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TRANSILLUMINATING CLIMATE CHANGE

Abstract
This essay studies the problematics of visualizing climate change through research and photography. Messages in the media about climate change have often been stereotypical, extreme or controversial. This type of imagery may be shocking, but it may also make the issue feel distant, abstract and difficult to relate to. This essay reflects on an empirical research into Instagram users' posts about climate change, using photography as a mode of articulating awareness about the climate crisis. Theoretically, this paper seeks to elaborate on the epistemic possibilities of visibility and photography as a method of research. The essay draws on two interrelated projects, the first of which is an empirical analysis of 42 Finnish ecological Instagram accounts. The Instagram research identifies six 'climate practices' that are ways of connecting to the climate crisis through being and doing. The climate practice of transilluminating and its visualization in Instagram photographs is then further analysed. "Transilluminating" refers to revealing the normalized environmentally harmful practices of carbon-intense modern societies and their production systems. The second project aims to deepen the understanding of climate practices through photography. The photography project allows room for artistic interpretation of empirical results. In the photographic project *Intense Carbon*, transilluminating is interpreted as a movement against the modern, carbon-intensive society.

Keywords
Climate practices; photography; visibility; carbon-intensity.
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Climate change is a massive issue so widespread that we cannot grasp it empirically[1]. It progresses constantly, and it is invisible. Climate change is also difficult to grasp visually. Previous research has shown that climate visuals in global mainstream media have emphasized conflict, disaster, and crisis[2]. This type of imagery may feel distant and abstract and is ineffective at motivating personal engagement with the issue[3]. Some

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[1] T. Morton, *Dark Ecology: For a Logic of Future Coexistence*, New York: Columbia University Press, 2016, 11.

[2] O. Hahn, E. Eide, Z.S. Ali, "The Evidence of Things Unseen. Visualizing Global Warming", in E. Eide, R. Kunelius, eds., *Media Meets Climate: The Global Challenge for Journalism*, Göteborg: Nordicom, 2012, 221-246. Accessed on October 31, 2020. Available at: https://www.nordicom.gu.se/sv/ system/tdf/publikationer-hela-pdf/media_ meets_climate.pdf?file=1&type=node&id=10330&force=0.

[3] S. O'Neill, S. Nicholson-Cole, "'Fear Won't Do It': Promoting Positive Engagement with Climate Change through Visual and Iconic Representations", *Science Communication*, 30, 3 (2009): 355-379. Accessed on August 15, 2020. DOI: 10.1177/1075547008329201; J. Niemelä-Nyrhinen, J. Seppänen, "Kuvajour-

of the core visual representations of climate change havebeen viewed as fear inducing[4], unrelatable and distant. In this way, climate change is also a crisis of cultural imagination and visual representation[5].

Making visible an issue like climate change is an epistemic practice of creating a representation of the unseen[6]. Making visible enables recognition. This means bringing naturalized but rejected knowledge to the forefront of consciousness so that, in a moment of recognition, a prior awareness flashes before us, effecting an instant change in our understanding of that which is beheld[7]. This may be the recognition that we are an integral part of nature, which has agency of its own, or that our comfortable way of living could not exist without extracting energy from the earth.

These types of recognitions may also induce human agency. Andrea Brighenti writes that visibility is a metaphor of knowledge, but it is not simply an image: it is a social process. Vision confers a sense of power. Everything we see is at least potentially within the reach of personal action. As Brighenti writes: "What is not seen is not thematized as an object in the domain of action"[8]. Therefore, making things visible also brings them into the sphere of action. Therefore, a diverse repertoire of climate imagery could also produce possibilities for different types of agency.

In this essay, the visibility of climate change is examined through a climate practice called "transilluminating". Transilluminating was identified, in my empirical research on Finnish Instagram users, as one of the ways they related to climate change. In this essay I will present transilluminating as a climate practice and further develop it through photography[9], which opens a way for conceptual thinking beyond the empirical research results.

PART I: TRANSILLUMINATING IN INSTAGRAM POSTS

The photographic project presented here is based on empirical research on Instagram posts discussing climate change. The data were collected from Finnish Instagram users who produce ecological content on their accounts. The data included 42 Instagram accounts. All posts made by these accounts throughout the research period (1.8.2019–30.11.2019) were collected as screenshots[10], and climate-related posts (N = 251) were identified through keywords (e.g., climate change, climate action, carbon sink, carbon neutral and climate friendly).

nalismi ja eettisen kuluttamisen haaste" [Visual Journalism and the Challenge of Ethical Consumption], *Media & viestintä*, 42, 3 (2019): 165-186. Accessed on August 8, 2020. DOI: 10.23983/mv.85780.

[4] O'Neill, Nicholson-Cole, "'Fear Won't Do It': Promoting Positive Engagement with Climate Change through Visual and Iconic Representations".

[5] M. Rainio, "Kuinka katsoa ilmastonmuutosta? Näkymätön ilmasto, osallisuus ja taide", in K. Hiltunen, N. Sääskilahti, K. Ahvenjärvi, eds., *Kuulumisen reittejä taiteessa* ["How to Look at Climate Change? The Invisible Climate, Participation and Art", in *The Routes of Belonging in Art*], Turku: Eetos, 2019, 229-251.

[6] N. Uusitalo, "Unveiling Unseen Climate Practices on Instagram", *Novos Olhares: Revista de Estudos Sobre Práticas de Recepção a Produtos Mediáticos*, 9, 1 (2020), 120-129. DOI: 10.11606/issn.2238-7714.no.2020. 171996. 120-129.

[7] A. Ghosh, *The Great Derangement: Climate Change and the Unthinkable*, Chicago: University of Chicago Press, 2016, 4-5.

