for any encounter within interpersonal relations permeated by digital technology. However,

once transferred into the virtual realm, intimacy and touch can be experienced through a perpetually evolving process. New technologies further the possibilities of virtual encounters, expanding the formats by which we stay in touch. Shared narratives or sentiments can initiate online intimacies, which lie beyond the phenomenological realm. The urge for the physical touch of another human being remains at the core of our understanding of intimacy.

As Stark's video works articulate the shared intimacy created in online chat rooms, Juuso Tervo rethinks the role of politics, love and intimacy as they relate to education, in the pamphlet *Intimacy with a Stranger: Art, Education and the (Possible) Politics of Love* (2019). In pedagogical terms, the intimacy of loving and learning is among things grounded in a "relation to oneself that requires self-knowledge, self-reflectivity, and continuous self-adjustment" (p. 23). Similarly, as in the frustration that is evoked in the works of art described above, which arises through engaging with intimacy online, art educators are nowadays confronted with the "uncertainty of our precarious labor [which is met by] aestheticiz[ing] it, and turn[ing] it into a lifestyle from which creativity and innovation emerge" (p. 28). Here, this frustration and the potentialities that lie within it can make way for new concepts of art education that engage in the integration of love and intimacies of art.

DIGITAL INTIMACIES IN ART EDUCATION

In times of increased digitalization, conditions for art education are facing new challenges, in turn exacerbated by those of the pandemic, Covid-19. Limited and restricted forms of cooperation and encounter make urgent the need for new ways of discussing and mediating art. Additionally, art education has to integrate the digital dimension into its ways of operating, and at the same time find ways of being together while apart. How is it possible to convey pedagogical intimacy in a time when online communication has become a key tool of education? How can groups interact with each other and experience a virtual situation as intimately as a physical one?

soppa&bleck are a collaborative duo who have, in recent years, established the inclusion of the digital dimension into their educational workshops, through concepts that focus on digital feminist strategies situated between art and activism. An example of this is a form of mediation

that takes place both online and offline, where, as they have said, "digitality should not be a mediation tool, but its condition" (Bleck & Soppa, 2019, para 2). In this way, the physical commonality of communication or use of a shared space for education is transferred to the digital realm, in turn engaging with the incursion of the digital in our everyday lives and therefore our intimate relationships.

In 2018, different formats of soppa&bleck's workshop "Playinbetween" were presented during the "dgtl fmnm festival" held in Dresden, Germany. Through these formats soppa&bleck were attempting to engage the audience in various ways, some of whom were physically present and others who were online, bringing both together through a playful approach. One example of the online/offline strategy was the embedded Karaoke Pool, which enabled all participants to engage via their smartphones. With the help of a moderator, a wish list of songs was created, which were then recorded without the need for physical presence. In this way, a unique community was formed in parallel to that of the festival—taking the interaction and engagement online.

A later workshop developed in 2019 for the next iteration of the "dgtl fmnm festival" entitled "what we can do online that we can't do alone" investigated the constitution of assemblies from various different angles and viewpoints. Together with collaborators, soppa&bleck initiated several parts of their program online, prior to the start of the physical festival. The "Telegram Think Tank with Omsk Social Club," for example, functioned as a think tank for this broader, online audience to collect ideas about digital and physical connections. In this way, an expandable archive was formed and made accessible to all participants. Following from this, chats were sent via the messenger telegram during the physical festival and introduced online communication as the group's preferred mode of communication. When the conversation was returned to the physical room, underlying power relations became more evident. Online communication tools thus presented a way in which to form a non-hierarchical community through its democratized platforms.

The Covid-19 pandemic has revealed another dimension to the value of online communication. Many approaches to the digital in art education now seem mainstream. In their latest project, "Outside Office we can't go back to normal" (2020), soppa&bleck consider the conditions of working together during the pandemic and what they could contribute to the process. Through a digital park walk in a joint chat, their audience met up online and participants were able to walk together through a park

(or a living room, etc.) online. In this way, there was an interaction that was experienced online, and could then be experienced again afterward in the physical world. The post-digital therefore expands the capacities and possibilities of touch as applied to art and education. In order to stay in touch and to connect with topics around intimacy we "require attachment and commitment with the unknown that art always work[ed] with; an attachment akin to an intimacy with a stranger" (Tervo, 2019, p. 18).

New Intimates

In times that are experiencing the emergence of new forms of digital intimacy, physical presence might appear to be less and less a component of everyday life. More often we stay in touch with each other via online communication platforms, rather than through face-to-face conversations. With the development of the Covid-19 pandemic, virtual communication tools have become lifelines for millions of people across the globe. Our growing physical distance has led to a discourse that condemns screens and digital communication as a buffer for, or barrier, to real touch.

However, this neglects the possibilities that this new socially distanced status quo offers in regard to intimacies within the digital. In post-digital art and education, new modes of intimacy are grounded in forms of online communication that imply the potential of the phenomenological body, but also engage independently from these reductive connotations. Both integral tools of communication in the post-digital, education and art are already shaping how we perceive content and interact with each other. Through the use of language, and the live and lively absence of the physical body, new intimacies are enabled that are paradoxically grounded in this displaced corporeality. Intimacy as a brevity and common ground, or the sparest of signs, enables an approach toward art and the digital that foregrounds shared narratives and experiences.

New intimates are intimacies that are created online, ones that connect us with each other and in an ever more physical sense with ourselves. These intimacies create moments of concentration and focus, and promote an exchange of content with others. New intimates draw us back to our own bodies through forming new allies and communities which each other. They are not competing with the physical world but have become part of this very world. They are not new, but yet inform and expand something that has always been a part of us. By incorporating

digital dimensions, new intimacies have made their way from the physical to the digital and back again, to bodies and our everyday lives.

Note

1. In German: „Wir berühren nur noch touch screens. Dadurch denke ich, verlernen wir es möglicherweise, den anderen zu streicheln (lacht). Ich denke, dass wir uns heute zu sehr in uns hineinfressen. Und dass wir nicht auf den anderen hin gerichtet sind. Und die Depression kommt daher, dass wir in uns in uns hineinfressen. Und der Eros ist eine Erfahrung, dass ich aus mir herausgerissen werde, durch den anderen."

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Notes on Corpoliteracy: Bodies in Post-digital Educational Contexts

Gila Kolb

INTRODUCTION

In this chapter, I critically reflect on the question of how bodies in a post-digital state of mind (Archey, 2013) perform, learn, are read and observed, as well as how they can be included in learning settings. Specifically, I focus on the knowing body in the context of the digital worlds, as well as the situation of *distance learning* since the outbreak of the COVID-19 global pandemic. The article was written while these phenomena were still evolving. Therefore, this essay is a collection of observations of "the now," focusing on what I call *critical digital corpoliteracy*, and framed from my perspective as a researching art educator. Aspects of art, education, and teaching at art schools and universities, as well as my experiences during the last six months form the knowledge basis of my essay.[1]

We learn not only with our minds but also with our bodies. This is a standing consideration in the context of educational theories as well as in

G. Kolb (✉)
Schwyz University of Teacher Education, Goldau, Bern University of the Arts, Berne, Switzerland
e-mail: gila.kolb@phsz.ch

art education. Until today, the relation of the learning body is repeatedly used as an argument in educational contexts. In the history of education, we can find it in the often quoted, and by no means unproblematic, statement by Pestalozzi of unity of "head, heart and hand" as well as the development and training of the senses as Rousseau argued in his *Émile* in 1762. The idea of the learning body later on appears in reform pedagogy and is often related with the idea of the independent development and self-activity of the child. One example in the history of art education is James Liberty Tadd's "New Methods in Education" (Tadd, 1899/1903) in which he lets children draw a circle. The size of the circle depends from the child's arm, and not from a preset instruction.[2] Over the past few decades, critical pedagogies have directed the attention to the various ways how hidden curricula inscribe power in the learning body (Postman & Weingartner, 1969). For example, bell hooks (1994) describes teaching spaces as places in which persons, as a whole, with their experiences and stories should find space. Bonaventure Soh Bejeng Ndikung (2018) speaks of "corpoliteracy" (p. 109) and "corpoepistemology" (p. 114) in connection with knowledge inscribed in and performed by bodies within dance performances.

Corpoliteracy and Corpoepistemology

Ndikung (2018) describes "the possibility of a corpoliteracy – an effort to contextualize the body as a platform, stage, site and medium of learning, as a structure and organ that acquires, stores and disseminates knowledge" (p. 90). His argument stems from the realm of dance and rhythm and he understands them as "sociopolitical method[s] and practice[s]" (p. 114) in which realities and knowledges are communicated within a group. Therefore, he uses the concept of corpoepistemology to describe "the study of the nature and extent of bodily knowledge in dance performance, as well as how the today and dance performance produce, enact, inscribe and propagate knowledges" (p. 114). I put these concepts into a productive relationship with art education by using three examples in which learning with and through the body, as well as various inscriptions, of knowledge become visible.

How Can Bodies Be Read
in the Context of Education?

What is actually learned at school? This seemingly simple question can be answered very differently depending on who is asked and why. For example, no teacher would claim that her teaching contributes to the ability of students to write text messages on their smartphone under the unnoticed by her. This is only one of many examples of actions that take place because of how schools are structured and thought of (e.g., frontal teaching). Besides what is taught unintentionally, other vital things are not taught at all, as it is stated in the poem, *What You Missed That Day You Were Absent from Fourth Grade* by Brad Aaron Modlin ([2016]).[3] This poem tells about learnings, which are not taught in school—but should be taught, such as "falling asleep without feeling you had forgotten to do something else" (Modlin, [2016], par. 4). It speaks of tasks a general curriculum usually does not cover. When it comes to knowledge that affects every*body*, school seems to fail.

Body Knowledge vs. Body Ability

Lea Fröhlicher, for her artistic mediation project *Kniffe wissen* (2012), asked people of different ages in Switzerland to show their everyday tricks (or hacks).[4] Another term for *Kniffe* would be *lifehacks*, which make everyday things easier and therefore sometimes involve the use of objects in ways that completely differ from their original intention (e.g., paperclips as safety pins). Lifehacks from the world of DIY and DIY tutorials can be found on digital platforms like YouTube. Fröhlicher ([2012]) understands *Kniffe* as "a specific knowledge (skill) that facilitates the performance of a certain activity" (par. 1, translation G.K.). Some examples are "tying hair together without a hair tie" (par. 11 translation G.K.), or "opening a can of energy drink without foaming over" (par. 12, translation G.K.). However, these tricks do constitute knowledge that is certainly relevant for some—if one has long hair or an affinity for energy drinks, for example. Most likely, such abilities are not considered as knowledge worth teaching in most school curricula, nor are they generally found in teaching books. Sometimes, they are learnt by watching others doing it, as in video tutorials (Fig. [10.1]).

Fig. 10.1 Lea Fröhlicher: Kniffe Wissen, Haare zusammenbinden ohne Haar-gummi (Tie hair together without hair tie), artistic mediation project, Videostill, 2012. Courtesy of the artist

An exhibition at the Hartware Medienkunstverein titled, *Now I'm helping myself —The 100 best video tutorials from the net* (2014), provides an impressive collection of such lifehacks. The first video, a Finnish instructional video from 1979, shows something that can be of essential importance in successful educational biographies; something that has probably never been the subject of a school lesson: how to open a door. While watching the video, questions might arise regarding one's own self-evident actions (for example, how many doors have you opened and closed today? With which foot have you entered the room you are in at the moment?) and knowledge (for example, since when have you known that pressing a handle opens a door? How can you know in which direction it will open?). In the context of art education, one could ask, why are we sitting so often on chairs at a table when learning? What does your body do when seeing art in an exhibition space? (cf. Hummel & Krauss, 2007)

These questions direct our attention to situated body knowledge, which we (presumably) had not been questioning significantly until now. Hence, tutorial videos can make explicit our own situated knowledge, which is often applied without reflection, and is at our disposal through our socialization in certain context.

Of course, one simply can't be aware of one's bodies this way all the time—or otherwise one might not be able to even open a door. However, this allows to (a) critically question (privileged) knowledge, and (b) recognize individual abilities of what one already can do. In the context of education, this means two things: Firstly, to understand what is still to be unlearned and, secondly, to learn what is already there but not recognized. This would be the first aspect of corpoliteracy; that is, to become aware of it, as well as performing as a body and perceiving other bodies. A second aspect is to experience our own bodies as a learning and knowing element in our lives. Learners have their own corpoepistemology to refer to and sometimes schools do not encourage those, and sometimes they simply ignore them.

How to Read Learning Bodies?

Thus far, my focus has been on what is learned, could be learned, or is ignored in educational situations. However, from the perspective of corpoliteracy, it is also important to ask: What do bodies actually do when learning? In the following, I shift the discussion to the perception of the learning body in educational contexts.

In 2014, a widely distributed photograph taken by art historian and journalist Gijsbert van der Wal stirred up both the professional discourse and the public debate on students' media activities. The photo shows a group of students sitting in front of the famous painting *Night Watch* by Rembrandt van Rijn, seemingly looking into their smartphones. After the journalist had posted the photo on his Twitter account with the following text: "This afternoon at the Rijksmuseum" (van der Wal 2014), a lively discussion and distribution of the photo developed, that van der Wal summarized on his Flickr account:

> It went viral, with people often adding rather dispirited captions: today's youth is more interested in Whatsapp than they are in Rembrandt. On the other hand, there were people who warned not to be misled by the image: they asserted that the students were in fact attentive to the art works, using the museum's freely downloadable multimedia tour. (van der Wal, November 27, 2014)

As van der Wal continues, the photograph was shared 9,500 times on the social media platform Facebook alone. It evoked a wide range of reactions among the users of diverse social media platforms. From the comments, it becomes clear that this scene is provocative and leads to speculations. While watching this photo, I speculate: Were the young people curling their necks instead of watching the painting? Were they researching information on the painting online? Did they engage with it while turning their backs on the original? Did they use the museum's free Wi-Fi to play around with other content?

From a normative art educator's perspective, one would expect the children to be turned toward the work of art, maybe while listening to the explanations of an art mediator, and possibly taking notes with a pencil on paper. Exactly these types of expectations not only raise questions about what practices are desired or undesired in the educational institution museum (trafo.k, 2014), they even more importantly raise questions about (1) how do we think children and young people should deal with art, (2) what they should look like when they do it, and (3) how were they already doing it before they went into a museum. Obviously, it is basically possible, even when looking apparently attentive, to not look closely or pay attention, to play a game, or to communicate with others. Of course, this is possible with or without a smartphone. However, it looks different, because we are not yet used to read a body that is curled over a smartphone as a *learning* body.

This is why it is not only a matter of involving the concept of a *critical digital corpoliteracy* in learning, but also in pedagogy because learning can look different than we might first imagine it. Is it sitting on a chair in front of a table, looking attentive and taking notes with a pencil or is it checking some facts in a smartphone or even sitting under a table instead of in front of it? How might our answers change our learning? Becoming aware of reading bodies, which pass or do not pass as learners, might often not be reflected by educators.

To Practice Something for the Future: Strategies of Pre-enactment[5]

My third example looks at a body reacting to an interjection and subsequently recontextualizing a situation. "*OK boomer*" were words uttered by Chlöe Swarbrick, accompanied by a frugal gesture during her speech on climate change in the New Zealand parliament in November 2019.

Swarbrick, a member of the Green Party, used this verbal and bodily remark to comment on an interjection made by another member of the Parliament, resulting only in a minimal interruption to her own speech or even her concentration (Fig. 10.2).

When watching a video of the incident, it seems as if Swarbrick's reaction and gesture were some kind of a routine. This gesture was shared in the social media mostly by younger people and later on covered by several media outlets. In an article published in *The Guardian*, Swarbrick explains her gesture:

"My 'OK boomer' comment in parliament was off-the-cuff, albeit symbolic of the collective exhaustion of multiple generations set to inherit ever-amplifying problems in an ever-diminishing window of time" (Swarbrick, 2019, para. 15).

The strategy of (re)contextualizing an interjection with a gesture and two words in the shortest possible time is not only a political move, but a gesture that derives from a hedonistic youth culture, particularly from the platform Tik Tok, where thousands of videos with the hashtag #OKBoomer[6] were produced well before the above-described situation.

Launched in 2018, Tik Tok allows users to create and share short videos, often accompanied with music. Popular content and tools include lip-syncing, dance moves, and stop tricks made to short music samples.
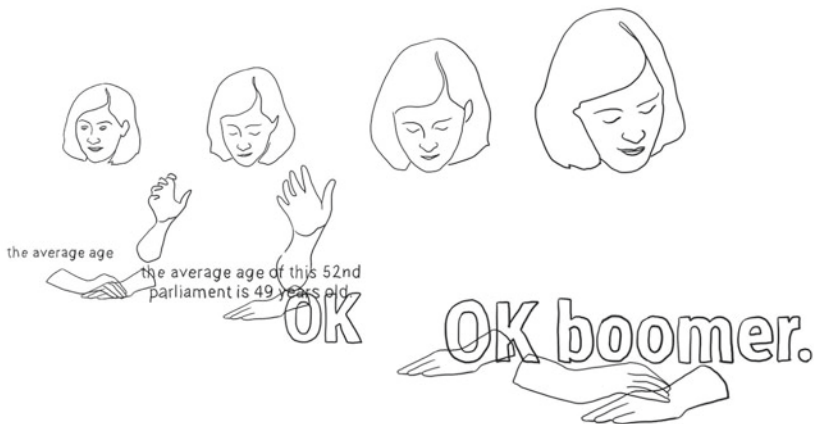
Fig. 10.2 Martina Bramkamp: Drawings from Chlöe Swarbrick's speech on 6.11.2019 after Bloomberg, 2019. Drawing: 2020

In addition, users can react to videos of other users and quote them in a split-screen ("duet"). The term "OK boomer" was used by teenagers, such as @linrizz (18.07.2019), within a response to a video by @old_school_is_not_so_bad, who describes himself as part of the baby boomer generation. While he talks about "Generation Z" as "dreamers" who have "Peter Pan syndrome," @linrizz, in a split-screen, draws "OK boomer" on her college block and holds it while smiling gently as a comment on @old_school_is_not_so_bad's outbreak that matches several clichés of a male white baby boomer. Other users dance to a remix of the song "OK Boomer" (Kuli 2019) while describing or mimicking their conflicts with members of the generation baby boomer.

In November 2019, the hashtag #OKBoomer received further attention as it was used in a music video by Youtuber and influencer Julien Bam on his YouTube channel (Bam 17.11.2019), which is subscribed to by more than five million users. In the lyrics, Bam relates to the intergenerational discussions around climate change:

He says: Fridays for Future is only for skipping school
I say: You say we have to fight for our future
He says: You young children let the internet deceive you
Me like: OK BOOMER (Bam 2019, translation G.K.)

Bam's song clearly shows that the seemingly apolitical attitude within a mainstream YouTube channel is by no means as apolitical.

Going back to Chlöe Swarbrick, she explicitly refers to Tik Tok and the hashtag #OKBoomer (2019), thus demonstrating her knowledge about digital youth culture, if not even her own participation in it. Youth cultural gestures and expressions can thus have a direct political impact by moving from one context (Tik Tok) to another (Parliament). Oliver Marchart describes such anticipatory aspects of gestures as pre-enactment:

Therefore, I propose to use pre-enactment as a term for the artistic anticipation of a political event to come. But this political event cannot simply be extrapolated from well-known contemporary tendencies (in most cases, not much fantasy is required to develop dystopian views of our future). Rather, the future event at stake is an intrinsically conflictual event: the future outbreak of a conflict. (Marchart, 2019, p. 177)

Furthermore, Marchart describes pre-enactment as a way of practicing political activism, even if it is not yet necessary, in order to be able to use it when it, indeed, becomes necessary; for example, in a situation where interruption is used as a powerful gesture by interrupting a young MP. In this sense, I would like to encourage teachers as well as students to exchange, organize, and teach each other things for situations that do not yet exist, to formulate, develop, exercise, and strengthen their own attitudes and gestures until needed. *OK Institution*. This would be my third reading of corpoliteracy, or more correctly, *critical future corpoliteracy*.

Addendum: #TalkingHeads: An Update on the Learning Body

While I was starting to write this chapter in March 2020, the COVID-19 global pandemic changed the world, and with it, physical situations of learning. Coming together in a public, physical space was previously the norm for most schools and universities, online teaching being a mere exception. In order not to endanger one's health and others, the very idea of coming together has changed (or has had to change). Online teaching had become the new norm[7] in some countries since the first lockdown in March 2020, at least for the time being. *Distance learning* in universities and schools tool place not only in the private rooms of students and teachers, but also in video chats running on for-profit platforms.

In this context, the visibility and positioning of the bodies changes in significant ways, For example: (1) While in the classrooms at least half of the bodies of the students (upper body, hands, and head) could be seen and, depending on the narrowness of the room, also be smelled and even felt, only heads and facial expressions are predominantly perceivable in online spaces—occasionally accompanied by hands. (2) Previously, the bodies of the teaching staff, including gestures, walking, or sitting were located in the same room as the participants. Although the positioning of the bodies might have been restricted by the room furniture, participants could choose physical proximity or distance when taking a seat. (3) Those who were presenting something to the class could choose to move closer to the projection or closer to the group, to position themselves in the same direction with the group or the opposite. Everyone could choose a seat, lean back or forward, use an opened laptop or book as a privacy screen. In an online video conference, the choice of seat is not individual, the video conferencing software arranges the participants

according to the time of their "arrival," and/or the number and length of their audible contributions. Lastly, (4) since the participants are often asked to switch off their microphone, the shared space can no longer be heard and perceived by any other sense but the eye, which merely sees moving images (people) in tiles on a screen. All this has consequences for the learning bodies, the shared teaching and learning *as* bodies, and *with* bodies.

In order to think through these consequences, I discuss below five examples of how bodies can be read and understood differently in the digital world. This list of examples will most likely change further in the coming weeks, months, and years.[8] As in almost all cases, an analog situation cannot be transferred directly to the digital world, simply because the digital does not completely correspond to the logics of the analog. Therefore, the point here is not to play off one against the other, but to show starting points from which *digital corpoliteracy* can be developed.

#talkingheads

By focusing the camera on the face, other gestures of the body become invisible. The video conferencing programs give the participants the opportunity to observe themselves while speaking and, if necessary, to correct their own facial expressions (as well as their hairstyle). Possibilities of physical expression (leaning back, breathing loudly, letting the gaze wander, and so on) are reduced. Looking into each other's eyes is hardly possible, because this would mean looking into the camera. However, this view becomes particularly handy when the participants draw each other because neither one's own look on the face of the other person can be perceived, nor that of the other person. Also, the image of the counterpart is already reduced to a 2D version. Try it for yourself.

#platforms[9]

On April 8, 2020, between 8 am and 6 pm, I used Zoom, Jitsi, Ilias, Dropbox, Skype, Whatsapp, Telegram, Mail, Word, InDesign, Messages, Facetime, Discord, WeTransfer, Isyflow, Moodle, Teams, Slack, Google Docs, Blog, Instagram, Balloon.io, Facebook, Messenger, Mentimeter, and Twitter to teach and learn. On some days during the lockdown, I hear myself wondering, "Where do we meet?" This is despite the fact that it is not a physical place but media platforms that this question refers to.

Meanwhile, my body has only moved between the workplace, the kitchen, and the toilet. While in an analog setting, students and teachers can rearrange tables and chairs in the room and furnish themselves, there is still a lack of possibilities to adapt or reinvent functions of digital platforms. To speculate: What would a digital chair circle look like? How could a group of people walk together and casually exchange information in a digital space, as in second life[10]?

#heyhost

In online teaching, the teacher has several roles at the same time. He or she is not only an input provider and moderator, but also responsible for technology and accessibility. The group does not sit together in a room that will eventually become stuffy. The joint responsibility for opening the window, if necessary, is eliminated. The participants take care of their own digital access, namely, their Internet connection and its functionality. Roles are often unclear: What if the private network connection of each individual is not sufficient to be in contact with 20 other Jitsi users at the same time? Who could that student call for support? Indeed, online spaces are more dependent on individualized responsibilities, as the very practice of coming together has changed.

#privacy

Learning and teaching have become more private. For example: (1) The institutional spaces used for meeting have been privatized by external, private service providers.[11] (2) Tools that were previously used mainly privately (e.g., Skype or FaceTime) are now used as workspaces. (3) A view into one's own private spaces as well as into those of others becomes possible. This makes it possible for other actors to participate in the seminar and possibly influence it, such as roommates, children, or even pets, such as the cat living in the apartment, which may take over the screen and thus attract collective attention and "awww" effects. If the camera is switched off, one can do private things while listening. It is not clear whether this helps to keep concentration or not. All we know for now is that they are different types of learning settings.

#simultaneity

In a talk on digital learning and teaching in the arts on May 11, 2020, and in a seminar meeting on art education at Berne University of the Arts on May 15, 2020, I led a survey with two questions: "What do I like about online teaching and what do I not like about online teaching?" A quick analysis of the answers given by students showed that the sensation of emptiness in the digital, as well as the lack of corporality in online teaching are not appreciated. The advantages of being independent of locations and circumstances as well as having different spaces at hand, are however appreciated. Since many events are now taking place online, it is possible to participate in public talks from all over the world. It has become easier to hold a meeting, more resource-efficient and more accessible, because the body itself does not have to be set in motion.[12] The barriers of accessibility have thus shifted, and even more, some physical conditions become invisible when the body gets reduced to digital talking heads. Nevertheless, students (and I) miss physical presence and coming together.

A Digital Corpoliteracy?

The examples sketched out above document moments when a direct transmission from the digital to the analog no longer seems to work. What was previously fluidly intertwined in teaching, begins to stumble when online. In concrete terms, these examples are intended to call for a rethinking of previous educational practices. In my opinion, this is one of the great potentials of the so-called distance learning: questions, ideas, and strategies evolve from these moments. I think it is important to question and reflect such moments of failure, unavailability, even frustration, in an appreciative and critical way. Instead of quickly restoring a new "normality" online, in which teachers talk and students listen, let's pursue this question (again): What ways are there to teach critically? This question might be understood with Foucault (2007) as "the art of not to be governed or better, the art of not being governed like that and at that cost" (p. 45).

I am writing this for my teaching self as well. As I write this last paragraph in Autumn 2020, my online teaching reached a certain point of normality, where the "old," physical methods of questioning hierarchy do

not work the same way in the digital—and the new ones need to be developed or yet to be improved. In the context of educational theories, the concept of the learning body becomes confronted in an almost reflexive way with online learning and teaching, especially, when it comes to art and education. However, the world is changing and with it the digital and globally circulating images, and the way we deal with them modify the initial situations of learning and teaching (Kolb & Schütze, 2020; Meyer & Kolb, 2015). Occasionally hierarchies are changed during these shifts, like when learners are more familiar with digital devices, online platforms, and software than their teachers are. But education is not only defined by shared time, space, and knowledge, but also the knowledge of the bodies and of their perception. What bodies can do within this setting and how they are read in the process should become part of the curriculum of critical institutions striving towards a *critical digital corpoliteracy*, especially if they wish perceive themselves as post-digital.

Notes

1. The reflection on the concept of "Corpoliteracy" started with a contribution to the symposium "Körper lesen! Corpoliteracy in Art, Education and Everyday Life" in September 2019 at HKW Berlin. Online: https://hkw.de/de/app/mediathek/video/78520 [3.11.2020]

2. An image for this exercise can be retrieved here: https://digi.ub.uni-heidelberg.de/diglit/tadd1903/0051 [3.11.2020]

3. The curator, illustrator and art educator Dahlia El Broul made me aware of this poem.

4. Translations for the German word "Kniff" are "trick," "nip, flip, flick." Since those everyday tricks sometimes involve the use of things that are not meant to be used that was, I would add "hack" as well. As Juuso Tervo points out, the Finnish word for such tricks is "niksi" which comes close to "Kniffe".

5. Thanks to Nora Sternfeld for the reference to pre-enactment (Marchart, 2019).

6. "OK Boomer" becomes problematic when the term is used to discriminate. Chlöe Swarbrick used it in the direct context of a question of generational justice in the context of the debate on climate change, when her speech was interrupted.

7. Although digital learning scenarios have been worked on before—but always knowing that the analog situation is the normal case. This has changed since the global pandemic Covid-19 and the subsequent

restrictions on the analog encounter of many people from different households.

8. In spring term 2020, I had a lively exchange of experiences with colleagues about online teaching with: Jacqueline Baum, Maren Polte, Andrea Rickhaus, Italo Fiorentino, Katja Zeidler, Konstanze Schütze, Duygu Örs, Wolfgang Jung, Ibrahim Quarishi, Renate Höllwart, Beate Florenz, Haimo Ganz.

9. More about the power of platforms see: Michael Seemann: Platforms as Political Economies. https://mspr0.de/?p=5186 [3.11.2020]

10. I thank Kevin Tavin for the reference to Second Life.

11. To this problem, especially to the freedom of design, see Heusinger (2019).

12. For example, see the guided tours with a robot in the Van Abbe Museum Eindhoven, which have been available for some years now and have been practicing exactly this resource change for several years.

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Aesthetic Practice as Critique: The Suspension of Judgment and the Invention of New Possibilities of Perception, Thinking, and Action

Manuel Zahn

Critique is a dynamic project that does not control its own dynamics, but, as Michel Foucault (1992) says, is incessantly forming and re-emerging. This is intuitively meaningful insofar as critique embedded in its social framework also changes with the dynamics of social transformation, and as such must be described again and again in new theoretical terms. Referring to an agreed-upon condition of many scholars today, that the computational power digitally networked media has fundamentally transformed all aspects of this very world, I investigate and question not only possible sites of critique, but also of the concept of critique as such. I do not proclaim a crisis of critique, but rather ask, how and what critique in (post) digital media culture might be, to then look at specific settings of critique and critical practices. Against this background, I am concerned in

M. Zahn (✉)
University of Cologne, Cologne, Germany
e-mail: mzahn@uni-koeln.de

this text, from an educational–theoretical perspective, with a first attempt to conceptualize aesthetic practice as a critical practice.

This attempt is framed and motivated by recent research on current forms of aesthetic practices. They are closely related to the research focus *Post-Internet Arts Education* at the University of Cologne, on which I have been working together with my colleagues since the end of 2016.[1] Under the term *post-internet art*, art criticism brings together artists and works of art that deal with the attitude toward life, communication, and aesthetics in times of the Internet. The "*post*" does *not* refer to art *beyond* the Internet, but rather to artistic works and artists who deal very naturally with networked digital media, their aesthetics, the corresponding symbolic forms, and the changed conditions of production, distribution and reception. The digital data (images, text, sounds, etc.), the symbolic codes, and the ways of representation of the Internet, in particular of the social media, of popular culture and advertising serve as an inexhaustible fundus for their artistic works. In addition, these artists use various social media as platforms for their self-representation, for communication and collaboration as well as for the dissemination and discussion of their works.

When reading reviews on *post-internet artists,* one repeatedly encounters statements that often attest the artists and their works an affirmative attitude toward social reality and at the same time deny a critical attitude (Arns, 2014; Droitcour, 2014; Richter, 2014) which may well apply to some works and artists (Heiser, 2015), but certainly not to everyone. The dichotomous logic of these statements follows a philosophical concept of critique as it was developed in the Era of Enlightenment and which strongly distinguishes itself from affirmation, excludes it and instead operates with negation and autonomous self-reflection.

The assumption of an affirmative and uncritical relationship of contemporary, especially post-internet artists to reality interests me from an educational–theoretical perspective as a symptom of a shift and transformation of subject forms and processes of subjectivation in digital media culture. My leading thesis here is that the concept of critique, which has been brought to the fore in professional art discourse, is still a remnant of a classical understanding of education (in the sense of the German concept *Bildung*), which, however, is no longer sufficient for the description and interpretation of contemporary aesthetic critical practices and related processes of subjectivation.

This thesis can be supported in relation to educational theories, which understand learning and *Bildung* as transformative processes. In these theories *Bildung* is neither an output of the educational system nor a determined result of learning processes, but an open and unfinished transformative process of individual views of the world and the self. These positions of educational theory (*Bildungstheorie*) conceptualize transformative processes from the perspective of enabling successful subjectivation. Therefore, these transformative processes are related to self-empowering, emancipative practices. Their fundamental assumption is that social and media-cultural transformation dynamics also change individual educational processes that take place in social, media-cultural milieus (Jörissen & Marotzki, 2009; Koller, 2012; Koller et al., 2007). This assumption was last updated from Jörissen and Meyer (2015); they heighten it when they write: "Changed mediality leads to changed subjectivity" (p. 7). From this perspective, digitalization is a process that intervenes deeply in social relations and, as it were, in the world—and self-relations of people by changing subject configurations, identity, memory practices, social configurations, ways and means of communication as well as critical references to culture.

If processes of subjectivation, including their sociocultural conditions, change, so do the conditions for the theoretical concepts that try to describe such processes. According to that assumption, I am focusing in my current research on the concept of media critique. Since Immanuel Kant's conception of education (as a project of enlightenment), the concept of critique has been a central element of many of the following educational theories and also of more recent literacy theories. Regardless of its numerous philosophical problematizations (Schäfer, 2004), critique or media critique is also a fundamental—albeit sometimes only implicitly negotiated—component in present theories of media education (Groeben & Hurrelmann, 2002; Jörissen & Marotzki, 2009). Following the traditional concept of critique, many existing theories of art or media education and media literacy conceive media critique as a distanced approach to media that aims to decode and understand its representation and communication processes. However, this concept of critique must be questioned in the light of contemporary artistic practices as well as pop-cultural practices, which aim in particular at nearness, immersion, networking, cooperation and collaboration, and no longer at distancing and individual cognitive understanding (Gerlitz, 2017). In what follows, I explore the changed conditions of subjectification and critical practice

in the contemporary media culture with Michel Foucault's concepts of critique and of *apparatus*, as it is used and further developed by Jens Badura (2011) in his concept of *aesthetic apparatuses*.

CRITIQUE AS THE PRACTICE OF ANALYZING LIMITATIONS OF PERCEPTION AND THOUGHT AND THE POSSIBILITY OF TRANSGRESSING THEM

Michel Foucault describes critique in his lecture, *What is Critique?* (1992), as a practice that leaves behind the dichotomy of affirmative and critical references to social reality. For Foucault, critique leads to an art or a technique that also underlies it: "[T]he art of not being governed in such a way" (p. 12). But what practice constitutes this *art* of critique? Against the everyday use of the term, Foucault conceives critique initially as a practice that, instead of criticizing or condemning reality in familiar forms, suspends judgment. Judith Butler (2002) emphasizes in her reading of Foucault that critique goes beyond suspending judgment, and that it is precisely in this suspension of judgment that critique does not return to judgment but opens up a new practice— and thus first and foremost other possibilities of perception and thought (and later also possibilities of action). One result of this may be that dominant discursive orders of judgment themselves become addressable. In other words, a critical practice in relation to technologically, politically, culturally regulated and normalized modes of knowledge can only succeed under conditions that are deeply embedded in, and intertwined with, these modes of knowledge—i.e., also affirmative in parts—and at the same time pursues the goal of going beyond them. Critique therefore seeks to question certainties and orders to which it itself must refer in this act.

Moreover, in his lecture Foucault (1992) distinguishes the concept of critique from the project of Enlightenment; connected with this is the turning away from Kant's purely epistemological critical project. For the problem with Kant's position (and as a result of many scientific understandings of criticism) lies in the fact that it burdens the critical enterprise with the recognition of cognition as a preliminary task. So, if Kant is concerned with critique as a recognition of cognition, and above all as a recognition of the limits of cognition, Foucault wants the critical attitude to be understood as a transgression of precisely these limits. For

Foucault, critical stance is accordingly a border stance that brings together precise historical analyzes of the respective socially set borders with the constant test of their transgression or subversion. Thus, in the midst of the given, powerful sociocultural, political, economic, technical, and media technological conditions, a minimal space of freedom is opened up, which Foucault (2005) understands as a concrete possibility for the transformation of the conditions.

In this perspective, power relations become a field of possibilities, apparent necessities are transformed into a field of reversibility and potentiality. To put it bluntly: Foucault describes on the one hand that one can never act outside rules, regulations, or other power relations while performing critique, but on the other hand, he emphasizes that it is a matter of playing with these rules (even if one has not yet fully recognized and understood them in the Kantian sense), i.e., also subverting, modifying, or transforming them. Foucault is therefore interested not only in elements and rules that constitute the social game of subjectivations and their regularity, but above all in how these rules can be changed.

Critical practice outlined here with Foucault is thus always a media practice, a practice mediated in many ways. It is structurally similar to what I understand by aesthetic practice: a practice that is characterized by devotion to things and, as it were, by sensitization at all levels of experience, i.e., perception, feeling and thinking, and ultimately also by resistance. In an aesthetic experience, our perception and thinking are no longer solely focused on how we judge a situation. We resist an economic logic and evaluate an event, a situation not according to what goals and purposes we pursue in it, what benefits we derive from it, or what we can achieve by acting in this situation, but rather pay attention to perceptions, sensations, thoughts, and imaginations, which in everyday contexts are mostly excluded from perception by the aforementioned reduction mechanisms. Aesthetic practices are thus inseparable and linked to perception in a very specific sense. The specificity of the coupling consists in a practicing, reflexive, and ultimately differentiating reference to one's own and others' modes of perception *in*, *with* and *through* the various aesthetic practices. They refer to perception *as* perception, examine it in terms of its nature and its becoming, in terms of what they are capable of compared to other forms of hearing and understanding, and how they help shape our world and self-relations. Thus, aesthetic practice already has a critical potential on the level of perception. Not only does it play into aesthetic judgment, but rather aesthetic practice, in the sense of Foucault, develops

new possibilities of perception and representation within the field of perception.[2] In many respects, the more recent art educational works of Paul Duncum (2015) point in a similar direction.

Aesthetic practice does not only take place in the professional field and discourse of the arts, but can in principle always take place everywhere and with any objects. More recent aesthetic, media-aesthetic, and media-ecological approaches extend the significance of aesthetic experience and practice even further, when, like Jacques Rancière (2006), they assign to it, from a political perspective, the possibility of *dividing the sensual,* which arises in the complex interplay and interaction of different aesthetic regimes (e.g., art, politics, science). Recent research in media studies on media ecology, which, based on Felix Guattari's (2012) reflections on a new aesthetic paradigm of subjectivation, go one step further and examine the complex connections between technical developments and the modes of human perceptions and experiences, their feeling and thinking, again tie in with the concept of aesthetic regimes (Hörl, 2016; Hörl & Hansen, 2013). These investigations focus on a subjectivity other than classical subjectivity, and on cartography of "transpersonal, non-subjectivist, pre-cognitive and pre-perceptive structures of human and non-human actors" (Hörl & Hansen, 2013, p. 11, translation by the author) that produce a subjectivity that can no longer be brought into line with the notion of an autonomously perceiving and judging individual subject, but is also technologically pre-configured and co-generated.

APPARATUSES: SUBJECTIVATION AND AGENCY FROM A MEDIA-ECOLOGICAL PERSPECTIVE

According to the outlined media-ecological perspective above, aesthetics and aesthetic practices do not (only) address ways of seeing, hearing, saying, feeling, etc., but in particular the production and events of (non-)audibility, (non-)sayability, (non-)visibility, (non-)sensibility, etc., and thus what can be understood as an "aesthetic milieu."[3] In order to better understand the complex, also technical and media-technological mediation of aesthetic milieus and aesthetic practice and to describe their complex expositions, I refer to another term of Foucault (2003), which was taken up and further developed by thinkers such as Gilles Deleuze (1992) and Giorgio Agamben (2009): the concept of the apparatus (*dispositif*).

Like his contemporaries Jean-François Lyotard and Gilles Deleuze, Foucault was concerned with the concept of the *dispositif* in order to get a kind of apparatus, a structure into view, which, in addition to diverse discourses, institutions, architectures (i.e., spatial arrangements), can also encompass techniques, practices, and the like. The apparatus is "the network that can be made between these elements" (Foucault, 2003, p. 392, translation by the author). The concept of the apparatus is located on a *meso level*, which also includes concepts such as structure, system, and discourse. The apparatus is also "smaller" than episteme, culture, or society and again "larger" than event, statement, or action. It undermines all attempts to think about the subject without society or society without its subjects by opening up a middle field of indifference of both levels. If one describes technical connections as a material apparatus, then the directed, but ultimately not completely determined effectiveness of technical and technological devices and devices comes into theoretical view. The effectiveness of technology becomes visible above all as or through its social effectiveness, through its cultural effects. Thus, networked computers not only process information, but also always produce or subjectify a certain type of user as well as a world corresponding to this user. The latter is currently of great importance, since the worldwide techno-ecological networks produce perceptibilities (percepts and perceptions) and sensitivities (affects and affections) that exist *before* any sensual experience and perception of human bodies (Hörl, 2016). Jan Jagodzinski (2017) comes to similar considerations in his book *What is Art Education? After Deleuze and Guattari*. He defends, with reference to Deleuze and Guattari, the difference between percepts and perceptions as well as affects and affections (feelings), and thus the possibility of artworks/visual culture to entangle their viewers in percepts and affects that enables new perceptions for them. I return to this idea later in the chapter.

Gilles Deleuze (1992), in his re-reading of Foucault's works, clearly emphasizes the "lines of cracks, fissures, and ruptures" (p. 157, translation by the author) that permeate the apparatus and open it to the possibility of subversion and transformation. With regard to the technical apparatuses, this means that every attempt at a totalizing (essential) determination of their functioning and their effects must fail. They *are* each in specific geographical, historical and sociocultural contexts and struggles, and their destinies depend on what they do to us humans and what we do to them. Humans and technology *become* together in an inextricable

entanglement and interrelation; they lead into the paradoxical tension, already mentioned by Foucault, of subjectifying submission and subjective power to act. Accordingly, in transgressing the simple difference between humans and technical machines, Deleuze (1992) discovers other hybrid actors with whom alternative possibilities of critique and subversion are connected.

The apparatus therefore does not stand for a technique of complete and successful control. Its manifold, often contradictory effects rather open up the apparatus to possibilities of critique, subversion, and transformation, in the sense of a redefinition and re-evaluation or other forms of resistive agency. Subjectivation and agency in apparatuses thus do not form opposites, but are reciprocal conditions of possibility and impossibility at the same time. *Agency,* however, should not be interpreted in an instrumental sense in terms of action theory; rather, it stands for a capacity for the critical appropriation of the situation potential of apparatuses, from which subjects emerge first and foremost.

Aesthetic Apparatuses of Critical Practice

Jens Badura's (2011) reflections on *aesthetic apparatuses* can be connected to my sketch of the apparatus as a relational context of interdependencies that enables both subjectivation and *agency*. With reference to Foucault and Deleuze, Badura (2011) conceives his concept of aesthetic apparatuses as "a conceptual support for the description of connections and interactions between heterogeneities with the aim of alternative options of world disclosure" (p. 1, translation by the author). He goes on to explain that the

> discussion of factor constellations that 'make' subjects or structure dynamics of subjectivation and the formation of world relations in a particular present and cannot be conceptualized solely in what has made a steep career in cultural studies as 'discourse', but requires other – also and above all aesthetic […] – attention. (p. 2, translation by the author)

What can one now understand by "aesthetic attention?"—Aesthetics, together with its performative mode of aesthetic experience, opens up to dimensions of experience of world and self, which remain closed to hermeneutic, discursive, and conceptual-rational approaches—without

completely turning away from conceptual reflection. The aesthetic experience *arises* and *becomes* rather in the tension between matter and sign, sensuality and meaning. Badura continues:

> Seen in this light, aesthetic practice only 'functions' as an interplay of these forms of knowledge that each stand alone. At the same time, however, this interplay of aesthetic practice provides a specific motivation to try again and again precisely the impossible 'translating', i.e. to continually dent the boundary walls of the conceptual - which is why an aesthetic world relation is always a transformative world relation and an aesthetic practice always triggers shifts in sensibility and conceptual creativity. (p. 4f, translation by the author)

One can also describe this specific attention to the aesthetic world relationship as a "becoming aware" of the momentary experience beyond a functional orientation. In our perception and imagination, we are then no longer solely focused on what we can achieve in this situation by recognizing or acting, but also pay attention to perceptions, sensations, and imaginations that are otherwise excluded by the everyday mechanisms of reduction. For Badura, the term "aesthetic apparatus" is used accordingly to describe such to comprehend "apparatuses" composed of heterogeneous factors in which aesthetic opening up of the world in the sense just described above is possible and ideally favored. In other words: Aesthetic apparatuses are production units for enabling transformative experiences.

Badura (2011) distinguishes the aesthetic apparatuses with regard to their enabling in apparatuses of the first order, "as a condition of the possibility of aesthetic world relations" and those of the second order, which can be understood "as a staging context for the deliberate provocation of aesthetic world enclosure" (p. 4, translation by the author). With this theoretical view on apparatuses I now approach an artistic work of *post-internet art* and ask whether and *how* it can show us, far from being a mere illustration or affirmation of social media-cultural reality, critical practice and at the same time open up other possibilities of perception, thought, and action.

An Example: Ryan Trecartin's "Re'Search Wait'S"

Ryan Trecartin is a Texas-born artist who lives and works currently in Athens, Ohio. Since 2000, together with the sculptor Lizzi Fitch, among

others, he has produced a considerable number of video works which can be seen on online video platforms such as *YouTube* and *vimeo,* and—after Trecartin was presented to a broad public interested in art at the Whitney Biennale in New York in 2006—in numerous representative museums and galleries worldwide.[4] Over the years, the videos have evolved from a home movie aesthetic of the first works to complex, expansive video installations with multiple screens. For many curators, museum directors, and collectors Trecartin is the showpiece artist of *post-internet art*. The focus of my observation is the four-part series "Re'Search Wait'S," which was created in the years 2009–2010.

In a first approximation, Trecartin's videos (he calls them "*Movies*") can be described as *mashups,* which impose some media complexity and intertextuality on their viewers. *Mashup* is the term used because one can still recognize individual samples of cultural artifacts and media content as well as symbolic codes of their representation integrated into the videos, even though Trecartin, together with his ensemble of participating artists and actors, appropriates, mixes, and modifies them in collective individuation. The videos follow Lev Manovich's definition of digital film from his book *The Language of New Media* (2001) pretty closely, according to which conventional film recordings, the so-called live-action, such as the performances of Trecartin and his actors, are only raw material for further processing (in the sense of digital post-production): Animated and manipulated in the post-production process, they are assembled together with other already existing found images, sounds, and 3D animations. Almost no setting, no image that we see in his work, no sound, no voice that we hear was not edited and manipulated using digital editing software.

Trecartin also works with overlays and compressions of the forms and symbolic codes of current global media culture, as they appear on social media platforms from *YouTube*, *Instagram, Twitter* to *Facebook*—this is most evident in the frontal addressing of the camera, as we see it from *Selfie culture* and the *YouTube channels*. All in all, in Trecartin's videos the camera gains the significance of an actor who initiates, promotes, and transforms social actions: among colleagues, friends and in the family, in museums, on journeys, business meetings or at parties. On the level of editing, the moving images, text, and sounds are superimposed layer by layer or presented side by side in split screens, creating a densely woven web of quotations and allusions. In this way the videos achieve a complexity of statements and simultaneous audiovisual articulations that exceed the attention of their viewers who have (still) formed them

primarily with books and narrative films—more generally with linear, successively processing symbolic forms. Trecartin's videos can (or must) therefore be seen over and over again. Repeated viewing then unfolds the multiple stories of his *movies*, opening up serial references within the videos and to other media articulations and cultural products.

The symbolic codes and media articulations to which Trecartin's videos refer, from whose set pieces and samples (images, sounds, sounds, music, postures, gestures, mimics, accents, statements, etc.) they are composed, are, however, not simply repeated by him, his co-authors and actors, but, as one can say in relation to art and film historical precursors, changed and shifted. The queer travesties and performances of the actors in Trecartin's videos are reminiscent, for example, of Cindy Sherman's photographic series, for example, *Untitled Film Stills*, 1977–1980, or of cinematic ensemble works by John Waters. If Sherman's disguises reveal the influence of society and the leading media of the time, cinema and television, on subjective identity formation, and if Water's films question the norms of consumer society, Trecartin's travesties also include the influence of digital media and the Internet. Although Trecartin's works refer in their exaggerations to a future world, it no longer seems far away: a world in which everything we do, what we perceive and communicate in/with/via digital media, can potentially be recorded as a data track and evaluated, replicated or mixed and remixed with other data at an indefinite time. From this future point of view, casting shows, *Facebook*, *Instagram* and *Twitter*, selfies, *YouTube* videos, data clouds, and listening programs will only have been preliminary exercises for a world in which everything living will be recorded as code, replicable and changeable at will.

The predominant symbolic forms of digital culture are the series and the database[5]. And I understand Trecartin's videos as a transition, as a hybrid between cinematic narration, series and database-generated remix video. Although we still see a kind of cinematic action with drama and characters, this can no longer be understood as a narrative or linear narration (as we know it from cinema and television films), but rather presents itself as a multilayered time sculpture, as audiovisual montages of digital material from the largest global database: the real-time archive of the *World Wide Web*.[6] In his videos, nothing and nobody really seems to be in the right place, rather the things, images, and signs that were created to give us orientation buzz around us as viewers. Trecartin's videos consistently deny their viewers trained dichotomous structures and orienting binaries such as real–virtual, male–female and further identifications such

as geographical, ethnic, and social origins of the figures appearing. In this process, the aesthetic figures of the videos lose a stable identity. Often one fictional character is performed by several actors, even more often an actor plays several fictional characters of different gender, age, or social origin.

Figures can appear several times in the picture or cancel the physical laws of time and space, they can change their appearance, their gestures and facial expressions, voice colors, speed of speech, etc., in the course of a video or over several videos of a series. Thus, it appears that the physical, habitual, and linguistic abilities of the figures are separated from their origin as soon as they exist as audiovisual digital data in the global hypersphere. It is not only gender that has detached itself from the biological body, but also certain behaviors and gestures of the person have become independent of social origin and the accent has become independent of geographical origin. In addition, Trecartin's characters can apparently easily acquire these various physical gestures and facial expressions as well as behavioral and speech patterns, using them like *software* or an *app*.

This interpretative traces of Trecartin's videos could be followed even further and could still be differentiated. However, this must be done elsewhere. It could be shown that Trecartin's videos—as an example of aesthetic practice—allow us to experience current reality in a parodistic way and *critically* refer to its possibilitises and deviations, precisely to what is not yet. This is what Trecartin and his co-authors do above all by inventing a new aesthetic practice and thus also other artistic works, here creating a new variation of video. In addition, they show us, as viewers, something about our condition in post-digital media culture, in which what we call reality is closely intertwined with the *World Wide Web*. At the same time, they refer to a different subjectivity or to other subjectifying practices—on the one hand by negating stable, clearly defined identities and existing symbolic orders as permanent, and on the other hand in the manner of their collective appropriation and reinterpretation of existing pop-cultural material and knowledge.

CONCLUSION

How can the experiences of Trecartin's videos be further thought of for determining today's educational challenges in current media culture? Digital platforms of social media such as *YouTube* can become aesthetic

apparatuses in the sense of Badura through the different aesthetic practices of their users. This is articulated by Trecartin's presented remix videos—but this does not mean that the aesthetic forms invented by Trecartin (and his creative collective) are the only ones to articulate critically in an aesthetic practice. It has further aesthetic practices and interesting articulations in the wide field of social media (from glitch to the numerous forms of remix to subversive and transformative forms of hacking and modding) that can unfold similar critical potential.

Trecartin's *Movies*, as an example of remix videos, show an extensive popular knowledge of the symbolic and aesthetic structures of the audio-visual images to which they refer repeatedly, but also to experiment with and play with the recombination of technological apparatuses, bodies, techniques and practices, as well as the symbolic-imaginary material, and to try out new possibilities of representation and perception. The remix videos thus open up possibilities of aesthetic world disclosure that can inspire their recipients to perceive and think differently and thus entangle them in aesthetic experiences.

In that sense my inquiry of Trecartins aesthetic practice resonates with questions concerning our present situation raised by Kevin Tavin and Juuso Tervo (2018). They are also referring to the artistic work of Ryan Trecartin and other post-internet artists as examples that can help to explore and understand the present conditions of the post-internet or post-digital media culture and its formative effects on human beings. In contrast to chronological conceptions of art education, in which the Now serves as a transition for an autonomous, empowered subject to project a future, the New, they understand post-internet art as a possible example of a Now without a perpetual recourse to the New. In their understanding:

> The Now is not solely in the hands of people (offline) or technology (online), but it forms through the interplay between different actors (human, non-human, artificial, etc.) and the different temporalities of their actions (movement, repetition, frames/kilobytes per second). Simultaneously offline and online, the Now becomes a moment of action where it is not clear whether the effects of these actions are virtual or real or both or neither. In order to mobilize this indeterminacy (to move in it rather than with it), it becomes crucial to explore not only the (im)material conditions of agency (e.g., online or offline), but also what kind of times these actions occupy. We see post-Internet art as something that might, at

least initially, help art education navigate within such contested terrain of differing temporalities in the Now. (Tavin & Tervo, 2018, p. 289)

For every aesthetic practice and every artistic work, however, the question arises anew whether it actually functions as a subversive liminal event and as a border-experience in the sense of Foucault, opens up spaces for play and interpretation, or contributes to a trivialization of critique (Masschelein, 2003). Critique is then fitted into the given and allows its continuation, it has the function of optimizing what is given and thus forms its own trivialization. Thus, the question is raised as to how their critical practice in the forms of showing, or in the broader sense of representation and perception, can overlap with epistemological, political, or ethical questions. I consider Trecartin's videos to be a good example of how aesthetic and ethical questions can be intertwined.

Let's begin by noting that in Trecartin's videos, in the world they represent, the identity of persons, animals, and things seems to be both precarious and unstable, as well as extremely malleable and can be shaped at will by the subjects acting *in* and *with the* digitally networked media. I do not follow Trecartin's optimism about technology, which creates a society of freely shapeable, flowing identities, which in the near future will not only be able to shape their biographies and their social gender, but also their bodies by means of digital technologies and the consumer objects of a hypercultural industry. With reference to Deleuze and Guattari (1997), however, it can be said that the videos stage a structurally *schizoid* subjectivity. This divided subject exists without a stable identity, so it is no longer individual, but *dividual*. Although this dividuum is still recognizable as individual, it is not closed, not undivided, not *in*-dividualized in the world, but more or less consciously entangled in manifold references, participation and division processes of various magnitudes, which in turn incessantly *inform* it (also in the sense of *bringing it into form*) and subjectify it. It is therefore constantly becoming, seized and formed in relation to other people, media technologies, cultural practices, things, and conditions (Ott, 2014).

Trecartin's videos thus make it possible to think of the visual potential of a social, cultural, and media technological *outside* of the subject—this is also their provocation in educational theory. Before we perceive, think, speak, or act as human beings, today we are always in a digital, audiovisual field of image production, reflection of glances, visibility, and audibility. This image production functions on a global scale and in close relation

to the digital hypersphere for which the distinction between inside and outside, real and virtual as well as geographical, national, and cultural borders no longer makes any sense, and in whose functioning one participates as a human being by following its movements. In other words, the experience of Trecartin's video works no longer allows viewers interested in educational theory (as a possible scientific observer's perspective) to think of subjects as the intentional center of their actionally opened up world. In addition, they suggest that the subject below the linguistic-discursive subjectivation should be understood as a singular, specifically assembled (composed of heterogeneous elements) audiovisual moving image, which in turn refers in a special way to all other audiovisual moving images around it.

Following Gilles Deleuze, I described this subjectivity elsewhere as *cinematographic subjectivity* (Zahn, 2012, 2015, 2016). The cinematographic subject must be conceived as a montage of movements and thus alternations, deviations, changes, as well as an energy-intensive production of continuity and identity. In and with Trecartin's videos, therefore, something becomes perceptible and conceivable that generally applies to educational processes in contemporary media culture. We connect with images, sounds, texts, and data or with parts of them (*samples*) that have caught our attention and remained in our memory, and then "cut," "assemble" and reissue them. We change and form these audiovisual images in our imagination and memory and they change us, the way we see ourselves, see ourselves in relation to others and the way how others should see us.

Accordingly, aesthetic education, and art education could also be reformulated theoretically: as a differentiating practice of the *dividuum* in and at the different situational, material, medial, social relations, interdependencies, and transmissions in which it has formed and continues to form—in search of other, new possibilities of perception, articulation, and action as well as ways of use in complex media technological milieus. These milieus and our positions as becoming (in-)dividuals within them can be understood as a network or, to put it in deleuzian terms, a rhizome (Duncum, 2015).

Here connections can be made to the media-ecological position of Katja Rothe (2016), who proposes to critically examine the use of media from a praxeological as well as ethical-aesthetic perspective and, in addition, to think of the design of questions of media use following Foucault as an ethical project in which one forms a stance, a style in

dealing with the world, the other and one's own life. From a media-ecological perspective, the shaping practice of ways of existence or life shifts from the anthropological question of the successful or happy life of the individual to media-anthropological questions which "under the precondition of technical-human coexistence sound out the possibilities of 'care for oneself'" (p. 51, translation by the author). Such a project would no longer be conceived as self-education, as an individual educational process, but rather as a complicated, inter—or even multisubjective, distributed event of the interconnected subjectivities. Thus, paraphrasing Adorno (1959) and expanding him at the same time, would again be concerned with a political concept of education as the institution of human *and* non-human things.

Notes

1. The research focus *Post-Internet Arts Education* at the University of Cologne focuses on the strongly changed conditions for art pedagogy and cultural media education in the horizon of the *Internet State of Mind* (Chan, 2011) and aims to develop consequences for the practice and theory of education in dealing with arts and media in the advanced twenty-first century. It was initiated in 2015 by Torsten Meyer, Kristin Klein, Gila Kolb and Konstanze Schütze. For more information see http://piaer.net.
2. This understanding of critical practice can be linked to Irit Rogoff's (2006) concept of (embodied) criticality, which she conceives as a thoroughly risky, speculative collective production of cultural artifacts, modes of representation and forms of knowledge. It must remain here with the reference, and it is reserved for another paper to elaborate the similarities and differences between the two concepts of critique.
3. By "aesthetic milieus" I understand technological, cultural, thus also symbolic-imaginary milieus which make perception first and foremost possible and thus subjectivations in the context of aesthetic practice. Perceptions, affections and feelings then appear as different actualizations of this previous differential. These pre-individual, media-technological milieus are to be examined in more detail in media aesthetic and media-ecological studies.
4. See https://vimeo.com/trecartin, http://www.youtube.com/user/WianTreetin or http://www.ubu.com/film/trecartin.html.
5. Central perspective, bivalent logic and the linear narrative still exist as symbolic forms, but lose their social and cultural significance.

6. His movies differ from other artistic works, which force the abundance of digital information from the internet into other (maybe more familiar) forms in order to harmonize and tame them, such as the project *Life in a day* (2011), which edited and at the same time transformed the spatially, temporally, and culturally heterogeneous video data of *YouTube* users into the format of cinema.

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What Is the *Poor Image* Rich in?

Helena Schmidt

By 2020, as this chapter is written, there are more images available on the internet than ever before. On Instagram, over forty billion photos have been shared so far (status: February 2020), whereas the use of social media applications doubled between June 2016 and 2018.[1] Since the emergence of smartphones, communication via images has become part of our everyday lives. Konstanze Schütze, who wrote a dissertation on *imagery after the internet*, describes the image as "managing cultural unit of the present" (Schütze, 2019, p. 12). This means, that images shape and reflect our contemporary culture like no other phenomenon. This fact is crucial for a critical mediation of art that is supposed to teach a reflective approach to the phenomenon of digitally available and copyable images.

My dissertation, "From the *poor image* to *poor images*"[2] deals with digital images that circulate on the internet in relation to art educational practice. They are accessible to a broad range of users online and can easily be copied and reused. Specifically, in my research, I am interested

H. Schmidt (✉)
Academy of Fine Arts, Vienna, Austria

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in the use of images in an aesthetic context. In order to better grasp this new category of images that has emerged with the advent of the internet, I critically look at Hito Steyerl's term *poor image* from her essay, *In Defense of the Poor Image* (2009), which describes poorly resolved copies of images traveling across the internet. Thus, this chapter attempts to theoretically approach the term and to summarize Hito Steyerl's initial definition of the poor image in order to situate it in the present. More than ten years after the first publication of the essay, digital media has significantly changed. This is crucial for my hypothesis that poor images are suitable as raw material for contemporary, performative visual action (Sachs-Hombach & Schürmann, 2005).

Poor images are a product of the technical conditions of our time. They are inherently performative, for they are constantly subject to aesthetic transformations on their journey through the net. Poor images are part of our everyday communication as well as subject and raw material of artistic works. This is relevant for a contemporary art education that aims to mediate (digital) visual literacy, thus the capacity to critically "read, write and create visual images" (Harrison, n.d., para. 1) in our post-digital present. In this post-digital present, or sometimes referred to as post-internet, it's not the case that the internet is over (Steyerl, 2013). Rather, the prefix *post* describes a present in which the internet has become available almost anytime and anywhere, for a broad range of people. Entering the net is no longer a conscious act for those who have access to mobile internet; it has become possible to be constantly online using various mobile devices. Furthermore, collecting information has become very easy with the internet "at our fingertips" (Bunz, 2014, p. viii). Much of this digital information is visual:

> In today's world meanings circulate visually, in addition to orally and textually. Images convey information, afford pleasure and displeasure, influence style, determine consumption and mediate power relations. Who we see and who we do not see; who is privileged within the regime of specularity; which aspects of the historical past actually have circulating visual representations and which do not; whose fantasies of what are fed by which visual images? (Rogoff, 2002, p. 25)

Although this visual culture, as Irit Rogoff, professor, theorist and curator, describes it, was already introduced at the end of the twentieth century with the emerging presence of new media, due to the dominance of visual

content on the internet, her thoughts are still very relevant. It's crucial for us educators to be able to identify and distinguish certain visual regimes and power relations online while the realm of images, their entanglements and contexts of signification seem to become increasingly complex in the post-digital present. The poor image is a post-digital phenomenon, as it has become a common image practice, both in art and everyday life, at most since the advent of smartphones. It represents both a practical product and an object of reflection in a contemporary, critical art education and can therefore be seen as an enrichment for it.

In Defense of the Poor Image

"The poor image is a copy in motion" (Steyerl, 2009, para. 1). This quote is from the introduction to Hito Steyerl's essay, *In Defense of the Poor Image*, first published on e-flux in 2009. Ten years after the publication, the text is still relevant. Steyerl describes a contemporary hierarchy of images in which the poor images are at the very bottom. As a digital, poorly resolved copy of the original image, the poor image circulates on the net, partly without reference to its origin or authorship:

> Its quality is bad, its resolution substandard. As it accelerates, it deteriorates. It is a ghost of an image, a preview, a thumbnail, an errant idea, an itinerant image distributed for free, squeezed through slow digital connections, compressed, reproduced, ripped, remixed, as well as copied and pasted into other channels of distribution. (Steyerl, 2009, para. 1)

Steyerl (2009) describes the phenomenon using examples from film history. According to her, experimental and essayistic movies disappeared from the screens after the advent of commercial cinema. The latter replaced them and, due to lower demand, they were hardly shown anymore. High-resolution videos were only shown in elitist (art) institutions and installed on special projectors for a small audience, before disappearing into the archives (again). This has changed since the emergence of various online streaming platforms that are based on user content, such as *YouTube*. Steyerl (2009) explains that film classics that were considered to have disappeared from the screens are suddenly very easily accessible on the internet, albeit in poor quality. Furthermore, video art can be smuggled out of the museum with a mobile camera-phone to suddenly reappear on the internet (in the shape of poor images).

In the context of our post-digital present, which is inextricably linked to digital media, the question arises: What are the poor images today? The art educators Gila Kolb and Konstanze Schütze (2020) refer to an interview with Carson Chan by Karen Archey, when they describe that we are living in an *Internet State of Mind*. This illustrates a view of the world that has fundamentally changed since the internet:

> We presume an Internet State of Mind and suggest a radically conscious approach to it (especially for art educators). For Internet State of Mind (Chan, 2011), understood as a fundamentally changed view of the world, leads us to a different perception of the world, which we now have to examine professionally. (Kolb & Schütze, 2020, p. 262, trans. Schmidt; cf. Archey & Chan, 2013, para. 8)

Since Steyerl introduced the poor image, digital technology has evolved tremendously. Smartphones film in 4 K resolution, drone, and mini action cameras are available and affordable to many for home use and are parts of the present-day consumer-oriented society. Until recently, holiday pictures taken with digital compact cameras had to be downloaded to the computer via cable and then sorted out before individual pictures were uploaded to the internet. Nowadays, a recording of a video piece in an exhibition can be, for many, posted on the net with a single click and in real time. For instance, using the Instagram story function, one can share an artwork live with one's online community.

Those images, produced by mobile devices, have ceased to only be badly resolved digital copies of analog originals. Should they still be called poor images? Why should we, after all the techno-social developments and innovations, still use this term? They are certainly copies in motion, but they are no longer "poor" in the sense of "badly resolved." So, can the term *poor images* still be used today in times of good resolution, live streams, and insta-messages? Where can *poor images* be found and do they need to be redefined under the updated media conditions? (Fig. 12.1).

What Is a Poor Image (Today)?

The artist Marisa Olson (2018) describes the poor image as a "lossy copy: a digital artifact accelerating toward a thing of the past; an accidental fallacy" (p. 2). This means, while the original image is still recognizable, the lack of certain information causes the image to become "poor

Fig. 12.1 On the website http://www.helenaschmidt.com/ I am collecting poor images since 2015, which can be uploaded anonymously and without registration. The visual archive started as a part of the artistic research during my studies and served, amongst other projects, as a source of material for my master thesis

in something." In the context of an internet characterized by widespread dissemination of content and constant updating, the meaning of the word *poor* may therefore vary in itself: It can describe low resolutions, fractured images, loss of information or sources or even barely recognizable content.

Similarly, the word *image* has different meanings depending on the context. Visual science distinguishes the "image" from the term "picture" (Mitchell, 2005). Pictures are materialized physical artifacts, while images are immaterial. Media scientist Simon Rothöhler (2018) describes digital images as invisible, stored code that computers can read and then convert into readable images (through pixel-shaped light points). These codes multiply and spread across the internet in a seemingly uncontrollable manner. In the shape of poor images, the digital code exists as innumerable copies of itself in different (digital) places. These online-environments vary in a way that would not have been technically possible

before the emergence of web 2.0, which caused an abundance of visual digital data.

For post-digital image phenomena, such as memes,[3] GIFs or Insta-clips, this makes sense. On social media, images are commonly used as raw material for mini-collages used by the online community to visually comment on current events. These images, for instance in the shape of memes, are repeatedly recycled and, re-captioned, according to the shifting context: "Another fundamental attribute of Internet memes is intertextuality: memes often relate to each other in complex, creative, and surprising ways" (Shifman, 2014, p. 2). For example, the infamous art piece *Comedian* consisting of a real banana, duct-taped to a wall by Maurizio Cattelan at Art Basel Miami Beach in December 2019 caused an immediate abundance of internet memes. It was commented on, copied, and edited almost in real time all over the world.[4]

The viral meme-production was not only conducted by humorous or critical private commentators, but also by other artists and several commercial brands who copied it to advertise their products. For example, McDonalds shared an image of their french-fries taped to a wall on their Facebook-account. Ultimately, the meme was induced so far in the collective memory that the advertisement went on a meta-level: One ad just showed a piece of half torn-down duct tape on a wall. Above the brand-name "Big Mac®," which implies that the famous burger had until recently been taped to the wall.[5] This is essential for art education, as it shows how quickly artistically relevant concepts, such as original, copy and authorship, market value and appropriation, become blurred and intertwined in the post-digital age. Within a very short period of time, private users, artists and advertisers alike access internet content and negotiate it in a similar way, but with completely different ulterior motives and goals. Such examples may help the field of art education to understand pedagogically and demonstrate the potential fluidity of the image of the present and the variety of actors who deal with it (Fig. 12.2).

Poor images today (in 2020) can thus be described as immaterial, digital image-copies that have significantly lower resolution than the original analog (or now also digital) image. They circulate publicly on the internet where they potentially mutate and multiply over and over again. They are sent as private messages, shared via stories, posted as permanent posts and streamed live on social media platforms. Steyerl (2009) defends these poor images because she considers them to have political, community-creating and artistic potential. Due to the rise of new popular

Fig. 12.2 One of seemingly countless meme-reactions to Maurizio Catte-lan's piece Comedian by the feminist collective Guerilla Girls Broadband. Guerilla Girls Broadband [@guerillagirlsbroadband]. (2019, December 12). Green Banana, found objects, 8 x 8 inches, 2019. DETAILS AND PRICE INFO AT: https://tinyurl.com/theartworldisbananas #ht to @robertasmithnyt for the recognition. #provoke #protest #prevail 🐘🍌🦍 •••#feministart #bananaart. [Photograph]. Instagram. https://www.instagram.com/p/B523Cztgddn/?utm_source=ig_embed

technologies, users not only consume images but also shape, change and redistribute them as prosumers (Toffler et al., 1980). As the professor for digital culture, Felix Stalder (2017), puts it, "Users of social mass media must produce (themselves)" (p. 57). So, following Steyerl (2009), images that were previously only accessible to a few are now available to a broad public, who produces and circulates poor images on their (mobile) devices. However, we know that a utopic online-detachment from the capitalist system has not become reality. Thus, the curator and writer Vanessa Kowalski (2018) doubts that YouTube, Twitter and Facebook are solely sources of empowerment and positive social change:

> It was thought that the Internet would rejuvenate democracy, but […] the past several years have shown that emancipation and subordination can be enacted by exactly the same tools. It seems however, that these tools are all that we, those deemed the users, have left. (pp. 24–25)

Consequently, we as users have to accept these tools up to a certain point if we want to interact with them. That means to always consider their possible negative as well as positive implications. The fact is, however, that we have access to more images, videos and information on the net than ever before and thus the possibility of using them both in everyday life and in our artistic and pedagogical practice. Steyerl's concept of poor images ten years ago theoretically captured what is practically the case today: The use of poor images as artistic raw material has become a self-evident practice. This requires that art education takes a closer look at the poor image in order to critically negotiate its peculiarities and possibilities.

In 1997 the art historian and professor W. T. J. Mitchell famously asked: "What do pictures want?" (2005). He attributes a creative power to pictures—be it historical idols or cyborgs. For Mitchell, what pictures want is closely linked to how we treat them and what we expect from them:

> The question to ask of pictures from the standpoint of a poetics is not just what they mean or do but what they want - what claim they make upon us, and how we are to respond. Obviously, this question also requires us to ask what it is that we want from pictures. (Mitchell, 2005, p. XV)

By this question, Mitchell implies that we as viewers project desire onto the pictures. We tend to animate images and thus turn them into icons, i.e., cult images that embody certain values and ideas. Mitchell writes: "Poetry (as "making," or poiesis) is foundational to picturing." (Mitchell, 2005, p. XV). As a result, the picture becomes productive, which can be easily linked to today's online image production, for example on Instagram. One could, following Mitchell, speak of a poiesis of loss (loss of material, information, sources, resolution, etc.) that enables the images to become performative.

WHAT DO POOR IMAGES WANT (TO BE)?

Perhaps this leads to another question: What do poor images want? Or more precisely: What do poor images want to be? Assuming that we find ourselves in an *Internet State of Mind* (Archey & Chan, 2013), new types of images adapt to this condition. Internet images are part of an open and mobile visual field, "in which classes of images arise, consolidate, diverge and dissolve" (Heidenreich, 2005, p. 390; trans Schmidt). Poor images are one of those classes. They are no longer defined only by their (poor) resolution, nor by their content, but by the fact, that they are accessible online as numerous copies of themselves. The provenance of these images is no longer necessarily traceable, and their proliferation is accompanied by qualitative and aesthetic transformations. In contrast to a lousy black-and-white photocopy, these are *digital* transformations. Furthermore, the status as poor image is defined by its utilization—as soon as I screenshot a high-res rich image (e.g., from nationalgeographic.com) it becomes a poor one. The image, although now poor, reaches new realms of activity and distribution. Images acquire new performative potential and, as Hito Steyerl (2009) concludes in her essay, function as a "link to the present" (para. 29).

This supports my hypothesis that connects the poor image to a new performative pictorial practice (Sachs-Hombach & Schürmann, 2005). Once published on the net, the image is potentially inserted into a multitude of possible contexts. It becomes a potential starting point: not only as inspirational material but also as raw material for further processing by a large group of anonymous prosumers. They can reuse, crop, comment, reproduce, collage, expand them, and so on. At some point, depending on the specific context of the distribution, the original authorship can no longer necessarily be traced back. This also makes it necessary to discuss imagery in a different way than in pre-digital times. Internet images are constantly being shuffled around, they can appear as links in different places at different times and then seem to disappear again, whereby the duration and frequency of these actions can no longer be completely controlled by the original authors. Even images protected by copyright can be reproduced through screenshots and reappear as poorly resolved copies of the original. Following Mitchell (2005), they thus produce new meanings. Poor images in that sense are icons of the post-digital era: They

evoke pictorial agency and constantly transform during this process—qualitatively and quantitatively. The pictorial poorness turns into potential pedagogical richness.

@Poorimagearteducation—From Pictorial Poorness to Pedagogical Richness

In order to further explain this pedagogical potential of the poor images, I will present the following examples from my own academic teaching practice. In 2018, I started the Instagram-Account @poorimagearteducation with students of a seminar at Bern University of the Arts. One task was to create an art meme based on a work of art history. Two students used digital cut-outs from paintings by Hieronymus Bosch and created a speculative story about the painter's supposed inspiration for his fantastic figures in the picture. They re-enacted these figures with their own bodies and objects found at the university, which they quickly and intentionally assembled into new "bad" collages using Photoshop. Then they juxtaposed these with the corresponding cut-outs and added the following signature to the picture on Instagram (Fig. 12.3):

> Hieronymus Bosch was very eager to have the perfect models for his incredible artwork. Here we were lucky to find the ORIGINAL inspiration for 'Das jüngste Gericht', Ausschnitt aus der Mitteltafel, 1482, Akademie der Künste Wien. #art #boschprofessional #lastjudgement #north #rennaissance [sic]. [Photograph]. Instagram. https://www.instagram.com/p/Bi3 6xFZAgn1/

So, the students claim to be the original themselves, on which the art historical icon is based. In doing so, they intentionally use a trashy pictorial aesthetic and thus expose the traces of their working method. They transform the original picture into a poor image, but also make a poor image out of themselves. They enable a new perspective on the image and speculate about its creation beyond art historical knowledge (Figs. 12.4 and 12.5).

In a second example, the same students take a very close cut-out of a Bosch's Triptych of the Temptation of St. Anthony. It shows a detail of a jar with the leg of a dead animal sticking out of it. This image is juxtaposed with their supposedly "original" version consisting of a photograph of an electric water kettle, they found in the institute's kitchen. Behind

Fig. 12.3 Art Meme by Nina Kurth and Tina Odermatt, 2018. Poor Image Art Education [@poorimagearteducation]. (2018, May 17). Hieronymus Bosch was very eager to have the perfect models for his incredible artwork. Here we were lucky to find the ORIGINAL inspiration for "Das jüngste Gericht," Ausschnitt aus der Mitteltafel, 1482, Akademie der Künste Wien. #art #boschprofessional #lastjudgement #north #rennaissance [sic] [Photograph]. Instagram. https://www.instagram.com/p/Bi36xFZAgn1/

the device, a hand protrudes with the index and middle fingers extended upwards—similar to the peace sign. This gives the impression that this hand, just like the claw in Bosch's picture, would appear from the vessel.

The students operate with digital image processing techniques, social media language and humor. In doing so, they deliberately avoid creating an aesthetically perfect collage in order to point out the irony of their pictorial action. They do not care about perfect lighting, good composition or the best picture framing. Their photographs rather seem like testimonies of a performance or quick collage sketches. One can feel how quickly the pictures were taken. It seems as if an idea has immediately become an image. This is precisely where the appeal and richness of their visual examination lies. Seemingly naïve and careless, they include specific details of the "old" and "new" pictures in the post description,
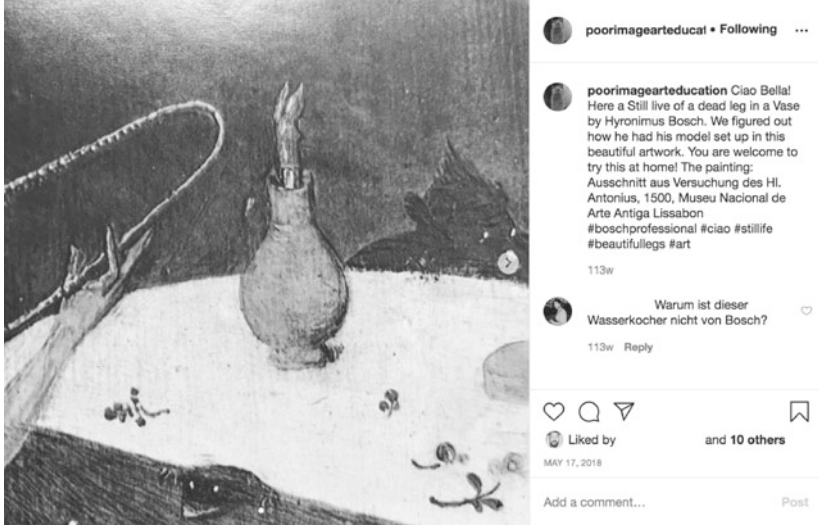
Fig. 12.4 Art-Meme by Nina Kurth and Tina Odermatt, 2018. Poor Image Art Education [@poorimagearteducation]. (2018, May 17). Ciao Bella! Here a Still live [sic] of a dead leg in a Vase by Hyronimus [sic] Bosch. We figured out how he had his model set up in this beautiful artwork. You are welcome to try this at home! The painting: Ausschnitt aus Versuchung des Hl. Antonius, 1500, Museu Nacional de Arte Antiga Lissabon #boschprofessional #ciao #stillife #beautifullegs #art [Photograph]. Instagram. https://www.instagram.com/p/Bi37aVXArAU/

which gives the works a certain amount of naturalness. However, they very cleverly and intentionally use this as a stylistic method.

In the second example, the hashtags #boschprofessional, #ciao, #still-llife, #beautifullegs and #art are used. #boschprofessional is repeated in all their memes; #ciao derives from the sticker that happens to be stuck on the kettle. The hashtags are both claims and also ironically included details from the pictures, which add to the Instagram posts' fun factor. The way the captures are written takes up a language that is read as typical for social media content. The students work with prompts and short, catchy sentences, such as: "Ciao Bella!" or "You are welcome to try this at home!" They are creating new visual narratives while combining existing art historical content with their own imagery and their own speculative storytelling.[6] In short, the students copied, reproduced, reused,

Fig. 12.5 Art-Meme by Nina Kurth and Tina Odermatt, 2018. Poor Image Art Education [@poorimagearteducation]. (2018, May 17). Ciao Bella! Here a Still live [sic] of a dead leg in a Vase by Hyronimus [sic] Bosch. We figured out how he had his model set up in this beautiful artwork. You are welcome to try this at home! The painting: Ausschnitt aus Versuchung des Hl. Antonius, 1500, Museu Nacional de Arte Antiga Lissabon #boschprofessional #ciao #stillife #beautifullegs #art [Photograph]. Instagram. https://www.instagram.com/p/Bi37aVXArAU/

appropriated, cut up, and re-enacted the picture. The original image was set in motion, became the new image and at the same time its supposed prototype, which opens up speculations on the levels of original, copy, idea and methods of image production. This example and the student's way of working with poor images, illustrates what I introduced above as a *new performative image practice*. They utilize the poiesis of loss by using poor images, creating new ones, and generating new narratives in a multilayered performative pictorial action that digitally mediates both the works of art history and the new creations.

In addition, a second student team created art memes through appropriation and recombination.[7] They too have constructed alternative, speculative narratives about the history of art. For their memes, they created the hashtag #whatmichelangeloate. They made a series of posts,

in which they are using image details of frescos and photographic reproductions of sculptures by renaissance artist Michelangelo Buonarotti. In one post we see a collage combining a detail of Michelangelo's famous Sistine Chapel ceiling frescos (*The Deluge*, detail, 1508) with a Dutch still life showing a sumptuous arrangement of food (Frans Snyders, *Still Life with Meat Basket*, around 1640). In the caption, they narrate the feeling of having had too much to eat: "Going home after eating at your italian [*sic*] grandmother's house, be like …".

Again, this type of sentence structure and the suggestion evoked by the open end is a characteristic Instagram caption. Like the first student group, they are using popular hashtags, such as #nofilter, #italiannana and #deathbychocolate. Interestingly, on a humorous level, this meme, just like the other examples, works without any prior knowledge of the original images used as templates. Although sources are given and it is implied that it has to do with Michelangelo, there is no further mediation of the image contents. What may be funny on a meme level, meaning to see apparently exhausted people after a feast, is rather tragic from an art historical point of view. The original picture illustrates a tragic biblical scene, in which people in vain fight for survival during the Great Flood.

This leads to some very important questions concerning art education. For although all the examples manage to convey art historical content with the help of poor images and a rethinking of their performative use, there are some problems. As already mentioned, the images work on a meme level; even without prior knowledge of art history or iconography. It is a frequent phenomenon that images of artworks appear on the internet without any indication of the source, or that they appear as memes without any comment. Although the students have provided the titles, authors and dates, the original contents of the images cannot be read without an iconographic education. The users potentially read them differently, which leads to their humorous potential. A critical mediation of art, for example at school, could link up with this and raise and discuss further questions. For example: Which scenes are represented here? How do we read certain figures, gestures, attitudes and objects depending on geographical, temporal, and cultural context? What kind of visual literacy is needed to read these images? Who are they made for? Can images in a digital context be misread at all? Or do they obtain a new meaning as poor images? After all, how many Instagram users even know who Bosch or Michelangelo are? And why and how can they have this knowledge? Do art memes encourage them to acquire it themselves?

A further step might be to address exactly such questions in class. In addition to the content of the images, captions, and hashtags can of course also be analyzed. Finally, it is also important to make the link to the present: What do we learn today from historical representations (of human beings)? Which art historical canon is reproduced by such kind of memes and to what extent is this problematic? (How) can we use Instagram and social media in order to create a new/an alternative canon? Which body norms do we see and which not? Which cultures are represented online and which are not? In summary—which physical and cultural ideals do we reproduce on Instagram and how is this reflected in our own image practice and self-representation on social media?

The Poor Image in Motion—Art Education

The poor image, as we have seen, is no longer just a copy in motion, but is transformative in itself. While images circulate on the internet, our present with its digital media possibilities is constantly moving, changing and refreshing itself:

> The Web, although certainly a powerful social tool, has seeped so deeply into the foundations of everyday life that it has collapsed understandings of the present in exchange for a constantly refreshing sequence of now's. (Kowalski, 2018, p. 26)

Analogously, the term poor image must adapt to those present conditions. As described earlier, poor images are digital, circulating internet images that can be accessed by users at any time. Through their scattering and movement through the internet, which is inextricably tied to constant transformation, they are performative, as elaborated above. The images develop agencies by proliferation and circulation through the online world. This is possible so easily nowadays due to their digital materiality, in the sense of "matter matters" (Barad, 2003, p. 801). Furthermore, they are constantly being processed by human and non-human actors (such as algorithms or filters) online, which leads to constant change: "any change to the image is also a change to the program; any change to the programming brings another image to the screen" (Plant, 1996, p. 193). Indeed, this performativity is multilayered and possible links to pictorial action are expanding like a network.

This is precisely why poor images are suitable both as raw material for contemporary artistic practices as well as objects for the critical theoretical reflection on art. While visual practices, media and technologies are currently rapidly developing, art education must also adapt to the post-digital time. Teachers have grown up and been educated with completely different media realities than their students. Vanessa Kowalski (2018) contrasts the much-cited and etymologically not unproblematic categories of *digital native* and *digital immigrant* with the term *digital naive*. She describes, how we all move across the cyberspace with a certain ignorance, lacking clearly defined rights and duties. One tends to take digital devices and the internet for granted, regularly consuming and producing web content. This naivety should be addressed by a critical mediation of art—especially at school. Acquiring visual literacy means being able to read, classify, and critically question visual phenomena of our time, such as digital images. For this reason, the poor image should be part of a radical (post-) digital artistic and mediating practice.

Art education in particular can be inspired by the poor image. This doesn't mean replacing traditional content, but offering the opportunity to react to a time dominated by rapidly changing visual content and applying the digital poiesis of loss. In her dissertation, Konstanze Schütze writes that images are "perceived and processed as omnipresent and almost omnipotent material" (Schütze, 2019, p. 133, trans. Schmidt) in the current debates about digital media. At the same time, the internet and the ongoing digitalization are shifting "aesthetic and social practices that are particularly influential measuring points for the arts and extremely useful for appropriating" (Schütze, 2019, p. 14, trans. Schmidt). The described societal changes open up new realms of agency through the described accessibility and malleability of images that have a huge pedagogical impact. Images can no longer be separated into categories of online and offline, but must be radically conceived under the post-digital conditions. As we have seen, the *poor image* may be poor in resolution but it is very rich in pedagogical and societal influence.

NOTES

1. See Omnicore Agency (https://www.omnicoreagency.com/instagram-statistics/) and Statista (https://www.statista.com/statistics/253577/number-of-monthly-active-instagram-users/).

2. I have been working with poor images since my master's degree at the Bern University of the Arts. In my master thesis this was done through artistic research. See https://www.arteducation.ch/de/projekte/alle_0/inszenierte-archive-das-arme-bild-154.html. Since 2017 I am pursuing the dissertation project "From the *poor image* to *poor images*" (working title) at the Academy of Fine Arts in Vienna.

3. "The term 'meme' was coined by Richard Dawkins in 1976 to describe small units of culture that spread from person to person by copying or imitation. […] In the vernacular discourse of netizens, the tag 'Internet meme' is commonly applied to describe the propagation of items such as jokes, rumors, videos, and websites from person to person via the Internet" (Shifman, 2014, p. 2). In contrast to its original meaning, today the term is often used for pictures "[…] whereas in memetics the unit of analysis itself is abstract and controversial, Internet users tend to ascribe the meme tag to observable audiovisual content, such as YouTube videos and humorous images." (Shifman, 2014, p. 13)

4. See Artnet https://news.artnet.com/market/art-basel-maurizio-cattelan-banana-memes-1726233.

5. See Facebook McDonald's [@mcd] (https://www.facebook.com/mcd/posts/10159244459202588) and Design Taxi (https://designtaxi.com/news/407841/Brands-Go-Bananas-Over-Art-Basel-s-Infamous-Display-With-Over-The-Top-Remakes/?fbclid=IwAR2bxsdE7sjZIoTMC4lIQk1Oh85B6T2V2KHD-WCgzUztttHiSRApl6nxmWk).

6. Speculative storytelling as in Donna Haraway's practice. See (Haraway, 2016).

7. Art-Meme by Nadja Knuchel and Isabelle Weber (https://www.instagram.com/p/Bi3_YwUgUta/). Caption: "Going home after eating at your italian [sic] grandmother's house, be like … #nofilter #whatmichelangeloate #italiannana #deathbychocolate serious informaition: 'Stillleben mit Fleischkorb' von Frans Snyders (17. Jahrhundert) 'The Deluge' (Detail) von Michelangelo, Sixtinische Kapelle (um 1508)" (Poor Image Art Education, 2018).

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How can we Create Educational Futures? Classroom and Pedagogical Practices Examples of Post-Digital and Post-Internet Art Education

Educating Things: Art Education Beyond the Individual in the Post-Digital

Annemarie Hahn

I am an art educator. As an art educator within an academic system, it is my profession to think about how people who are required to go to school get the skills they need in present and future societies. That sounds easy for now: Every country has curricula or similar guidelines that indicate what the responsible citizen is supposed to be able to do after school. That can, to a degree, be very helpful. It might; however, be that one essential aspect is not sufficiently taken into account in these guidelines: the current social condition in which we live, which many describe as post-digital. This is linked in part to a changed understanding of (individual) subjectivity. From the changed understanding of the subject, consequences for art pedagogical theory and practice under post-digital conditions can be derived.

My approach in this text will be to explore the question of concepts of subjectivity in post-digital societies on the basis of exhibition *Co-Workers—Le réseau comme artiste* (The Network as Artist), which took place at the Musée d'art moderne in Paris (MAM) in 2015–2016. I

A. Hahn (✉)
University of Cologne, Cologne, Germany

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understand exhibitions as complex structures of their time. The Co-Workers exhibition is particularly suitable here, especially since it offers indications on various levels that can be used to ask questions about contemporary subject constructions. To this end, I will use posthuman and neo-materialist theoretical approaches to think about subject conditions in the post-digital. Based on this approach, I propose, at least theoretically, solutions that may provide a seedbed for a contemporary art education beyond individual subjectivity.

Subjectivity In The Post-digital

A central aspect in the exploration of subjectivity under post-digital conditions is the relationship to the respective media-cultural conditions. Culture, understood as "the processes of social meaning – that is, the normative dimension of existence"—which are "explicitly or implicitly negotiated and realized by means of singular and collective activity" (Stalder 2016, p. 7), affects the respective understanding of subjectivity. Taking seriously that conceptions of subjectivity change with the respective mass media (Meyer & Jörissen, 2015), they also alter within the post-digital.

My proposal to think changed subjectivity and post-digitality together is to apply posthuman and neo-materialist theory to the field of art education in order to sketch an idea of subjectivity under post-digital conditions. The theoretical perspective that is to be made strong here is one that does not place the human subject at the center of the debate. Human subjects and human bodies become, with posthuman and neo-materialistic approaches, equal parts of social constitutions within the digital. When humans play a subordinate role in educational processes, this is to the benefit of nonhuman actors. In terms of pedagogical considerations, this means irritating essentialist frameworks beyond a Cartesian mind–body dualism (Hickey-Moody & Page, 2015) in order to look more closely and more strongly at the relationship between human and nonhuman actors than at the development of individual subjects (Reddington & Price, 2018). The turning away from the individual subject toward an entangled one is of high significance for art education in particular. This turning point can create new conditions and opportunities for (art) education that are appropriate to the recognition of various subject positions.

New materialist theories and their implicit posthumanist approaches allow us to understand the power relations between human and nonhuman actors and thus to make a change of perspective in order to think of subjectivity from the relations of humans and things (e.g., Barad2012; Braidotti, 2013; Tuin, 2018). These approaches criticize the anthropocentric assumption that matter is by nature passive and thus in itself meaningless (Gamble et al., 2019). They do not presuppose the separateness of anything. Thus, they also question the supposed spatial, ontological, and epistemological distinction that defines the human being as something different or even superior to things (Barad, 2012). The performative approach of the new materialism, especially in Barad's *agential realism*, consistently refuses to separate what lies outside of matter—including human meaning—which gives it meaning only in retrospect (Gamble et al., 2019). An important point that neo-materialistic approaches make in these matters is the understanding of action and intention. Action within these connections does not necessarily have to emanate from humans. Nonhuman agents are also capable of action. In Barad's understanding, matter is an active agent. Agency is not something someone has—it rather has to be understood as relational. "Or rather, matter is an intraactive becoming that is included and folded into its gradual becoming" (Barad, 2012, p. 41). Also, intentionality, which is also traditionally tight to human subjectivity gets another notion through the lens of agential realism. Barad understands intentionality as ascribed to a complex network of human and nonhuman agents, "including historically specific sets of material conditions that go beyond the traditional notion of the individual" (p. 23).

In art educational approaches, however, the traditional figure of the individual subject still plays a significant role. More or less explicitly, the focus is on the development and formation of strong (individual) subjects instead of on the relations between humans and things (Fuchs, 2016). With regard to inclusive education in the German art education field, this figure is strengthened by approaches that refer to the concept of *Künst-lerische Bildung* (artistic education) (Buschkühle, 2004; Engels, 2017). The figure of the self-creating artist serves here as a model, which is astonishing, especially since the traditional figure of the individual (artist) subject, has long since been questioned in post-structuralist approaches (Barthes1977; Foucault, 1969). To negotiate art education with the idea of individual subjectivity not only seems to me to be inappropriate to

the times, but also brings with it problems of individualization of failure (Peter & Waldschmidt, 2017) within normative school systems.

Against this background, neo-materialistic approaches become all the more relevant, especially since they seek to understand the capacity to act in the relations between human and nonhuman actors. Interestingly, most neo-materialistic and posthuman approaches do not address digitality specifically. For example, Barad's concept of agential realism (Barad, 2012) is not explicitly bound to digital conditions. It is not surprising, however, that they are becoming more popular under digital conditions, especially since traditional attributions under post-digital conditions start to falter, which are explicitly questioned in neo-materialist approaches.

In contemporary art, which explicitly deals with changed media-technological conditions, a changed image of (artistic) subjectivity appears, more as complex, relational subject formations than as individual ones (Herlitz & Zahn, 2019). In order to understand how these subjectivities are revealed, in the following I will take a closer look at settings within contemporary art in which these shifts become apparent. Through the lens of neo-materialist approaches, I will analyze the exhibition *Co-Workers—Le réseau comme artiste*. I choose exhibitions as research material because they are complex. They cannot be reduced to their components, such as the exhibits on display or the participating artists. Nor can they be reduced to the space in which they take place or to the idea that led to their realization. As the curator and art historian Elena Filipovic (2013) writes, they are also the relationships that exist between all these elements, the dramaturgy around them, and the discourse that frames them.

In order to trace the relationships between various human and nonhuman actors under post-digital conditions, I first look at the structures and the exhibits of the exhibition on the basis of its discourse material.[1] I will then take a closer look at the title of the exhibition, from which a clear shift in perspective regarding artistic production can be seen. This analysis is intended to question common concepts of subjectivity, in the hope of triggering derivations for art educational questions.

Looking on Co-workers. Network as Artist

Co-Workers—Le réseau comme artiste (The Network as Artist) took place at the Musée d'art moderne in Paris (MAM) in 2015–2016. Against the background of changed forms of communication through digitalization,

the exhibition examined the question of which changes artistic production is undergoing. It primarily showed positions whose practices are characterized more by networks and their exchange than by individual artistic creative processes and thus displaces the anthropocentric position of the (artists) subject. The shift from individual artistic positions to networked and interwoven structural settings can be described on at least three levels of the exhibition: (1) the organizational level, (2) the level of artistic production, and (3) the level of the title of the exhibition.

First Level: The Structures

The first level of the Co-Workers Exhibition that seems relevant to me here is its organizational structure. The exhibition was curated by three curators: Angeline Scherf, Toke Lykkeberg, and Jessica Castex. For the mise en scène of the exhibition, the DIS Collective, with its protagonists Lauren Boyle, Solomon Chase, Marco Roso, David Toro, Nick Scholl, Patrik Sandberg, and Samuel Adrian Massey was engaged. The exhibition took place at the MAM in Paris, which was the initiator and primary venue, albeit not the only one. Simultaneously, the *Bétonsalon Centre d'art et de recherche* hosted the co-exhibition *Co-Workers: Beyond Disaster,* curated by Mélanie Bouteloup and Garance Malivel, which included, in addition to the exhibition program, lectures, workshops, and other discursive formats to negotiate alternative perspectives of non-anthropocentric approaches.

A third partner was the Residency Program *89plus*, founded in 2014 by Hans Ulrich Obrist and Simon Castets—an international, multi-platform research project, investigating the generation of innovators born in or after 1989.[2] 89plus had been invited to initiate several 15-day solo and duo exhibitions as special interventions within the exhibition.

Already on the organizational level a collaborative structure becomes visible. But as well on a spatial and institutional level, several actors were collaboratively connected in the exhibition. Even from these superficial descriptions, the question arises whether this is an exhibition network, or whether the network itself is the exhibition.

Second Level: The Artworks

The center of the exhibition at the MAM is the installation of the DIS collective *The Island (KEN). KEN* is a fully functional hybrid of kitchen

and bathroom, equipped with several screens. The kitchen and bathroom are combined in one room, even in a furniture arrangement. The installation combines the social space of the kitchen and the private bathroom (DIS, 2015) in one object. An aesthetic similar to that of high-end stock photography is applied to an installation here—a kind of rendering of "real life" as Lauren Boyle (2016) describes it in an interview with Mike Meiré. The installation not only irritates traditional spatial categories, but also creates a space for discourse in the exhibition. It serves as a place for discussions and encounters. Furthermore, the video and performance program of the exhibition is shown on its screens. The work was created in cooperation and implementation with the company DORNBRACHT, a company for high-quality furnishing and living solutions, and was thus placed in a space both inside and outside the art system. The artistic positions shown in the exhibition[3] can each be understood as collaborative practices, based on networking, which are condensed in the exhibit and the exhibition space. The collaborative work, *The Island (KEN),* therefore seems to me to take on a reinforcing and mediating function in relation to the many other exhibited positions.

The following two examples of the exhibition illustrate this entanglement of network practices in very different but particularly explicit ways: the works by Mark Leckey and Cecile B. Evans. The framework offered by the DIS collective of the interweaving of the art and business worlds, and the resulting intertwined detachment from the art world as its own and the artist's image as a solitary entity, is shown on a visual level in Mark Leckey's work *Pearl Vision* (2012). The title already refers to the protagonist of the work: a snare drum by the renowned drum company Pearl. The drummer, of whom only the abdomen in red pants can be seen operating the snare drum becomes the object of the instrument. The highly technical functional mechanisms of the tool, the drums, are more in the center than the drummer. The drummer becomes the operator of the device. From minute 2 on, of the approx. 3-minutes video, the drummer's legs are undressed. His skin is reflected in the metal of the drum. They become one, before the snare drum floats detached from the human actor in free (black-backed, computer animated) space.

The video ends with the label of the manufacturer: Pearl Drum Vision Series: Next Level Perfection. Anais Lepage describes the relationship between the diverse actors in the work as "seen through the same prism" (Lepage, 2015b, p. 112, translation by AH). This would make them part of a central reflection on the relationship between human and machine. In

Mark Leckey's work, the constant interaction between humans and technology is described on a level that represents in a non-hierarchical way how human–nonhuman networks function.

The work by Cecile B. Evans goes one step further in terms of human–machine networks. *Working on what the heart wants* (2015) is a kind of beta version of the work *What the heart wants*, shown one year later at the 9th Berlin Biennale, also curated by the DIS collective. The work consists of a 3-channel installation and some artifacts reminiscent of the artist's studio. Through a chat visible on the screens, Evans is in exchange with various other actors in order to realize the final version of the artwork. The installation not only demonstrates the emergence of the new work, it is artistic work and process simultaneously. Evans searches via chat with the nickname *HEARTWANTS123D* for collaborators and distributes tasks within the framework of the artwork. The process of cooperation is exhibited.

In *What the heart wants*, a kind of autobiography of *HYPER*, a supra-individual fictitious "person," which constantly evolves as the amount of data increases, is narrated (Lepage, 2015a). In the *Working on* piece it becomes visible how different human and machinic actors are involved in the realization of *HYPER* across time axes (Casavecchia, 2016). This example shows how artistic production in digital conditions is subject to network logic. The artist is not the sole creator of the artwork, and the artwork is not a self-contained creation, but rather a version of an ongoing process. Nevertheless, the figure of the artist continues to exist and be present in the Co-Workers exhibition, specifically in her/his naming as an artist. But if the artist's name is no longer equivalent to the person who creates the work of art, how can its function be understood? How about understanding artist names not as an individual attribute, but rather in the logic of brands, as a proxy for the network that produces the artwork, and thus as a promise of quality?

In Cécile B. Evans' installation several variations of the artist name coexist, on different levels of the work. She uses the nickname HEART-WANTS123D rather than her real or artist name to communicate with her collaborators. Here, the project name is enriched by a 123d, which may refer to a variety of actors involved. And this examination is also reflected on a narrative level: the work *What the heart wants* and the *Working on* version show various human and machinic agents who, across time axes, are involved in the realization of a supra-individual fictitious "person" HYPER (Casavecchia, 2016). Cécile B. Evans thus examines

what it means to be human in the digital age and how machines define our humanity. *What the heart wants* does not offer us a narrative of and about individual subjects. The work is about a new form of subjectivity influenced by current technologies.

Still, using a name-giving artist as an equivalent for a project name could still be understood to mean that the artist represents the center of the respective project. The name of the exhibition "Co-Workers. Network as Artist," however, shows a shift in focus. Moving away from the centering of human agents toward the connections, the exhibition focuses on the network, and networks do not only consist of humans but several entangled human and nonhuman agents. This inevitably shifts the position of the artist within art production in favor of network structures. All the more obvious is the choice of title for the exhibition "Co-Workers. Network as artist," that brings me to the third aspect of the exhibition that is relevant to this argumentation.

Third Level: The Title

The aspect called the third level is probably the most important one, especially since it appears first on all discursive levels, in the various newsletters, on the homepage, on the catalogue, and on the billboards of the exhibition site itself: *Co-Workers. Network as artist*. The first part of the title "Co-Workers" addresses the workplaces that have become fluid. People work in Apple stores, Starbucks wi-fi areas, shopping malls, and airports. Both private and public life no longer contradicts work (DIS, 2015, p. 25). But with changed working conditions and with it the blurring of the boundaries between private and working space, the title is not sufficiently explained—nor is the exhibition. *Co-Workers* also discusses collaboration in artistic work and thus puts the traditional figure of the artist as an autonomous genius in the background in favor of common and shared artistic processes of work, in which several actors are involved.

The second part of the title *Network as Artist* determines the main focus of the exhibition. Remarkable here is not only the choice of the words, but their order. It is not the artist as network, but the network *as* artist. While the role of the artist with the formulation of the "artist as" has undergone some transformations, from the artist as producer (Benjamin, 1934) to the artist as consumer (Groys, 2003)—and various variants of these forms (Lykkeberg, 2015)—the exhibition with its title reverses this relationship. It turns the network into an acting subject

instead of a discussed *sujet* as Meyer describes in his chapter in this book and elsewhere (Meyer, 2015). The network that is not necessarily bound to human actors becomes the artist here. It is not the condition or result of art, but its subject.

If we understand networks as artists with the exhibition, the misunderstanding could arise that networks, like artists, have human characteristics, which is not necessarily the case. If we do not regard subjects as synonyms for human beings and understand humans exclusively not as individuals but as interwoven with their environment, might we ask ourselves, as the works of Leckey and Evans have shown, who or what constitutes this environment and what role it plays in the constitution of the subject? We might then have to ask similar questions to the specific figure of the artist subject.

According to the vocabulary of Actor-Network Theory (ANT), an actor is not defined by his or her characteristics, human abilities, or attributes (e.g., Latour, 2014). ANT largely avoids the concept of the subject in favor of the actor and treats human and nonhuman actors equally on the conceptual level. The basic idea of ANT is that actors do not exist a priori, but are only made into actors through the formation of networks (Peuker, 2010). Here, however, networks are not exclusively social networks that develop social actors (humans), but also material ones (things) and discursive artifacts. When Bruno Latour (2014), for example, speaks of "social," he means it as a relational term, that is as associations between heterogeneous components. The individual is then the result of many heterogeneous entanglements and processes. Actors, as well as individuals, are not preceding their networking, they are just produced by the networking process. It is thereby important that both humans and things, as well as discursive artifacts, are attributed the capacity to act in the sense of agency, even if the agency is not evenly distributed (Peuker, 2010).

Even though the title of the exhibition invites associations with ANT, the observed relational structures are better characterized by neo-materialistic approaches. Because the *agent* in *agential* realism , in the sense of *agency*, is not originally defined, it does not even exist, but is literally a mediator (Barad, 2012). That means, always depending on their circumstances and conditions, and these conditions change, as we have seen before, with media-technological shifts. To illustrate the entanglement of the various human and nonhuman agents and their processual nature with a different linguistic figure, Barad invents the term *intra-action*.

The argumentation that the use of the prefix "inter" in terms such as "interrelations" or "interactions" presupposes the prior existence of various isolated entities, emphasizes the concept of *intra-action* that entities only arise in relation. So there are no entities before the relation (Kleinman & Barad, 2012). The separation of subjects and objects only occurs through interruptions of intra-actions, so-called "*agential cuts*" (p. 88). One could say that this separation of subjects and objects such as artists and their works, and students and their works, only emerges within the networks—through agential cuts. Identities, for example, will not be thought of as primarily existing but as effects of process and performance that become meaningful within certain structures.

The idea of the individual subject is then always dependent on its intra-actions of human and nonhuman actors. But this cut certainly happens differently under different media-cultural conditions. Thus, the post-digital subject is different from subjectivity in other media-technological periods.

Network as Subject

The example of the *CoWorkers* exhibition, seen through neo-materialistic lenses, offers links to think subjectivity no longer from the individual, but from the network or respectively the intra-actions. Because the exhibition has negotiated a new understanding of the artist subject and artistic production since digitality, it is no longer about solitary artists who create an object or a work of art, but about interwoven practices in which human and nonhuman actors are equally involved.

With the main aspects of the new materialism (in Barad's sense) under post-digital conditions, I would like to take the following perspective on the Co-Workers exhibition. On the one hand, the exhibition is created under current media-cultural conditions. On the other hand, it does not arise through the artists' work on the works shown. Rather, both artists and artworks are only made into artists and artworks within the exhibition through intra-actions. It is therefore not the human subject that produces an external object. In that sense also other human and nonhuman actors as curators and exhibition spaces arise within the intra-actions. The dualism of subject and object is only produced by certain practices. With the exhibition "network as artist" exactly these performative acts of becoming art are exhibited and negotiable.

Thinking about *networks as artists*, the question arises as to who actually contributes to certain artistic productions in what quantity and also in what quality. What role do the human actors, the material actors, and the networks play? This is where the traditional view of the artist's subject begins to falter. Who or what is it that we understand as subject? Is it perhaps more productive to talk about the network as artists in order to question the power relations between people and things more precisely? These questions to the artist subject can be transferred experimentally to subjects of art education. For if we do not only project the ability to act into individual humans, but also into the relationships between humans and things, new parameters for pedagogical thinking arise.

The exhibition makes visible what is theoretically addressed in neo-materialistic approaches. Under post-digital conditions, we are dealing in exhibition practice with altered forms of subjectivity. The practices observable there are hardly to be described in dualistic categorizations such as subject and object. The post-digital as a current cultural condition allows us to examine culture for new understandings of bodies and subjects within the social. I consider this understanding particularly productive for art pedagogical thinking. It is important to recognize, first of all, that human subjects, human bodies and also their objects become what they are in current networks, such as the educational. As a result, we consider human agents as intentional in their actions detached from their relational structures. In doing so, the nonhuman agents are attributed a passive role in which their meaning is undermined. This leads to an exclusion thinking of singular human beings instead of the focus of exclusive structures.

If the subject of art changes through post-digital changes in subjectivation, concepts in art education must also be considered. To no longer think of subjects exclusively from the perspective of the human individual means, in the final consequence, that we, as art educators, must also include the nonhuman actors—the spaces, the things—in art educational concepts, and not just as passive features, but as active participants. Not only people, but also things must be educated, so that art education in the post-digital era can prosper in a contemporary manner. This means looking beyond the individual subject, observing relations of people to other people and things, and doing so on an equal footing, and from this conceptualizing art education. For if we no longer consider the human being as capable and normative, but always think in relation to nonhuman agents, other perspectives open up and with the other potentials for action—and thus agency.

Notes

1. Unfortunately, the exhibition catalogue (Abu Abdallah et al., 2015), which was gratefully made available by the MAM as a PDF for research purposes, presents only a few of these positions explicitly, which is interesting and relevant from a discourse-theoretical point of view, but therefore allows only a selective view of the relations of the exhibition, that is, of my interpretation of what the exhibition organizers show as valuable for communication and archiving.
2. https://www.89plus.com/about/.
3. namely, 89plus, Aids-3D, Sarah Abu Abdallah & Abdullah Al-Mutairi, Ed Atkins, Trisha Baga, Darja Bajagić, Ian Cheng, DIS, Douglas Coupland, David Douard, Cécile B. Evans, Valia Fetisov, GCC, Parker Ito, Clémence de La Tour du Pin & Agatha Valkyrie Ice (Dorota Gaweda, Egle Kulbokaite), Mark Leckey, Shawn Maximo, Nøne Futbol Club, Christopher Kulendran Thomas, Aude Pariset & Juliette Bonneviot, Pin-Up, Rachel Rose, Bunny Rogers, Bogosi Sekhukhuni & Tabita Rezaire, Timur Si-Qin, Jasper Spicero, Hito Steyerl, and Ryan Trecartin.

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Toward an Anti-Racist and Anti-Colonial Post-Internet Curriculum in Digital Art Education

Timothy J. Smith

This chapter explores the ways in which teaching post-internet in digital art curriculum can be reframed through the lenses of anti-racist and anti-colonial approaches. Practices and discourses around art and technology have suffered from a lack of inclusion and equity, which extends from the racist and colonial history that undergirds the arts and education (Drew, 2015; Valentine, 2015). Anti-racist and anti-colonial approaches offer a framework for critically analyzing identity, ideology, and power relations through art education, and for fostering active socio-political engagement in the world through transformative artist practices. This article bridges this framework with post-internet art in digital art curriculum through an examination of the work of artist Tabita Rezaire, whose practice analyzes White supremacy and colonialism. As such, this article endeavors to build a pedagogical foundation toward teaching post-internet in digital art

T. J. Smith (✉)
University Wide Art Studies, Aalto University, Espoo, Finland
e-mail: tim.smith@aalto.fi

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curriculum within the discourses and practices of anti-racism and anti-colonialism. It is primarily presented through a radical restructuring of my own curriculum development as a teacher of introductory university courses focusing on digital art. While this chapter discusses my experience with university teaching, the overall pedagogical framework is intended to be presented in a way that allows its concepts and discourses to be adapted to various educational settings, from K-12 education to upper level university special topics courses.

The Problem of Mainstream Post-Internet Art

Quaranta (2015) positions post-internet discourse in contemporary art emerging in the late 2000s as "a cultural reference, and an environment, rather than a medium" (p. 125). Archey and Peckham (2014) situate post-internet artistic practice as "an internet state of mind [which] describes an art object created with a consciousness of the networks within which it exists, from conception and production to dissemination and reception" (p. 8). Drew (2015) similarly discusses internet and digital culture as opening a new landscape of art, but significantly frames it within a context of social justice:

> As we embark on the new landscape, it's imperative that we labor to create a new biology that is as diverse and equitable as possible. I hope their words help spark conversations about representation, erasure, and the future of digital art. (para. 5)

This assessment on the landscape of internet and digital culture in art is echoed by many commenters who are critical of mainstream post-internet art—albeit with a less hopeful prognosis—citing it as a marketable aesthetic style produced by artists from mostly similar geographic and socio-economic backgrounds. As Chan (2015) observes, "the art world is a white frat house, and most post-internet discussion has been between the academically clustered internet art communities in North America and Western Europe" (p. 120). Post-internet artists tend to share a sensibility that Quaintance (2015) elaborates as "the intellectual construct of a homogeneous in-group—mostly concentrated in the narrow western geographical bases of London, New York and Berlin—whose members share extremely similar linguistic frameworks, values, lifestyles, behavioral norms and class affiliations" (p. 7). These observations coincide with what

I have viewed as crucially lacking on the whole in the most prevalent responses from artists to the impact of internet and network cultures.

Much of the aesthetic of post-internet art is steeped in nostalgia of youthful online surfing—particularly of 1990s graphics and software such as MS Paint and Geocities web design—recalling the luxury of time spent exploring the uncharted World Wide Web as children of the late twentieth century. Now, as adults, post-internet artists ride that nostalgia as it reflects the tendency (and inherent privilege) to indulge in the banality of browsing online in the twenty-first century. As Droitcour (2014a) suggests, many post-internet artists "begin with the proposition that the phenomena of their world are boring and banal, who begin with an exasperated sigh" (para. 10). In this sense, such artistic practices are often less about grappling with the socio-political implications of the post-internet conditionand more about presenting superficial and self-referential explorations of the experience of white, Western, middle-class artists in the internet age (Blas, 2014). Another observation of post-internet art is in its appeal to the art market through its ennui-laden aesthetic style that is presented more often as an art world inside joke, or as Droitcour (2014b) frames it, "art about the presentation of art" (p. 118). Blas (2014) similarly articulates what makes post-internet art appealing to the art market is that "its neutral frame provides a safe, hollow concept to fill, which corrupts the very political potential of aesthetics, as what can intervene and shift conditions of life towards equality, not capital" (p. 88).

While I certainly agree with these critiques focusing on how much of the post-internet art that has gained mainstream art market attention generally suffers from these patterns of what Quaintance (2015) refers to as "commercialism, juvenilia, narcissism, superficiality, sociopathy and rampant objectification" (p. 7), I find the narrow positioning of post-internet art in these commentaries also exposes some of the limitations of these arguments. The attributes of the artists that are often the target of these critiques are the chosen few who come up repeatedly as quintessential representatives of mainstream post-internet art. My intention is to look beyond the select few art-world-approved exemplars of post-internet artists to locate viable socio-political potential of artists creating work responding to the internet and network cultures. In other words, what is needed is an expansion of the discussion of post-internet art that includes narratives beyond those that are overwhelmingly told from the perspectives of artists who are White, Western, upper-middle-class, and identify as male.

I contend that to deploy its potential as a platform for reconsidering the canon of digital art and art education, post-internet can be reframed to become not only more inclusive, but the socio-political themes raised through its expansion can also generate openings toward that new landscape of network and digital cultures in art that actively engages anti-racist and anti-colonial perspectives. Furthermore, I contend that this discourse must take shape through those who are educating contemporary artists and art educators in the post-internet age—particularly in teaching digital art. This starts with a reframing of curriculum development that approaches teaching post-internet in digital art through the lens of anti-racist and anti-colonial approaches.

REFLECTIONS ON DIGITAL ART CURRICULUM DEVELOPMENT

One of the primary reasons as to why I have felt compelled to write this article stems from a reflective inquiry into my own biases as an educator. I have taught art at the university level for the past decade, with a primary focus on art foundations and introductory general education courses in digital art. The two significant components of the curriculum of these courses have been (1) to teach basic skills and techniques of digital software and hardware, and (2) to articulate and cultivate critical discussion surrounding the uses of digital technology through historical and contemporary art and culture. While much could be said about the methods of teaching the actual skills and techniques of digital tools, due to the limitations of the scope of this article, I will focus strictly on the critical discussion component of my course curriculum.

As I look back at a snapshot of my digital art curriculum when I first developed it ten years ago, I tallied 62 artists and theorists that were mentioned as part of my lectures or as part of the texts and online resources that I assigned to the students for the first two semesters. Of that total, ten were women (16%); four were artists of color (6%); six were based in countries outside of the United States or Western Europe (10%); and two were based in the Global South (3%). While the artists and authors that I discussed with my classes were derived from a recommended list of artists and texts from the department, I was ultimately responsible for the selections that I included in my curriculum. Significantly, this also echoed a very similar pattern of exclusion in prominent survey texts focusing on digital art and new media art (Greene, 2004;

Paul, 2003; Rush, 2005; Tribe & Jana, 2006). It speaks to the significance of mainstream practices and discourses within art and technology as overwhelmingly exclusive to the study of White, Western, mostly male-identifying artists and scholars.

Through my dedication to teaching visual culture art education (Duncum 2003; Freedman, 2003; Tavin, 2003) and critical media literacy (Kellner & Share, 2005), there have always been at least some sections in my digital art curriculum that have explored and analyzed race. However, I very rarely turned to artists of color as examples from new media and digital art, specifically because to my knowledge they *did not exist* in the mainstream canon of these genres. Instead when discussing race in my digital arts courses, I would focus on images and videos from the media and popular culture to analyze with the students in class. As a point of contrast, when we discussed topics such as gender or climate change in my digital art courses, I always had examples of feminist artists and environmental artists that I could turn to from the mainstream new media and digital art canon. Without examples of the practices of artists of color, I was bypassing the very voices that serve as exemplars to students as originators and navigators of possible futures.

In the summer of 2014, I was deeply affected as I witnessed the mainstream rise of the Black Lives Matter movement, and I was compelled to delve deeper into understanding the long history of systematic racism and racially motivated violence against Black people in the United States. I was concurrently motivated to overhaul my digital art curriculum beginning that autumn to include more nuanced and complex discussions about race. However, as race began to play a more prominent role in my curriculum development, it became apparent that there was a glaring lack of representation of artists of color in my course content. This led me to consider other gaps in my curriculum development, particularly regarding the lack of inclusion of artists from the Global South. In 2016, I began teaching at Aalto University in Finland, where it was imperative for me to expand my curriculum development to include artists and themes from the Nordic region. I realized that if I could put so much work into broadening my curriculum to include Nordic artists simply because I was teaching in a Nordic country, I could certainly afford to put the time and effort into expanding content to include artists and themes from the Global South. Incidentally, this global shift in my digital art curriculum development was bolstered through enriching and rewarding conversations with the many international students at Aalto University who had

urged me to engage non-Western epistemologies, art canons, and artist practices in my course offerings.

From a personal perspective, this process of change has required me to analyze my own blind spots over the past decade as I consistently avoided discussing and analyzing the work of artists of color or artists from the Global South in my digital art curriculum. As I examine the ways in which I continued to reinforce the status quo, I recall that my intention for doing so was a matter of seeking to avoid complicating the digital art canon. My rationale at the time was that since I was a White teacher in the United States, I figured it was not up to me to attempt to challenge the homogenous list of artists and theorists that were being handed down to me from my professors and prominent art historians. This glaringly demonstrates my privilege of actually being afforded the choice to avoid confronting racism and colonialism in the art canon. It exposes the violence of White supremacy and Eurocentrism that I have upheld through exclusion and negation of the voices of marginalized artists in developing my curriculum for digital art. It was harmful enough that I felt that it wasn't important for me to personally engage in self-reflective analysis of my curriculum development. What made it far more damaging was that my inaction affected the learning of a new generation of student-artists who were implicitly being taught that these topics didn't have to matter for them either. Because the mainstream historical and contemporary discourses of digital and new media art have been almost entirely focused on White, Western, male-identifying artists, and scholars, it requires a deeper dive for teachers to move beyond the accepted survey texts and established curricula. Several years into maintaining that status quo of negation through my teaching of digital art, it became clear that it was vital for me to do my part in actively taking steps to reconcile my teaching of these courses that had previously side-stepped social justice and critical methodologies.

Decentering the Art and Technology Canon

In my restructured curriculum development, anti-racist and anti-colonial approaches now serve as the core framework for teaching post-internet in digital art courses. Colonialism exists today through the continual self-validation of White and Eurocentric knowledge and histories as the universal system of knowledge production and maintenance (Mignolo, 2000). In this sense, Western knowledge is perceived not just as the

dominant system of knowledge, but it is presented as the only system of knowledge, which thus invalidates and excludes histories, narratives, and lived experiences of those who do not fit into its regime.

Global White supremacy is inherently entwined with the continuing legacy of Eurocentrism, and is methodically enacted through the social construction of race as a tool of power and control (Sefa Dei & McDermott, 2014). Harris (1993) articulated the concept of White property as the unquestioned claim of ownership and domination through the exploitation and erasure of Black people, Indigenous people, and people of color (BIPOC): "Whites have come to expect and rely on these benefits, and over time these expectations have been affirmed, legitimated, and protected by the law" (p. 1713). As such, this notion of White property thoroughly pervades the political, economic, legal, and educational systems in societies afflicted by colonialism and White supremacy. Educational institutions perpetuate racial domination through a two-pronged approach of oppression: first, through rendering invisible the history and continued policies and structures of colonial violence and racism; and second, through the exclusion and effacement of BIPOC histories and lived experiences (De Lissovoy & Brown, 2013).

Anti-racist and anti-colonial discourses and practices challenge the assumed universalization of White and Eurocentric knowledge production. They mobilize as practices of resistance to oppressive colonial and racist power relations, and embrace local and situated knowledges that serve as counter-narratives to the dominant White and Eurocentric regimes of knowledge. In the context of art education, one crucial way in which anti-racist and anti-colonial approaches influence curriculum development is by qualitatively shifting the Western art canon toward transnational perspectives, and is particularly inclusive in its attention to the practices of BIPOC artists. Art history and art education often perpetuate the curricular oppression that excludes non-White and non-Western narratives, or renders them to the margins (Iskin, 2017). Gayed and Angus (2018) point to decentering as a curricular positioning that disrupts the Eurocentric art canon as to "determine a historical narrative that does not 'other' non-Western art as periphery, derivative, or reduce it to an addendum to dominant history" (p. 232).

Decentering the canon is a qualitative process insofar as it moves beyond a simple additive insertion of BIPOC artists into the curriculum. An "additive approach" to disrupting the art canon fails to address how White supremacy and colonialism is embedded in the arts and art

education (Knight, 2006a, p. 41). Instead, curriculum development must engage at the outset in what Knight (2006a) calls a "transformational approach" that moves beyond a quantitative inclusion of content, such that "the art teacher seeks to change the structure of the curriculum to enable students to view matters from the perspectives of 'the Other'" (p. 41). In this form of teaching and learning, inclusion is not a token gesture toward a liberal conception of diversity, such as devoting an isolated week or month for including BIPOC artists, or discussing their work without addressing underlying structural contexts of White supremacy and colonialism in the arts and art education. Rather, as Acuff (2013) argues, the curriculum itself is qualitatively changed when the content of the course involves critical discussion and reflection that focuses on creating conditions through which students have "questioned power structures, identified personal biases, promoted equity, and learned empathy" (p. 83).

While it is vital to open up candid, critical dialogue about racism and colonialism in the classroom, this is only a first step toward critical transformation for students. Here, Knight's (2006a) "social action approach" (p. 41) to curriculum development becomes essential in activating a critical transformational practice, insofar as it expands on qualitatively changing the structure of curriculum by focusing on furthering the "attitudes, knowledge, and skills necessary to participate in social change." (p. 41). As such, the intention for decentering the canon moves beyond solely engaging in critical discussions in the classroom, and toward the overarching goal of cultivating a critical transformation in students' engagement *outside* of the classroom, particularly through the active deployment of criticality their practices as artists in the world.

The social action approach puts the curriculum to work by opening spaces for students to engage in a deep-dive of self-reflection by extending their critical position toward activating a transformational artistic practice. Anti-racist and anti-colonial methods play pivotal roles in this process, as they embolden students to reckon with questions of power relations, identity, and privilege imbued in the act and process of transformational artmaking. They offer pause for students to consider questions such as: "what is the content and subject matter being conveyed through my work? Is that content and subject matter perpetuating white supremacist and colonial narratives, or is it actively occupying an anti-racist and anti-colonial critical position?".

When working with White, Western students in cultivating a transformational artist practice, the focus should not solely dwell on negation in one's practice. Such negation would include avoiding appropriating BIPOC visual culture, and particularly images depicting BIPOC violence and suffering (Black, 2017). One of the objectives of deploying anti-racist and anti-colonial methods in art education is to facilitate the cultivation of critical tools with which students are able to proactively recognize and understand why the misguided formal and thematic choices some artists make in their artist practice, such as cultural appropriation, perpetuate racial and colonial violence. Rather than being preoccupied with avoiding content and subject matter, the intention of both the transformational approach and social action approach to curriculum development is to build a learning environment in which an affirmative engagement with artmaking emerges that actively expresses an anti-racist and anti-colonial critical position. One way to explore how this critical engagement through artmaking could take form in an artist practice is to examine the ways in which artists have activated these conceptual underpinnings through their work. The next section of this article will explore an example of an artist who demonstrates this mobilization of an anti-racist and anti-colonial positioning into an active mode of critique through a sustained artist practice.

Anti-Racist and Anti-Colonial Decentering in Tabita Rezaire's Artist Practice

One of the many artists I have been working into teaching post-internet in my restructured digital art curriculum is French Guyana-based Tabita Rezaire, whose video and virtual reality artworks tap into the politics of technology and online practices, and serve as modes of anti-racist and anti-colonial methods for education and decentering the canon of Western hegemonic narratives. Her work, *Sorry for Real* (2015), depicts a hovering virtual iPhone displaying its caller ID as "Western World," in which an ongoing (one-sided) call depicts a computerized, American-accented, male voice offering a series of apologies on behalf of the West. The 17-min-long monologue systematically articulates the myriad ways in which the tenets of colonialism and White supremacy have subjugated, exploited, and oppressed the societies, cultures, and lands of the Global South over the centuries, and continue to do so in the contemporary world. Throughout the monologue, a series of SMS dialogue text bubbles

pop up around the floating iPhone as a running commentary between two women who are highly skeptical of the intentions of the caller: "????… WTF… SOME KIND OF WESTERN SAVIOUR SHIT?".

The caller's words appear to depict such a keen hyper-awareness of his own White supremacy that it feels implausible that it could be spoken from a White man from the West, which they are not; the words of the monologue given by Western World are conceived by Rezaire. This is why the concurrent SMS text dialogue portrays such suspicion and derision toward the apologies being offered by Western World, to the point where the text commentary seems as if one woman is warning the other about an untrustworthy lover: "He's playing you babe!… Watch out for their side-eye agenda! im telling u! (sic)!" But they are both aware that it is not just a scheming boyfriend on the other end of the phone. Instead it is the monotone, matter of fact voice of a man appearing to say all the right things in his apology for the centuries of atrocities on behalf of the West, which the participants in the SMS chat are able to clearly see through: "THANKS FOR THE SPEECH BUT … WE ARE BEYOND THE NEED FOR AN APOLOGY… WE NEED YOU TO STOP BEING ENTITLED!!" Here Rezaire's work clearly speaks to the lip-service, in which an acknowledgment of wrongs and an apology is considered to be enough for the West, but crucially the status quo of White supremacist and colonialist legacies persists.

Sorry for Real (2015) is an example of an artist decentering White supremacist and colonial hegemony. Rezaire achieves this by rendering the voice of the Western World inert within the interface of the video. As the monotone voice drones on throughout the phone call, its uncon-cerned tone and cadence is in effect drowned out by the compelling incredulity of the women's SMS chat and the heightened visuality of their animated text bubbles eagerly populating around the floating iPhone. Rezaire's choice to use a computerized voice for the Western World creates a distancing effect for the viewer. The resonance of this voice evokes a disingenuous politician reading a speech that he did not write, or did not even consider reading before delivering it. Through Rezaire's formal choice in presenting such a striking tonal contrast between the monologue and the text dialogue, the video's interface draws the atten-tion of the viewer toward the urgent and distrustful text bubbles, while relegating the prosaic and faithless apology from Western World to the margins.

Rezaire's multi-modal digital artworks demonstrate the tremendous potential for engagement between anti-racist and anti-colonial methodologies in education and post-internet practices. Martini (2017) highlights the artistic practice of Rezaire, among other post-internet artists in her blog titled *Decolonizing Technology: A Reading List*. Working within the premise of pervasive digital colonialism, the blog's introduction offers a mapping toward approaching technology as a mode of decolonial resistance, anchored by the question: "what does it mean to think about digital technology as a tool to resist and fight against colonial inequality and erasure" (Martini, 2017, para. 19). This contains the resources of a decolonial reading list spanning seminal texts, such as Frantz Fanon's *The Wretched of the Earth* (1961), as well as contemporary collections such as *Worlds & Knowledges Otherwise (WKO)* (2004), which is an online dossier of essays hosted by Duke University's Center for Global Studies and the Humanities. One of the WKO collections is titled *Decolonizing the Digital/Digital Decolonization*, which includes work from anti-racist and anti-colonial artists and writers that "elucidate how the terms of engagement are being defined, the borders being constructed or crossed, as discursive arrangements of the digital world are contested and refigured" (World & Knowledges Otherwise, 2009, para. 1).

In an introductory essay for the first volume of *Decolonizing the Digital/Digital Decolonization*, Benfield (2017) notes the fluid status of the digital, in which "multiple sites of criss-crossing colonial wounds, film, video and new media producers, including artists, scholars, community organizers and popular educators, are creating inter-textual and inter-cultural works that reorganize the geopolitics of knowledge" (para. 5). In this sense, as Benfield (2017) articulates, the intersection of anti-racist, anti-colonial, and digital art practices (including post-internet art), becomes a "site of an/other thinking" (para. 3), following Mignolo's (2000) assertion that decoloniality is a site that can "change the terms, not just the content of the conversation" (p. 70).

Rezaire's overall artist practice is an ideal entry point into entwining these ideas of anti-racist and anti-colonial methods with building critical discourses in the digital art classroom. Her artistic vision extends this decolonial move to change the terms of the conversation through her depiction of the colonial line that demarcates the global digital divide, which in her words, "reproduces oppression and inequality; from racism, misogyny and homophobia to economic and racial exclusion" (cited in King, 2018, para. 17). This includes the physical infrastructure of the

internet, as explored in her video work *Deep Down Tidal* (2017), which foregrounds the physical fiber-optic cables laid under the Atlantic Ocean along the same passage as the transatlantic slave trade route. As Rezaire asserts, "the architecture of the internet is based on pain" (cited in King, 2018, para. 16). In response to this pain, she turns to art as a "healing technology," which opens up a "way to 'unlearn': to peel off the layers of this coercive history" (cited in King, 2018, para. 12). In this sense, Rezaire's own unlearning through art as a form of healing can become a powerful beacon for not only decentering the dominant canons of art and technology, but also as a mode of unlearning cultivated through decentering curriculum that actively critiques White supremacist and Eurocentric ideology, identity, and power relations.

Deep Down Tidal (2017) offers a vehicle for Rezaire to raise vital questions about the illusion of the narrative of digital technology and network culture as a single universal cultural condition in which post-internet discourses only articulate its effects on economically wealthy societies. This is often demonstrated by what Sundberg (2014) refers to as "universalizing performances" (p. 36) that are always silent about the "loci of enunciation" (Mignolo, 2009, p. 161) when referring to generalizing narratives framed as having an effect on "us." When post-internet discourse is positioned this way, it is silent in acknowledging that it speaks only to particular cultural perspectives. Only 51.2% of the world has logged onto the internet, and in lower- and middle-income societies that do have internet access, 57% of the population log on only through handheld mobile devices (State of Broadband Report, 2019, p. 2). This is due to the extraordinary rates for even the slowest broadband speeds in low income economies—often as much as 12 times more expensive per month than in the United States (Ward, 2011). Even more portentous is the effect of the lack of internet accessibility and control that Kwet (2019) refers to as "digital colonialism," which continues the Eurocentric colonial legacy as a "structural form of domination exercised through the centralized ownership and control of the three core pillars of the digital ecosystem: software, hardware, and network connectivity" (p. 4). In this respect, foreign governments and corporations build the infrastructure and digital technology that "allows them to accumulate profits from revenues derived from rent (in the form of intellectual property or access to infrastructure) and surveillance (in the form of Big Data)" (Kwet, 2019, p. 8).

In my restructured digital art curriculum, all of the above threads of inquiry that arise when examining Rezaire's work serve as critical resources for deep-dive discussions in the classroom, and are further bolstered by assigned passages from select readings on the themes of race, colonialism, technology, and network cultures. Specifically, Benjamin (2019a, b), Everett (2009), Nakamura and Chow-White (2012), Shifman (2014), and Umoja et al. (2012) offer key interdisciplinary understandings beyond the arts into how digital technologies generate assumptions and perceptions about race. This weaving of different forms of textual resources not only serves to foster more complex, critical readings into locating power structures and personal biases, but it also highlights the flexibility of pedagogical materials in the post-internet age. In this respect, textual resources utilized in course curricula can refer to a variety of digital materials such as artists' websites and social media feeds, online videos, art journals and magazines, academic journal PDFs, and eBooks. Building a curriculum that critically engages the content and subject matter of the work of an artist like Rezaire, and many other artists working toward deconstructing the power relations embedded in technology and digital culture, offers insight into the ways that artists challenge and traverse dominant narratives through post-internet art practices. Cultivating a curriculum that is qualitatively restructured with anti-racist and anti-colonial methods throughout demonstrates a dedication toward disrupting hegemonic messages in media, art, and culture, and generates the fluid groundwork for approaching justice-based narratives through art and digital network cultures.

CONCLUSION

In her essay "Whiteness Must Undo Itself to Make Way for the Truly Radical Turn in Contemporary Culture," artist Xaviera Simmons (2019) calls for a paradigm shift toward what she frames as "white radicality" in the arts: "If radical change is truly desired in such a place, then those who have the bounty of privilege should shoulder the greater risk, and should be willing to transform, divest of or spend such privilege by all methods available" (para. 3). Similarly, Wolfgang (2019) asserts that educators must seize the

opportunity to acknowledge how legacies of racism and violence continue to deeply impact curriculum and pedagogy in the arts; to make space where

we have failed in the past; and to reconsider pedagogy as a step toward reparation or mitigating the effects of white supremacy in Art Education on our students, our colleagues, and our communities. (p. 15)

In the context of this chapter, this transformative push begins with how digital art curriculum is presented to student artists and art educators. As a White, male educator from the West, I endeavor to take up Simmons' (2019) insistence on white radicality in the arts, and I commit to Wolfgang's (2019) charge for art education as a space for dismantling White supremacy.

The deployment of anti-racist and anti-colonial approaches throughout a qualitatively restructured digital art curriculum moves beyond a simplistic additive inclusion of content, and actively engages critical analysis and reflection by dissecting relations of power and ideology inherent in digital technology and network cultures. This framework has allowed me to take crucial steps toward correcting my own previous failures of adhering to inequitable curriculum development in my digital art courses. More importantly, it has forced me to reckon with how I uphold my own White supremacist and Eurocentric practices as a teacher, and how I must actively work toward the ongoing process of committing to anti-racist and anti-colonial approaches through teaching and learning. It follows Knight's (2006b) appeal for an art education that is focused as much on critical self-reflection of educators as it is for the students: "An art teacher who is able to deconstruct his or her own Whiteness is in a better position to challenge Eurocentric perspectives and dismantle White privilege" (p. 328). This process of cultivating anti-racist and anti-colonial teacher education is paramount for teachers to lead by example in the classroom, which builds the framework for students to generate their own critical consciousness in learning and artmaking through a digital art curriculum.

In order to create the conditions for reframing digital art curriculum toward anti-racist and anti-colonial methods, the historical and contemporary canon of art and technology must be reevaluated to decenter dominant practices and narratives in art and art education. Despite its relative lack of political engagement in its mainstream form, post-internet art discourse inherently carries the potential to open such counter-hegemonic narratives and practices. The incorporation of self-learning, crowdsourcing, and disruptive modes of production, post-production, distribution, and circulation are primary to the practices of post-internet art, and these modes have the capacity to be reoriented to become tools

for societal change (Smith, 2018, 2020). As a cultural condition, post-internet addresses a wide variety of societal and technological themes ranging from the construction of subjectivity and performance of identity, to surveillance and corporate control (Clark, 2018). As such, these themes are also ripe for decentering hegemonic practices and narratives by reframing post-internet art and its discourses toward anti-racist and anti-colonial methods. This lens implores art educators to acknowledge and address deeper critical contexts by confronting head on the Whiteness and Eurocentrism of the canon art and technology and post-internet art, thus laying the groundwork for opening critical transformative practices of teaching, learning, and artmaking in digital art curriculum.

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Embracing Doubt: Teaching in a Post-digital Age

Jan G. Grünwald

"For humans, a state of momentary confusion offers not just frustration but an opening." (Rushkoff, 2019, p. 135)

As already indicated in the title, doubt is an important companion in art education which can certainly be considered productive but is unfortunately often perceived as inhibiting or disruptive (McLaughlin, 2016; Sofatutor Magazin, 2017). This chapter is about a theoretical and educational positioning within art pedagogy, initiated by my own experiences in teaching in different schools and universities, in which I try to indicate options to what extent the topic of doubt can be used productively in the classroom, as well as affirming the uncontrollability of educational processes , and to find appropriate ways to teach in the post-digital age. I will also attempt to show how contemporary aesthetic processes and phenomena like *glitch* can be used to utilize confusion and embrace the possibility of failure, as well as experimenting with social media as a way to mediate and communicate.

J. G. Grünwald (✉)
University Mozarteum, Innsbruck, Austria
e-mail: jan@gruenwald.name

Doubt has utopian potential, because it often implies a longing for a different situation (Campbell, 2012; Jha, 2018) and where do we—as art teachers, art educators, researchers, and students—need to believe in utopia if not in education? Here doubt eludes any educational policy or any other kind of logic of exploitation, because in the end no concrete result can be assumed. What is evident, however, is that doubt thinks beyond the present and questions it critically. Thus, I begin with a doubt in order to do justice to the investigation of an art educational position, which is able to deal with the constant changes within the post-digital age. For me, as a pedagogue, it is important to make use of, and to be able to present, concrete situations in which doubt—when looked at in a positive manner—can be used as a means to improve and grow. If we want to create a situation, in which we do justice to the future education of our students, we cannot keep reproducing the power structures of the current system, but instead we have to acknowledge the fact that we—as teachers—just may not know more about our present or future condition than our students and that traditional role models and canons won´t be helping much as well. We have to embrace a situation that does justice to our thinking and behavior, which is "messy, confusing, or anomalous" and is, at the same time, "our greatest strength and our greatest defense" against any kind prefabricated approaches (Rushkoff, 2019, p. 135).

The doubt which results from confusion and unknowingness can be turned into a situation in which everyone can (but not must) participate as well as create. It can also be productive to evoke a situation like this, to engage productively within the classroom. For a teacher it can be helpful to follow paths that (1) are not familiar to themselves or to (2) lead to areas of aesthetic production that elude one's own controlled intervention, as well as to (3) involve phenomena that put teachers and students back onto the same level of reception. At the same time, educational processes themselves are ultimately uncontrollable and a space must be created for the possibility of failure, experience, and interchange. The possibility of failure, which is always present in pedagogical processes and which is the basis of doubt, should be affirmed:

> We are taught from an early age to experience embarrassment and humiliation when we make mistakes, but good teachers know how to work with our mistakes and strengthen our learning by engaging with those results rather than inculcating our fear of errors. (Peña & James, 2016, p. 109)

Unknowingness

Because school has a problem with the *new*, as art educator Torsten Meyer aptly stated in *Next Art Education* (2013), and because the new is seldomly the subject of teaching, teachers often find it difficult to perceive doubt and the associated possibility of failure as productive potential. Rather, the still existing subliminal belief in the necessity of a superior teacher-subject as well as the tight time management of the lessons can be reasons why teachers mostly stick to their own abilities and therefore avoid, for example, the confrontation with digital artefacts or collaborative work in (art) lessons, as is common outside of school. In case of excessive doubt—which can also result in an all the more rigid adherence to power relations—one might take a look at Jacques Rancière's book *The Ignorant Schoolmaster* (1991). In it, Rancière devotes himself to the pedagogue Joseph Jacotot, who in his lessons fundamentally undermines the teacher–student power relationship by having one unknowing person teach another unknowing person what he himself does not yet know. This is about the abolition of the privileged position of explaining: Explaining serves to preserve authority and social relations: "To explain something to someone is first of all to show him he cannot understand it by himself" (Rancière, 1991, p. 6). The world thus becomes divisible into the knowing and the unknowing. Rancière's example does not in any way demand that the pedagogical relationship between teachers and learners should be dissolved, but he does recognize that learners acquire knowledge on their own, while the motivation to acquire it is imparted by the teacher—the unknowing teacher. Isn´t the teacher within the post-digital—post-digital meaning a different stage in the perception and use of technology, as well as a critical valuation of the assumptions embedded in the general understanding of the digital[1]—always an unknowing teacher? Unlike the language barrier in Rancières example, our present and future situation consists of constant change, as well as curating all the information surrounding our everyday lives, and this is what the post-digital emphasizes.

Experiments in Social Media

As a middle and high school teacher, I was[2] constantly trying to find ways to implement ideas of the post-digital into my work with the students. The students and I curated our own Powerpoint-exhibitions, created

digital fantasy spaces for our avatars, edited short videos, and tried to find structures of (re)presentation on Instagram. During these couple of years, more and more students tried to follow my private account on Instagram, probably because the students didn't know any other teachers who actually had an Instagram account. I started telling my new classes that I wouldn't befriend any students on my Instagram account and that they shouldn't even try. While working on an Instagram project with my ninth graders, the students asked me to create a teacher's Instagram account so they could follow me. Since I knew that some of my high school students were much more active and experienced than I was, I asked them to become my media team and support me and my teacher's Instagram before going online. They chose the name (@dr_j_green) and taught me about aesthetic consistency, what to put in the stories instead of the timeline, and created *green.fact.friday*—when each Friday some kind of trivia was shared (whether being personal or professional).

The first thing I did was ask my followers what they wanted to see and read on this Instagram account. They wanted to have an insight into my everyday school life, see art made by their peers, and learn about my interests (art, music, movies, tattoos)—i.e., they wanted to experience another side of one of their teachers. In the following Instagram story, I asked how they would imagine their favorite place for becoming smarter, making experiences and learning if something like school was never invented. From fifth graders to high school students, all participated and envisioned a place that is open to everyone, is not separated by age or school subjects, has neither timetable nor grades, but a collective perspective for a better future. In response to my student's requests, I posted about my life in school, how I prepared my lessons, the artifacts the students' produced, as well as typical ways of communicating on Instagram through selfies, ootd's (outfit of the day) and Memes , but I also posted about my thoughts concerning school, teaching, systemic inequalities and about how to engage in contemporary ways of teaching and the doubts that came with it. In the following months, the Instagram account attracted students form other schools, fellow teachers and many to-be-teachers. I started networking with some of them and we exchanged ideas about teaching methods, how to deal with principals, and how to handle colleagues who present a one sided anti-new-media stance. We also discussed how beneficial it can be to ask students for help with any technical questions we might have and how this leads to not being afraid to ask them for assistance.

After I finished teaching in schools, content shifted to more university related topics, but is still related to education and the students from my former school are following as well as giving feedback. The Instagram account led to a workshop about post-digital media culture in Cologne[3] in 2019, where I was invited to share my experiences. During the workshop, I discussed possibilities and difficulties of Instagram for a different take on education with students and teachers alike. The results, which were generated through analyzing teacher-Instagram-accounts as well as one's own user experiences, led to the Account "hacks.4teachers" in which "8 Instagram hacks for teachers" are presented. The hacks— which address teachers of any kind—include tips concerning aesthetics, tagging, content, and frequency for teachers who want to start their own Instagram.

If a teacher interested in the aesthetic as well as structural constitution of Instagram, it is not enough to just post pictures and information of the things they do in class or seminar. When using social media by a person whose field is education, many doubts may arise. If students are interested in the life of a teacher, then how much privacy is appropriate? If one posts information concerning education, how is that achievable in a way that the aesthetics and structures of Instagram are used supportively? Are selfies and memes—which are specific forms of communication in social media—a suitable way to transport or characterize oneself and one's content?

In the @dr_j_green Instagram project I try to find new ways of mediating. As the project is something new to me, I find myself constantly doubting: Questioning what to post and what not to post; how much emphasis should be on me as a person and on information concerning educational content; how much politics should be imparted; what hashtags should be used... This project for me represents what I mentioned before: newness creates doubt (through paths that are not familiar to me), I knowingly put myself in a situation of unknowing and thus I am exercising in a terrain often more familiar to my students.

Disturbances

Putting yourself in a state of unknowing is also used within processes of aesthetic production. For example by making use of media disturbances to make visible the possibility of failure; meaning the artifact

gains visibility because it no longer functions in the way users are accustomed to. The same way I gave control to my students to curate the Instagram when I first started it, which made visible for me processes of being represented online and put me (again) in a situation of doubt: some students think that this Instagram failed its original intension (which was to show the work and life of their teacher), but it is exactly this situation of adapting the Instagram account to my current life situation and pedagogical interests, which creates a space (dialectically speaking) maybe closer to that original intension, also by constantly reflecting on the medium I am dealing with and how to use it appropriately. The same way the aesthetic and structural preferences of an app like Instagram often disappear in the process of using it, the hardware disappears in its everyday handling and is completely at the service of what is done with it. The technical device itself becomes conspicuous or emerges from the secrecy of everyday use when it can no longer be used in the way it was intended: The computer, which only comes to the fore when it crashes, or the construction of a low-resolution digital image, which begins to refer to its mediality when its pixels appear. According to Wolfgang Ernst (2009), it is precisely "the disturbances and breakdowns that reveal the nature of a technical practice" (p. 56). At the same time, the uncontrollability of the rebellious medium harbors manifold possibilities for creative debate, e.g., the (in)visibility of things that surround us or ways of making use of disturbances for aesthetic purposes. It is the processes of aestheticization and the artifacts that arise from it that addresses this and thus creates something new from a crashed computer, always reflecting the possibility of failure.

In the following, some examples are discussed to demonstrate how medial disturbances might be used: A whole genre has developed around this so-called "aesthetics of the technical defect," which is often referred to as glitch. The term *glitch* describes a temporary system error, defect, or bug in an electronic device. This results in disturbed and distorted sounds and images. The notion of lack of control can be seen in the verb "to glitch ," originally defined as "a sudden surge of current," hence "malfunction, hitch" in astronautical slang (Oxford Learner's Dictionary). The term has since evolved to describe unforeseen behaviors within a system, particularly computer systems, as well as video gaming and art among the most prominent. In the case of glitch art, "it has been argued that the lack of control is, more than a circumstance, a desirable ontological condition" (Peña & James, 2016, p. 112). It can be defined that a glitch is only a

glitch, if there is no control over the outcome. It is a way to productively deal with the possibility of failure is improvisation; for example, "improvising musicians view errors as a motor of creativity" (Peña & James, 2016, p. 110).

On his album *TTTrial and Eror (date)*, the musician Apparat uses the signals from his crashing computer to create his music. The disturbing noises oscillate between insect-like whirring, broken sound spaces, and creaking beats. In 2002, when Apparat's album was released the noise he created was a radical approach to sound production (similar to Matmos, who produced an album for Björk and used ice picks to materialize their beats in order to create a feeling of coldness in the sound production). These sounds are by now quite common and completely normal for genres like Clicks & Cuts. In order to react to the everlasting and ever more rapid exploitation and assimilation-logic of the market, the counter approaches often become not more radical but more subtle.

The musical micro-genre Vaporwave, for example, shows the ambivalence of attempts at demarcation: the irrelevant background music of image films and advertising clips is used, looped, disturbed, and overdrawn. The use of noise is subtle. The soundscape is deliberately trivial and disturbances are only used selectively. An uneasiness of irrelevance is created through subtle shifts and frictions. The listener is constantly asking the question whether Vaporwave is meant as a criticism of the irrelevance of advertising music, in that it is hyper-affirming on the one hand, but still produces slight deviations; or whether it is an uncritical affirmation of catchy music; or whether it is both at the same time? The term Vaporwave itself refers to the fluidity of contemporary capitalism, which can also be found in certain forms of commercial music. The (im)possibility to position oneself critically within an ever-changing, adaptable and quasi all-encompassing system becomes visible, and in the same way always exposes oneself to the danger of merely reproducing the same thing over and over again. Besides the disturbances within the soundscapes of Vaporwave, the genre includes designs, record covers, and even apps[4] that are strongly related to glitch and its aesthetics of failure.

Pedagogics

The uncontrollability of the material and the will to explore it improvisationally provides a basis for something new[5] to appear, as we can see in musical examples mentioned above. Improvisation being central

to explorations of glitch, "focuses on provoking unpredictable outcomes from routine processes, it requires invention, imagination, and improvisation within a series of imposed technical constraints" (Peña & James, 2016, p. 110). On the one hand, the works mentioned above refer directly to the post-digital[6]; at the same time, however, the fictions of a general virtualization of the living world are destroyed, in that the virtual is always thought in relation to the material device, which ultimately is not completely controllable. It is precisely the uncontrollability of these processes and the subsequent need to improvise that offer an interface to education processes. It is about a perpetual renegotiation, in that on the one hand (in terms of content) a thematic area is set up for negotiation and processing, and on the other hand (structurally) a space is enabled for the possibility of failure, experience, improvisation, and change. Robert Poynton (2013) summarizes as follows: "Such a complex world demands an improvised response" (p. 8).

The aforementioned space cannot be defined prior to creating it, precisely because the experience of uncontrollability makes this impossible. The possibility of failure, which is always present in pedagogical processes and which is the basis of doubt, must be affirmed. At the same time, these processes are highly relevant for understanding contemporary cultural and media developments, ranging from material culture, over music and photo production, to social media and photo-apps that have implemented glitch effects. Phenomena like *glitch* are particularly useful for art education, because they connect to the everyday aesthetic experiences of the students, while always requiring a capacity for reflection; whether that means that we use strategies that force us to improvise, because we don't know what the outcome will be; whether they reference the fact, that all photographic products are digital. The same applies to spaces that are newly developed to enable divergent situations for learning, communication, and collaboration that are also outside of a pedagogical comfort zone, as I am trying to do with the Instagram account.

Doing so, education may become an experience in such a way that spaces of possibility can emerge again and again—often precisely in areas that are beyond one's own access and control. The teachers doubt about their own understanding of these increasingly rapid developments and changes can be transferred into a productive teaching and learning situation through improvisation and questioning power structures, because in the digital age we might not be an all-knowing subject anymore (which

we never were, of course), but exercising in a terrain often more familiar to our students. This very space gives the possibility to undermine the privileged position of explaining: "the parable of a world divided into knowing minds and ignorant ones, ripe minds and immature ones, the capable and the incapable, the intelligent and the stupid" (Rancière, 1991, p. 8). The will to accept and embrace doubt as a (contemporary) pedagogic situation will strengthen us against any kind of prefabricated approaches, as well as the structural power of explication and may open up a space that goes beyond traditional ways of teaching. Understanding the post-digital condition, with all its manifestations of uncontrollability, may it be contemporary ways of communication, or the creation of unexpected aesthetic artifacts which heavily rely on the materials and immaterials around us, and should not only be seen as a chance for us pedagogues, but is inevitable. The immense problems of schools having to adapt to the situation of the Covid-19 pandemic in 2020 is just one example.

NOTES

1. Also see: (Knox, 2019).
2. I write *was*, because I no longer work as a schoolteacher, but I am still trying to do the same at university.
3. Entire schedule available here: https://kunst.uni-koeln.de/blog/postdigit ale-medienkultur-in-der-schule/.
4. For example: https://vaporcam.en.aptoide.com/app.
5. Newness should not be understood as a promise, but more as a potentiality (Tavin & Tervo 2018) as well as in a Deleuzian manner. In *Difference and Repetition*, Gilles Deleuze states that: "to repeat is to behave in a certain manner, but in relation to something unique or singular which has no equal or equivalent. And perhaps this repetition at the level of external conduct echoes, for its own part, a more secret vibration which animates it, a more profound, internal repetition within the singular" (Deleuze 1994, p. 1).
6. i.e., sounds and pictures no longer are the goal of a creative endeavor, but its source material. As Nicolas Bourriaud (2002) puts it: "The artistic question is no longer: 'what can we make that is new?' but 'how can we make do with what we have?' In other words, how can we produce singularity and meaning from this chaotic mass of objects, names, and references that constitutes our daily life?" (p. 37).

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CHAPTER 16

Creative Coding as Compost(ing)

Tomi Slotte Dufva

Introduction

What would happen if one day, all of a sudden, by some mysterious force, all the digital devices, equipment, and machinery would burst into flames, fry, all at once, and we would be left to survive without any of the devices, infrastructures, and machinery most of us have grown accustomed to having? This is a question Hayles (2019) recently raised, not attempting to posit dystopian panic but instead to earnestly inspect the roles various digital processes have on everyday lives of most of us. In less than a century, the digital revolution has substituted or completely displaced earlier technologies. Digital has become so routine that most of us rarely wonder about the fact that a little device in our pocket can tell us a route to the nearest cafe, warn about traffic hazards, and maintain a video call to a friend in another part of the world, all at the same time. Berry calls this a post-digital world; a world that is so entirely saturated by digital devices and processes, that not using them is a deviation from the norm (Berry, 2016, p. 3).

A famous meme announces that "You are not a real hipster – until you take your typewriter to the park." Cramer (2015) argues this meme

T. S. Dufva (✉)
Department of Art, Aalto University, Espoo, Finland
e-mail: tomi.slottedufva@aalto.fi

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is a fit illustration of post-digitality as it displays the rift between digital and postdigital; where some analogue tools, such as typewriters and film cameras have resurfaced as a compelling option to the digital ones. As such, the post-digital questions the ongoing progress of digital technology, seeking alternatives by reaching to past technologies. The seeking of the past is not to be confused with a refusal of the new, but instead as a revaluation of the usefulness and direction of the digital technologies. Cramer draws an analogue to cars and bicycles: After World War II, the common assumption was that cars are far superior to bicycles regardless of the context. Now, post-car, the evaluation is entirely different, questioning the superiority of cars in many ways (Cramer, 2015). As such, post-digital refers to a perspective that is altered because of the ubiquitous digital processes; it is not a question of progress from pre-digital to digital and further, but a state where digital is complexly intertwined with many common, uncommon, and everyday significant processes and assemblages. This chapter proposes possibilities for art education to explore post-digital worlds. The use of post-digital worlds refers to the complex nature of the post-digital; There is no one post-digital world, but instead, I propose that post-digital creates multiple worlds, or worldings (Anderson & Harrison, 2010), based on the subject's location, socio-economic status, and much more.

The world saturated with digital technologies is not an equal one. Instead, it could be said to widen the income gap (Morozov, 2014), strengthen the colonial powers (Couldry & Mejias, 2019), or benefit only a small number of people, often those in charge (Lanier, 2014; Zuboff, 2019), to name just a few challenges. One simple example to show how the digital processes tie into these broad questions is the act of taking photographs. Taking a photo with a smartphone does not only take the picture but records location, time, battery status, altitude, as well as a plethora of other data depending on the smartphone and application used. Furthermore, a photo uploaded to a social media service, a modern analogue to showing a photo album at family get-togethers, is not only a photo displayed to relatives but an analyzable collection of data and metadata, such as identification of people, brands, or even emotions in the picture. All of this is ready to be harvested by the company— or country—providing the service (see, e.g., Dieterring, 2019; Knuutila, 2019; Pariser, 2012; Stöckli et al., 2018). Because of this, the understanding of post-digital might be convoluted as some of the challenges can be seen to delve more around the issues of switching to digital (from

non-digital) or connecting more closely to broader socio-economic, political, and cultural challenges. Nevertheless, post-digital is a useful concept as it opens a perspective into the digital landscape that is not concentrated on the digitalization per se, but rather deals with the complex issues of the current situation and broadens the discussion for possible and alternative future paths. Fleischer (2009), a Swedish media theorist, writes that post-digital asks how does digital take place,[1] meaning that the question of post-digital is about how the complex digital processes, or systems, fold and unfold in various spaces.

The switch to digital introduced a new layer into everyday processes in the form of code and digital data. Code enabled the universal digital machine, which can be altered to do almost any job with just updating the code (Petzold, 1999). Digital data, then, enabled a form of universal data; all different bits of information could be transformed into bits and bytes, which then could be collected, manipulated, and analyzed in unforeseen speed and scale (Ceruzzi, 2012). These digital layers, code, and data have been supported by the accelerating improvement and cheapening of the hardware (Ceruzzi, 2012; Gabrys, 2013). Post-digital, in this context, is crucial as it works both as a condition and as a field of inquiry into the complex layers of digital actions, the code, data, and hardware have created. In other words, it looks at how digital structures take place. Hayles (2017) proposes that as the digital processes have increasingly more possibilities to gather information, react to it and make choices, and that we should think of them having expanded cognitive capabilities. These cognitive, non-conscious digital processes then form new kinds of systems through complex assemblages between "well-defined interfaces and communication circuits between sensors, actuators, processors, storage media, and distribution networks, and which include human, biological, technical, and material components" (p. 11). As such post-digital, at least how it is understood here, is always political and cultural; Digital has become ubiquitous, but it takes place very differently in the rural villagers shared smartphone than in a preteens tablet in the so-called first world country. Nevertheless, it still takes place.

The questions of post-digital worlds are broad. Therefore, here the focus is on how art education has a significant opportunity in combining coding, data, hardware, and the post-digital with critical and feminist pedagogies into a broadened and meaningful understanding of the current state of post-digital worlds. In particular, I use Fleischer's (2009)

term of taking place as an instrument to look at the post-digital landscapes; How does the digital take place? Under which conditions does the place taking happen and, under which terms? Moreover, I take a feminist approach to the issues related with the creative coding and post-digital and loan the concept of compost from Haraway (2016), to embody the unequal situations where the taking place happens and the relational roles of different actors. Haraway uses the concept of compost as an image that articulates life in intricate more-than-human ecologies. Here I propose digital compost as a figuration for complex, more-than-digital situations we find us in post-digital worlds.

The next section aims to open up the theoretical context of creative code, and their relationship to art education, after which I will use three courses taught in Aalto University as an example of the aforementioned approach. I conclude this chapter with a short discussion and explore further research.

Feminist Approaches of the Post-Digital

Traditionally, digital code is understood as a tool to program digital devices (Ceruzzi, 2012; Petzold, 1999). As such, code is considered as a somewhat neutral tool and coding as a functional skill that enables one to manufacture software. This functional understanding runs dominantly throughout the current discourse on teaching coding in schools, putting weight on coding as a skill for employment in the future (Dufva & Dufva, 2016; Williamson, 2015). Creative coding, an oxymoron as Knochel & Patton suggest (2015), takes an alternative approach to coding, focusing on the expressive sides of code instead of the functional. Casey Reas, one of the founders of the popular creative coding framework and software, *Processing*, calls code a way of thinking, as a humanist activity, not a technical skill (Cangiano, 2016).

In general, creative coding includes a broad collection of tools, coding frameworks and software (Processing, Pure Data, Open Frameworks, Arduino, and so on) as well as multiple contexts of art-making and (sub)cultures (code poetry, live coding, hacker culture, maker culture, free software, and so on). From the art educational context, the shift to focus on expression rather than functionality in coding is considerable as it allows for a more in-depth working between the disciplines and enables new kinds of expression in the digital domain (Ettinger, 1988; Knochel & Patton, 2015). Moreover, creative coding may enable a more in-depth

and experiential connection with the digital processes, providing students with both hands-on experiences and theoretical frameworks (Dufva, 2018). In general, the pedagogical model outlined in, for example, Knochel & Patton's work (2015) and Dufva's work (2018) bears similarities with experiential art understanding (Kolb, 2014; Räsänen, 2000). As such, creative coding demonstrates the importance of teaching post-digital issues within art education as it offers abstract theories, critical discussions, and hands-on activities.

However, in this text, I want to move forward with the art educational approach of creative coding and think creative coding as compost(ing). Whereas creative coding focuses on expression and general critical understanding of the digital, the approach of compost focuses on the myriad of ways of how code takes place. Composted creative coding seeks to queerify[2] the code; Code is not only functional, political, and emancipatory but a complex folding of them, a variety of virtualities and assemblages that are bound to the subject in diverse ways. I argue that dirtying the often abstract and invisible digital processes with the muddy waters of the human subject, gender and cultures are more important than ever.

Feminist interpretations of the digital are nothing new, starting from Ada Lovelace, the first computer programmer (Petzold, 1999) and Haraway's "Simians, Cyborgs and Women" (1991), feminist theories have significantly contributed into digital debates. Still, the feminist perspectives are not often readily accepted in the programming communities. When Ari Schlesinger, a computing researcher at Georgia Institute of Technology, proposed an idea of feminist programming language (Schlesinger, 2013), she was met with ridicule and chauvinism in the form of a joke programming language in the GitHub[3] ("r/ProgrammerHumor," 2014; White, 2013). The inequality and lack of diversity is a well-known fact in the digital technology industries (Collins, 2017; Jarrett, 2015) and the situation does not seem to be getting any better (Tassabehji et al., 2020). Although it never has been: D'Ignazio and Klein tell a story of the first women working at NASA, highly educated, being responsible for the majority of the calculations, were despite their crucial role, only called computers, instead of their real names (2020 p. 3).

Bassett, Kember, and O'Riordan (2019) postulate that the role of women in post-digital processes is vexed; They are at the same time over-achieving business miracle workers, super-fit housewives taking care of

children and pleasing the husband while being almost entirely absent from the development of these digital technologies. They call the women's role in the post-digital as cinderella's, highlighting the impossible and even paradoxical role of everyone who is not a wealthy white male. Thinking these issues through creative code as compost(ing), inspired by the intersectional feminist theories, brings forth questions of how and under which circumstances these roles take place; how is the taking placed designed and presented and under with assemblages and virtualities. Paraphrasing Haraway (2016), it matters what codes code and which data creates data. Or even, how do we become with the code, and how do we think with the code? In the approach of creative coding of compost(ing), the hermeneutical spiral of experiential art understanding is questioned: Instead of a hierarchical model, or progress toward a specific direction, learning is envisioned as layered, somewhat simultaneous processes of taking place. The aim of such compost(ing) is to take diverse post-digital worlds into account.

In the next section, I use three courses for university students (two for art education students and another for University-Wide Art Studies (UWAS),[4] as examples of the approach and its possibilities. The art education course *Digitalization and Learning 1* works as an introductory course to digital issues, and the other course, *Sustainable design pedagogy and materiality*, brings forth immaterial and sustainability issues within the post-digital world. The university-wide course, *Creative coding*, is a general introduction course to art and code. These three courses are not meant to be presented as empirical proof of the creative coding as composting approach, but rather as examples of how such practices can take place in university education. It is important to note that in regard to feminist theories and post-digital worlds, courses taking place in a well-resourced Nordic country (Finland), and in one of the top art and design universities in the world (Aalto University, School of Arts, Design, and Architecture), can hardly suggest to comprehend all the complex and exclusionary issues within post-digital worlds. The perspective from these courses is inevitably white and Western. However, working within the comprehension of the privileged perspective the courses aim to discuss and work through these complex unequal issues and situate oneself into the post-digital world(s).

Digital Compost

As mentioned earlier I am presenting these examples as a compost, tossing post-digital processes in contact with other things and species. However, due to the limited scope of this chapter, I will only highlight a few aspects of this compost. Many other things will be left decomposing. These examples are all simple assignments from the courses and do not require complicated hardware or software. Creative coding as compost(ing), as used in the example classes, is not a model to follow pedantry, but more a kind of a getting hands dirty with the post-digital: It is more like sinking hands into the unknown ground. There are many things: roots, webs, bugs, worms, dirt, and humus. Issues that arise may be so complex that a teacher cannot (and should not) be the all-knowing prophet of wisdom. Instead, the teacher may create a space that gives rise to concepts that allow us "to surround ourselves with the possibilities for being otherwise" (Grosz, 2012, p. 14).

Humus

How would you signal a picture of a cat, using only sound (no words) to a person that cannot see you? This question works as a starting point in the digitalization and learning 1-course, the introductory course for the first-year art education students (BA). The course had 16 participants and took place in January 2020 at Aalto University. The assignment was used in the beginning of the course, before a preliminary lecture of the post-digital world, with the aim to give experiential context of the digital processes and to discuss them within this more freeform context, before introducing any theories or frameworks. The experiment in question is called a human fax machine (Bunt & Ihlein, 2013) and requires only a pen and paper. In the experiment, students form small groups and negotiate their own sound-based fax machine language. Sounds can be made with voice, or it can be clapping, drumming, or something other. Then the group is split between coders and decoders. Coders transmit the picture and decoders draw the picture based on the language created. After each picture, the group can evaluate their results and improve the language.

At the end of the experiment, different groups get to know other groups solutions. The experiment aims to raise awareness on how code is social, political, and cultural; different groups come up with entirely different solutions. Whereas some students create logical matrix kind

systems of drawing, some create improvisational languages based on the feeling of the voice. The human fax machine works as an introduction; it takes into account multiple aspects of the digital, presenting clear ways the code takes place and is used. It aims to give the idea of the social assemblages inherent in many post-digital processes. It works as the soil of the compost; the dirt, the humus, that makes the invisible digital processes visible, and somewhat graspable. Programming languages are composed within the limitations of the technology available, but within these boundaries they are questions of collective choice, culture, politics, and economy. Moreover, the assignment presents code from a broader perspective than any actual coding framework could do; one does not have to start from the binary logic of digital. As such, it empowers students in thinking that code—and digital processes could be greatly altered.

Care

In a recent article series, reporter Kashmir Hill tested how one could live without the big five tech giants (Hill, 2019). The results are somewhat predictable—it becomes pretty hard pretty quickly to live a normal life as a reporter working for a website—but the results still portray how we are tied into these vendors in many, often unforeseen, ways. One homework assignment in the UWAS creative coding course, open to all students in Aalto University regardless of their discipline, has been an assignment called "a week in hell," that asks the students to change their digital routines: If one is using Google, try out Duckduckgo, avoid social media for a week, or seek other ways to question your digital surroundings. The results are always impressive: Some students say how it feels worthless to walk because they gave up on wearing a smartwatch that counts their steps. Others feel stress because they imagine all the uncaught Pokémon's passing by while walking. Furthermore, some are already so well-versed of the digital privacy issues that the week makes them go wild and try TikTok, because they write that they have already abandoned Google, do not use Facebook and encrypt their emails. This year the course was offered as a web-based[5] course and there were 78 students from all over Aalto taking the course, therefore there were lots of different answers and reactions. However, it should be noted that none of the students thought the assignment was easy.

The "week in hell" highlights the themes of care and questioning. The focus on routine digital processes brings forth the questions of feeling and quality of the digital processes that take place: Why are we using what we are using, and could the digital processes be better? Discussions after the assignment also raise awareness of the inequality and the very different post-digital worlds taking place at the same time. Even though the assignment is very much so-called first-world oriented, the students in the course still often share unique viewpoints and considerations that range from the ecological to gender, and further to political issues. Moreover, the task reveals how the digital and real constantly create and negotiate the post-digital surroundings. Fleischer draws an analogue to how birds take place with their singing and how a motorway nearby takes place by drowning the singing (Fleischer, 2009). After the assignment one student mentioned how she had switched to using Ecosia[6] search engine instead of Google as it uses only renewable energy and claims to use the income they get from ads to plant trees. This mention lead to a larger discussion of sustainability and the different possibilities of sustainability in the post-digital world(s). Another student claimed that Instagram censors pictures from transgender or overweight people based on their algorithms, which then led into large discussions of gender, body-image and how internet is affecting all that. The assignments and examples portray that awareness and constant care of the post-digital routines are required. Care is, at the same time, personal and complexly universal.

Waste

Waste is a significant issue in digital technologies. E-waste fills landfills (mostly in so-called third-world countries) and is a major polluter (Gabrys, 2013). It is hard to think of good enough compost that could turn all the e-waste back into raw materials. It is even challenging to comprehend all the raw materials digital devices require. Moreover, some digital processes demand massive amounts of energy. As an example, training machine learning models require a vast amount of computing power and energy (García-Martín et al., 2019). Similarly, recent research revealed that Bitcoin currently uses as much energy as the whole of Switzerland (Baraniuk, 2019). The discussions around the energy and material resource use of digital devices are still novel and underdeveloped. Some companies have aimed for greener and more energy-efficient processes (Greenpeace, 2008; Howard, 2010). However, many problems

remain. For instance, the origins of some materials are hard to verify. Even *Fairphone*, a company whose mission is to make sustainable and fair mobile devices have run into troubles on verifying the fairness and sustainability of all of their materials (Garrigou, 2019; Schwa, 2019). With the release of cheap Internet of Things devices that utilize AI, the questions of material and energy use have become even more complicated (Crawford & Joler, 2018).

To bring forth these issues of materiality and sustainability, the sustainable design pedagogy and materiality-course for BA and MA art education students, includes a task of opening a device. The instructions are simple: find a device that you do not use anymore or is broken, or you are sure you can put together later on, and start opening it. Document the pieces you find, if possible, search for components from the internet. Do not try to open TVs, washing machines, or other devices that use high-voltage. Preferably use only small devices that work on batteries. Local recycling centers are often glad to donate appropriate devices as they are drowning in them. The assignment can generate nervousness in some, as they might be afraid of opening a device, after all, many devices come with warning labels such as "warranty void if opened." Furthermore, some students become stressed about the amount of e-waste they are accumulating. However, opening a device also opens up a new world of the post-digital. It is the part hidden world of seeing inside the devices and owning them, and can be seen to be closely tied to hacker and maker cultures (Fox et al., 2015; Konopasky & Sheridan, 2015).

One student, for example, opened a TV remote controller. He documented the opening process, remarking how it was glued to make the opening more difficult. He then found a microchip inside the controller with some text on it and searched the internet with that text. He found the datasheet and company manufacturing the chip. He searched for the company, found its headquarters in Shenzhen, China, one of the world's biggest manufacturing cities for electronics. He then used Google street view to look at the headquarters and surroundings. Finally, he searched for the weather for the place as well as information from Wikipedia. This example shows how opening a digital device can widen the understanding of the material layers in the digital device. Moreover, it offers one journey into the post-digital worlds where we can use the digital to get to know the digital. However, such a journey is a naturally privileged one, as we do not have to work the probable low-income long shifts in the manufacturing plants or breath the polluted air of Shenzhen.

After the disassembly, the assignment continues with the task to create artwork based on the materials found in the device. Based on the length of the course, this can be a quick impromptu artwork or well-thought-out hacking process that retains or reuses the devices functionality, such as reprogramming an electronic toy to work differently.

Going Further

The idea of digital compost, and the examples of humus, care, and waste aims to describe some straightforward ideas within the approach of creative coding as compost(ing). They are meant as a brief stories of compost(ing), inspired from Haraway's speculative fabulations and string figures (2016), and seek to portray how we become with the post-digital processes. The examples are purposefully simple, to show how talking about post-digital and code taking place does not necessarily require advanced technological skills. More critical is the situated knowledge of what code codes the code and enabling a place for understanding of the various post-digital worlds that exist at the same time. The picture creative coding as compost(ing) aims to portray is that post-digital issues can be played with and tossed around. As stated earlier, this is what I called dirtying the post-digital, or queerifying the post-digital; An active process of critically examining, and possibly even transforming, how the post-digital takes place. Through putting the often transparent and abstract digital processes into compost, creative coding aims to smear them with agendas, biases, and meaning(s). The human fax machines display the cultural, ideological, political, social, and economic questions within the creation of programming languages. The "week in hell" seeks to bring awareness and care to the compost; we need to tend to it; otherwise, it will just start to stink. Lastly, opening the devices can be emancipatory in many ways, but more importantly, it brings forth how complexly digital devices and processes are tied locally and globally.

However, this text offers only a scratch into the surface of the digital compost. More expansive writing would be required to introduce a practical guide into writing code, or using data within this approach of creative coding as compost(ing). Moreover, a more in-depth dive deep into the compost theory would be required to give a profound perspective to that practical guide of creative coding. Furthermore, empirical research on creative coding, or any post-digital art educational activity would be most

interesting as it would shed more light into the student's comprehension as well as best practices. There are also exciting paths to take within the embodiment and feminist creative coding as well as with STEAM[7]-education. Going further it may be fascinating to consider creative coding from the context of transhackfeminism ("transhackfeminism," 2020), to explore further how post-digital processes work in biodata and how they could decolonize technologies or work as pedagogies of care.

Notes

1. Äga rum in Swedish, a literal translation would be to own a room, but Fleischer suggests taking place as an English translation.
2. Queerifying refers to the act of translating an action, story, concept or an issue with queer-terms, i.e. adding queer and feminist voices in the story. For instance, Bassett et al. (2019, p. 45) use this in the scope of digital technologies.
3. GitHub is a popular website for developers to discover, share, and build software, www.github.com.
4. University-Wide Art Studies (UWAS) offers all Aalto students and faculty an opportunity to explore art and design based practices and processes beyond disciplinary boundaries. See https://uwas.aalto.fi.
5. Due to the Covid-19.
6. https://www.ecosia.org.
7. STEAM: Science, Technology, Engineering, Arts, Mathematics.

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Post-internet *Verfremdung*

Helena Björk

Prologue

> 14-year-old (about their work): "I suppose I could upload this on Instagram and write something deep."
>
> Me (curiously): "How do you write something *deep* on Instagram?"
>
> 14-year-old: "Well, it's hard to explain…. But none of the usual stuff, and no hashtags."

I work as an art teacher with students between the age of 13 to 15 in a lower secondary school in Porvoo, Finland. The internet with its imagery is ever present in my work, in constantly changing ways. Trending memes pop up in digital collages and analogue drawings, inspirational quotes circulate and boost a new interest in cursive writing, and the other day I learned that galaxies are no longer popular. Even speech is sprinkled with internet references. Teenagers speak in hashtags, have learned some concepts from memes and sometimes appear to have minds that operate with GIF-imagery. Their habits are a constant reminder of the "Internet state of mind" (Scherpe, 2011, para 37), where references and formats abound, and have everything to do with the physical world. When I

H. Björk (✉)
Lyceiparkens skola, Porvoo, Finland

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mention that we will be working with clay, one teenager wants to recreate a famous scene from the movie *Ghost* (1990) with Demi Moore and Patrick Swayze by the pottery wheel. A classmate is unfamiliar with it and so the girl shows him what it's all about—but it turns out she only knows the scene from a popular GIF and hasn't seen the movie itself.

In this context the internet is a globally present entity, a source of inspiration and an arena that interacts with all other elements of life. In the spring of 2020, it became even more prominent as we found ourselves in the midst of a global pandemic and school moved online. With a larger proportion of digital assignments, art teachers may have gained more insights into online visual cultures than ever before. These days, the natural habitat of a short video montage appears to be social media, as my teenage students combine what they have learned about juxtaposing video clips with things they have learned from interacting with each other on TikTok. This is what it inevitably looks like when Sergei Eisenstein's Battleship Potemkin (1925) meets moving image that has become accessible to everyone and ingrained in everyday life online. From the point of view of art education, the internet is full of visual cultures, pop culture, and remixes. It influences what kind of images to create, how to create them and why. Social media forms our behavior by offering rewards in the form of likes, but the internet is also a site of more complex learning and participation that has a lot of yet unseen potential.

Introduction

In this chapter, I examine visual culture on the platform of Instagram *as a form of performance*. Framed by the standard formats—or a deliberate choice to deviate from them—aestheticized in one way or another, and directed at an audience an Instagram post or an entire account has a lot in common with theatre. Yet, the audience seems unaware of the construction on display, despite hands-on experience of editing images and creating posts.

To explore a perspective which is intriguing from an aesthetic as well as educational point of view, this chapter looks closely at Bertolt Brecht's thoughts on theatre. I will focus particularly on the notion of *Verfremdungseffekt*, which is also commonly known, in English, as the *alienation effect*. Brecht's aim was to inspire critical reflection in the audience with the help of commentary or visible technical devices that broke the illusion of the play. His emphasis on society provides an interesting starting point

for an analysis of today's visual culture (Tavin & Tervo, 2018). Brecht (1982b, 1982d, 1982f) also frequently addressed the educational aspects of art, which makes him even more significant for art educators.

Brechtian theatre is here seen as a framework to understand how we operate as followers on social media, to reach the stage of "something deep" sought by the 14-year-old in my classroom, and beyond. It could also provide a runway for the critical imagination, or ways to subvert and play with social media. For art educators, Brecht's thoughts on theatre could offer an eye-opening perspective in this age of highly participatory visual cultures as well as concrete tools that are engaging on a more than cerebral level. As we nurture creativity and criticality alongside visual skills in classrooms across the world, Brecht's concepts may resonate with the very core of our work.

Instagram as an Arena for Artistic Exploration

Social media have been around for more than a decade, and helped form our lives in many ways. So far, they have been the subject of some studies, many of which focus on Facebook and rely on self-reporting (which is not entirely reliable). Some studies have been conducted around the visual language of specific groups while others have examined the connection between social media and well-being, but much remains yet to be done (Brown, 2018).

Instagram is a highly visual social media platform owned by Facebook Inc. that allows users to upload photos or a clip of moving image of up to 60 seconds. With its filters to quickly edit photographs or create a mood, the app was originally developed for photo sharing and to compensate for the poor quality of smartphone cameras. In contrast to Twitter, a very text based social medium, Instagram is primarily driven by images. Unlike its close relative Facebook, which typically connects friends, family, and acquaintances, Instagram networks are more loosely based and an account can attract followers based on its content, much like a blog. Images are accompanied by captions and often hashtags, but the simple interface of Instagram is not designed for sharing events, interacting with specific groups or discussing news articles. Indeed, representation of "the real world" seems to be the main focus and the tools primarily visual. These reasons make Instagram a particularly interesting social medium to explore from the point of view of visual literacy.

A popular visual pastime can also have a negative impact on the lives of individuals. The British report, #*StatusOfMind*, from The Royal Society of Public Health (2017) and the Young Health Movement examined the positive and negative effects of social media on young people's health in 2017. The report studied social media platforms according to their impact on young people and concluded that Instagram and Snapchat were the most detrimental to young people's mental health and well-being. One of the report's recommendations, supported by 68% of young people, was for social media platforms to highlight when images have been digitally manipulated (Royal Society for Public Health, 2017). While this idea is guided by good intentions, it doesn't promote visual literacy to a great degree. Aspects of photography such as choices of subject matter, camera angles, and cropping will still remain. The report does, however, suggest that images have a strong impact on well-being.

When Instagram started gaining popularity among influencers, and the thought of a curated feed spread among users, InstaStories were launched as a way to publish content that remained online for 24 hours. This way, users did not have to face the problem of whether a moment was special enough—a problem that was actually addressed by the founder of Instagram himself—but had the opportunity to casually upload images and video with text. Originally a Snapchat format, the new feature was said to encourage more "authentic" material (Wagner, 2018).

Arguably the most widely noted art project on Instagram to date is Amalia Ulman's (2014) *Excellences & Perfections*. The artist launched the project in 2014 and posted images with captions according to a manuscript over a four-month period. Ulman started her three-part social media performance with an image that stated Excellences & Perfections, Part 1, much like a Brechtian title on stage. By a strategic use of popular hashtags, she quickly gained many followers.

Ulman's Instagram performance told a mainstream story of a girl who moves to Los Angeles with many clichéd elements. She first works as a model, but finding herself out of money she finds herself a rich lover. Images speak of a cute girl, of a glamorous lifestyle that included plastic surgery, drugs, recovery, and the healthy lifestyle that followed. Everything was executed according to a manuscript by the artist who would sneak into luxury hotels for the right kind of environment, or to buy clothes for her character only to return them. During this time, Ulman only became her character for the photos and reportedly spent a lot of time in the forest (Ulman, 2020).

The nature of the project could have been obvious to anyone who suspected staged photographs or knew the artist, but the revelation that the material was not a documentation of an actual life of someone came as a complete surprise to the followers of the account and even sparked outrage. The artist herself described the reactions:

> When I revealed that my Instagram character was a creation, some of my followers were angry. A lot had left sexist comments on my profile. The work was holding up a mirror and they did not like what they saw. (Ulman, 2020, para. 13)

In other interviews Ulman has explained the background of her project:

> The idea was to bring fiction to a platform that has been designed for supposedly 'authentic' behavior, interactions and content. The intention was to prove how easy an audience can be manipulated through the use of mainstream archetypes and characters they've seen before. (Gavin, 2014, para. 1)

It was precisely by participating in mainstream imagery, or what Ulman has called an interest in middlebrow aesthetics, that the project gained large numbers of followers and attention.

In a review of Ulman's show with other works, Tess Edmonson (2015) notes, "In performing the mainstream, Ulman works to uncouple it from the ahistorical normalcy it enjoys" (para. 4). This observation comes across as a very Brechtian interpretation of Ulman's projects and how they operate; making the familiar look strange, albeit in subtle ways. On a further note, taste seems to be an important element of *Excellences & Perfections* which Edmondson describes as "a careful study of how taste structures and mediates expressions of female experience" (para. 3).

The project showed what we read into social media and how willing we are to believe what we see to be "authentic." Since 2014, *Excellences & Perfections* has attracted the attention of the New Museum in New York and Whitechapel Gallery in London who have exhibited Ulman's work, as well as Tate Modern who featured documentation of the performance in the show *Performing for the Camera*. Institutional attention could mean many things, but in this particular case Ulman's project seems to have used Instagram's visual language for critical purposes in a unique and

pioneering way. The museums may have recognized what was the first of many artistic explorations of social media.

While social media keep evolving with visual trends among users and a wide range of opportunities for advertisers, we seem to be less imaginative *in the role of the audience*. The reactions to Amalia Ulman's project suggest that a critical gaze is not yet commonplace, and that the thought of a playful experiment, art project, or blurring of reality and fiction seems to upset many people. As creators of content, we might see things differently however, and learn to play with subject matter, representation, and levels of meaning. From my vantage point in the classroom, the step comes across as quite effortless. While teenagers may condemn "fake" content on social media, they seem to quickly switch to an intuitive understanding of Ulman's intentions and a keenness to experiment with fiction themselves.

Bertolt Brecht's theatre can provide a useful frame of reference for Ulman's Instagram performance and further experiments in the classroom, or elsewhere. In my teaching practice I have introduced *Excellences & Perfections* to teenagers as well as art education students and then given them the assignment of creating fiction on Instagram. Alter egos have ranged from a silly twelve-year-old and an obsessively sporty teenager to a spiritual leader and an overly eager art teacher. In an educational context the question would be: can tweak our experience with the help of creative ways of operating within the platform?

Verfremdungseffekt and the Theatre

As stated earlier, Bertolt Brecht was a German playwright and poet who radically broke traditions of drama, but also wrote extensively about the social and political relevance of theatre.[1] In the essay, *The Modern Theatre is the Epic Theatre* (1982d), Brecht lays out the characteristics that distinguish what he called the epic theatre. He criticizes the majority of plays of his time and especially opera for being what he calls fodder for the entertainment apparatus, or art based on "the culinary principle." As he lays out the characteristics separating epic theatre from dramatic theatre, it becomes clear that Brecht is aiming at evoking critical reflection in the audience (1982d). The spectator in dramatic theatre relates to a stage situation as if an invisible fourth wall around the stage—the one between the audience and the actors—existed. The purpose of the drama is to provide the spectator with sensations, an involvement through identification and

an experience by means of linear development and succession from one scene to another. Epic theatre, in contrast, emphasizes narrative in favor of plot, turning the spectator into an observer and arousing a capacity for action by what is described as breaking the fourth wall (Brecht, 1982d).

Brecht gives many examples of how the epic theatre can affect the viewer: "The text had to be neither moralizing nor sentimental, but to put moralizing or sentimentality on view. Equally important was the spoken word and the written word (of the titles). Reading seems to encourage the audience to adopt the most natural attitude toward the work." (Brecht, 1982dd, p. 38) The written titles Brecht refers to are titles to each scene of the play. As written elements on stage they form a type of commentary to the drama. Brecht further explains the significance of the titles in *Notes to the Threepenny Opera*:

> The screens on which the titles of each scene are projected are a primitive attempt at literarizing the theatre. This literarization of the theatre needs to be developed to the utmost degree, as in general does the literarizing of all public occasions. […] Literarizing entails punctuating 'representation ' with 'formulation'; gives the theatre the possibility of making contact with other institutions for intellectual activities. (Brecht, 1982c, p. 43)

Having the titles of the scene on stage is opposed to the idea of everything being contained within the drama. The spectator is made to think about a subject rather than thinking within the confines of a subject. Punctuating representation means precisely this: while the illusion of the play can exist, an element of reflection is added to the experience of the viewer. Taking this idea to Instagram could provide new ways of relating to the medium where it can play the same role as before, but with added layers of meaning.

What emerges from Brecht's thoughts on *Verfremdung* is a sense of nurturing the minds of the audiences. This does not mean that emotions are denied, but rather seen as one part of the experience that also involves the intellect. Being completely absorbed by the illusion of the play is to be avoided at all costs. In a similar way, Instagram offers glimpses into other people's lives and it might be easy to imagine what their vacation or dinner was like, without a single reminder that we're actually looking at an image: a result of choices.

What is the role of *Verfremdung* in the relationship between art education and post-internet imagery? Some years ago, in 2015, I had the

chance to work together with a drama teacher on a play. A group of teenagers wrote a manuscript about two friends who drifted in different directions, about misunderstandings and rumors that affected their lives. A group that had chosen art class had the freedom to work on any visual design for the play together with me. Among other things, the teenagers created Instagram accounts for the main characters that commented on the plot and displayed them on a large screen on stage. The audience thus experienced both dialogue, musical numbers, and written text with still images. One Instagram post stated "Maybe I was born to be sad" in white letters on a gloomy, black background, much like Amalia Ulman's title to *Excellences & Perfections*. The group who created the material had fun experimenting with clichés and exaggerated self-pity, which has led me to believe that teenagers are both self-aware and perceptive in ways that could hold the potential for a whole new relationship to social media that adults might learn from.

The Concept of *Verfremdung*

Brecht's different techniques, such as projected titles on stage, were means to achieve the *Verfremdungseffekt*. On the note of these titles and their use as an artistic strategy, Brecht (1982b) emphasizes that they are by no means extras or mechanical aids. The purpose of titles on stage is not to help the spectator but to block a complete empathy with the characters on stage. Their impact is *indirect* but crucial in preventing the spectator from being carried away, and this is what makes them an organic part of the work of art.

Brecht developed the notion of *Verfremdungseffekt* in order to present a set of concrete techniques—projected titles being one of them—for the epic theatre. In John Willett's English translation of Brecht's texts on theatre the term alienation can either refer to the term *Entfremdung* as used by Hegel (1977) and Marx (1964) and brought up by Brecht in early texts, or the term *Verfremdung*, which was later coined by Brecht himself (Brecht, 1982f, p. 76). What seems to have sparked Brecht's use of the term *Verfremdung* was a visit to Moscow in May 1935, where Brecht witnessed a performance by Mei Lanfang and his company.

It is important to note that the English word *alienation* is widely connected to Marx but also quite commonly used for Brecht's *Verfremdung*. While not entirely unrelated concepts, the German language maintains a clearer difference between the two. Peter Brooker (1998)

describes other ways in which the term *Verfremdung* has been dealt with in the English language:

> Brecht's term [*Verfremdung*] has been variously translated 'alienation', 'estrangement', 'éloignement', 'distanciation' and 'defamiliarisation'. As he described it, it employed elements of stage design, music and lighting as well as a gestic acting style in a conscious – and in some ways self-conscious – attempt to historicize characters and events. (p. 62)

Verfremdung has also been connected to the Russian avant-garde and the concept of "priem ostrannenija" or "making strange" in literature. Willett (1982a) assumes that *Verfremdung* is a direct translation of this term, while Peter Brooker (1998) sees *Verfremdung* as something broader with a social and political impact. Essentially, the purpose is to make members of the audience see their situation clearly and not only draw attention to the art itself.

Michael Patterson (1994) has a similar take on *Verfremdung* in a text on the legacy of Brecht. With reference to Brooker, he also sees a problem with the English term alienation in that it implies a much less nuanced experience "that audiences should become either antagonized by the performance or detached from the stage action to the point of boredom" (p. 274).

It appears that *Verfremdung* has broad connotations and a particularly strong societal emphasis. Whether seen as an artistic strategy or a societal one, *Verfremdung* aims at making the audience see through the customs and habits of mind which constitute ideology. Making the familiar strange is politically significant in relation to the themes at hand, but the means to achieve it are artistic (Brooker, 1998). *Verfremdung*, it appears, allows a rich range of emotions and reflection.

In this chapter, I have chosen to use the German term *Verfremdung* rather than a term like alienation or estrangement in order to remain true to the very specific type of alienation that it refers to. In a context where the aim is to examine performativity on Instagram there is also a real risk of confusion. For example, alienation could refer to a distance to immediate experiences that a constant need for representation or #fomo (fear of missing out) can create. There is also a point to be made about aesthetic choices in the medium. *Verfremdung*, therefore, as a primarily theatrical rather than societal term, seems to justify itself as it presents unforeseen possibilities for a visual platform with wide audiences. Teenagers,

in particular, can be both insightful and inventive when presented with
the possibility of *Verfremdung*.

From Representation to Commentary

In the essay *The Street Scene: A Basic Model for an Epic Theatre*, Brecht
(1982e) lays out the characteristics of epic theatre and discusses *Verfrem-dung* with the help of an example: an event taking place on a street corner.
A motor accident occurs, followed by a recap of the events by witnesses,
but here Brecht stresses that the actor portraying the events should not be
too perfect and should not transform into the people involved in it. He
later describes the *Verfremdung*: "What is involved here is, briefly, a tech-
nique of taking the human social incidents to be portrayed and labeling
them as something striking, something that calls for explanation, is not
to be taken for granted, not just natural" (1982e, p. 125).

Brecht's reflections on acting technique bring to mind the artistic
practice of Andrea Fraser. In the spirit of institutional critique, her
performance *Museum Highlights* (2005) mimics institutional language,
exaggerating the manners of a guided tour that creates a mystical aura
around artworks. By ridiculing this convention, Fraser in fact achieves
a Brechtian *Verfremdung*. Her performances aim at critically exposing
how the art world operates, but interpreted with the help of Brecht,
this criticality is not only hers but something that her works inspire in
the audience. This is what one might hope for if *Verfremdung* is applied
to Instagram: that a critical and playful attitude belongs to both sender
and receiver. Exposing how social media works, how we as users operate
and how we react to the content we see is quite another thing than
turning one's back on these platforms altogether. To work like Andrea
Fraser would mean to make fun of the system and ourselves, from within.
Brecht's acting technique, as described in the example with the accident,
could mean that the narrator of an Instagram post looks at creating it as
something *striking that calls for explanation*.

Brecht often underlines the idea of *Verfremdung* as necessary to all
understanding of the world. When something appears "the most obvious
thing in the world" it no longer calls for explanation or a desire to under-
stand. To Brecht, this is giving up on trying to understand the world
(Brecht, 1982a, p. 71). On a platform like Instagram, *Verfremdung* could
mean a certain freedom from being carried away or an attempt to under-
stand motives, behaviors, and reactions—while being engaged in it all. If

Instagram and its typical content are found to be detrimental to young people's mental health, then we as art educators could approach the problem in different ways: by hoping to see warnings attached to images, nurturing greater awareness among users or by imaginatively employing artistic techniques such as *Verfremdung* in images and text. Brechtian theatre might seem like an advanced reference for schoolchildren, but in my work over the past few years I have become convinced that his written titles on stage are in fact a forefather of today's meme culture. When presented with the possibility of creating classical art memes, 13 year olds come up with hilarious commentary to famous paintings, as if working in a language they are fluent in. The step from everyday use of social media to artistic experimenting has never been awkward. Fiction, exaggeration, and commentary come naturally after an introduction and don't even require much encouragement.

Working creatively with ways that become an integral part of the experience is both in tune with the nature of art education and loaded with potential that echoes the spirit of early twenty-first century avant-garde. What makes Instagram particularly exciting is that it is easily available for everyone—and this is where the societal dimension of Brecht's epic theatre comes alive.

CONCLUSIONS

The reactions to Amalia Ulman's project *Excellences & Perfections* as well as research on the impact of Instagram suggest that it might make sense to approach Instagram from the perspective of *Verfremdung*—in the art world as well as the art class. In a Brechtian sense this would mean an attitude of critical reflection while browsing one's photo feed and a creatively critical attitude to uploading content, perhaps in the form of reflexive meta-commentary or a take on acting techniques to achieve a *Verfremdungseffekt*. The most obvious thing in the world should call for explanation and be made to look strange, the spectator turned into an observer, and feelings can be replaced by reason, as Brecht has described. The principles for epic theatre present exciting possibilities when applied to social media.

Brecht wanted the spectators of his plays to see themselves as active members of society. The role of the narrative and elements of *Verfremdung* in epic theatre was to arouse a capacity for action. If art education

aims to nurture active participation in visual culture, then perhaps a coupling of Brechtian theatre and social media makes sense.

Instagram is one platform that I have chosen to examine here. Other highly visual platforms with similar potential for self-expression might prove more popular in the future. Only in the past year, TikTok has rapidly become a favorite among younger teenagers and children with its 15 second moving image format. Nevertheless, Instagram currently remains the choice of powerful influencers and a site of everyday imagery across different age groups. Authenticity remains an expectation despite all we know and a lack of a critical distance—and playfulness with the premises—might be what affects the mental health of many. It could be interesting to look at a general TikTok aesthetic in a few years to see whether youth has taken social media in an entirely different direction.

I would like to conclude by presenting an art assignment that intervenes in the impulse to create more "fodder for the entertainment apparatus," to speak with Brecht, and inspires an imaginative approach to Instagram. The simple instruction is informed by artists who are using such instructions as Yoko Ono, Sol LeWitt, Peter Liversidge, and others who have created instruction pieces. It could be adapted to a group or read as an exercise for the imagination.

CREATE FICTION ON INSTAGRAM

Make careful choices as if involved in a film production: cast, hair, make-up, costume, set design, lighting, shooting locations.
Upload a screenshot that shows how you work, filters and all.
Think of your audience as active members of society and choose hashtags accordingly.
Repeat and keep *Verfremdung* alive.

NOTES

1. In opposition to the Aristotelian concepts of epic and dramatic writing, seen in this tradition as fundamentally different in character, Brecht talked about epic theatre. He also highlighted the educational aspect of the epic theatre, calling it theatre for instruction, as opposed to mere pleasure. This was the origin of his concept of the learning play (*Lehrstücke*) which explicitly addressed societal themes and the role of the spectator.

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