[8] A. Brighenti, "Visibility: A Category for the Social Sciences", *Current Sociology*, 55, 3 (2007): 323-342 (324). Accessed on July 28, 2020. DOI: 10.1177/0011392107076079.

[9] Envisioning climate change is a three-year post-doctoral research project funded by Kone Foundation.

[10] The data are stored temporarily for the duration of analysis but will not be stored long term.

The analysed data included the images, text and hashtags. The contents of the posts were analysed through qualitative content analysis to identify climate practices, which refer to material acts that situate individuals in relation to climate change, and, in doing so, necessarily resituate people in relation to the logics of global capitalism and market ideology[11]. In practice, both textual and visual contents of the posts were coded in the qualitative coding software package Atlas.ti, in order to identify concrete ways of doing and being connected to climate change, including such concrete activities as vegan food consumption, zero-waste lifestyles, low-carbon travelling and flight strikes[12]. Through further inductive qualitative content analysis of the data[13], six meta-practices were identified: detaching, reforming, transilluminating, persevering, caring and consolidating[14]. I interpret these meta-practices as contradictory to practices valued in global capitalism, such as mass-consumption, limitless energy extraction and competition[15]. Here, I concentrate on one specific climate practice: transilluminating.

Transilluminating refers to acts by which Instagram users highlight naturalized practices and structures of carbon-intense societies. It also refers to critical examinations of the relations between production and consumption. In the Instagram posts studied, transilluminating was achieved by showing the kinds of emissions created by "ordinary" ways of living: "In Finland the climate impact of household food loss equals the emissions from 100 000 cars" (Instagram user 2). Transilluminating was also present in drawing links between climate change emissions and individual practices. For instance, the hashtag #carbonfootprint was connected to users' calculation and posting of their personal carbon footprint: "In my weekend post I revealed my carbon footprint, and you can find the link in the bio" (Instagram user 3). Transilluminating was presented mainly in the form of data and numbers pertaining to certain issues, and sometimes through graphs. Transilluminating pointed critique to systemic relations through personal images: for instance, Instagram users showed how they used items that had been recycled, fixed or broken, and tied these images to a critique of production and consumption through textual cues[16].

The transilluminating happening on Instagram can be problematized for the individualistic viewpoint of climate change. Calculating the carbon footprints of individual consumer choices shifts the emphasis away from corporate or state-level actors' responsibilities. It seems as though sometimes climate conscious individuals want to reverse decades of fossil fuel consumption by shopping less and shopping green. This type of ecopiety reflects and perpetuates the logics of global capitalism and market ideology[17]. On the other hand, transilluminating is a worthy and fruitful practice when it is also reaches structural, cultural and psychological reasons behind climate change. Transilluminating could, in fact, be a climate practice which creates recognition of the systemic challenges of moving towards carbon-neutral societies.

[11] S. McFarland Taylor, *Ecopiety: Green Media and the Dilemma of Environmental Virtue*, New York: New York University Press, 2019.

[12] Uusitalo, "Unveiling Unseen Climate Practices on Instagram", 120-129.

[13] K. Elo, "The Qualitative Content Analysis Process", *Journal of Advanced Nursing*, 62, 1 (2008): 107-115. DOI: 10.1111/j.1365-2648.2007.04569.x.

[14] A detailed description of the empirical study can be read in Uusitalo,"Unveiling Unseen Climate Practices on Instagram".

[15] Descriptions of all six climate practices can be found *ibid.*

[16] *Ibid*., 120-129. DOI: 10.11606/issn.2238-7714.no.2020.171996.120–129.

[17] McFarland Taylor, *Ecopiety*.

As was mentioned earlier, recognition is integral for enabling agency. In the following, I will develop transilluminating as a photographic practice which could create recognition visually.

PART II: TRANSILLUMINATING THROUGH PHOTOGRAPHY

My photography project *Intense Carbon* aims to visualize through conceptual photography the eminence of carbon-based energy forms in our everyday lifestyles. The photography project creates visibility of our dependency of fossil fuels, a recognition which seems to be hidden in our modern capitalist consumption societies.

The project presents images of anthracite, which is a dark and dense form of coal formed over 300 million years ago. Anthracite is a high-quality variety of coal that burns at higher temperatures and emits fewer toxic products and contaminants, such as heavy metals, than does lower-grade coal[18]. Anthracite is one of our connections to energy history, as it is known to have been first used in 1755 by gunsmiths in Pennsylvania, USA[19]. In the 19th century, anthracite coal supported levels of urban and industrial growth impossible in a world powered by water, wind and wood[20].

Figure 1 - *This energy is old* [Uusitalo, 2020]

We consider human-made objects to be old when they are over 100 years old. Antique, in fact. Anthracite is the oldest type of coal, it was formed from biomass that was buried over 300 million years ago[21].

Anthracite is antiquity on steroids; it is antiquity manifest. Still, one chunk of shiny anthracite costs only around 1 euro. History is cheap in anthracite form.

[18] M. Porta, J.M. Last, *A Dictionary of Public Health* (II ed.), Oxford: Oxford University Press, 2018. Accessed July 28, 2020. https://www-oxfordreference-com.libproxy.tuni.fi/view/10.1093/acref/9780191844386.001.0001/acref-9780191844386-e-785?rskey=JTArOA&result=2.

[19] K.K. Chatterjee, *Uses of Energy, Minerals and Changing Techniques*, New Age International Ltd, 2006. Accessed August 26, 2020, http://ebookcentral.proquest.com/lib/tampere/detail.action?docID=325863.

[20] C. Jones, *Routes of Power: Energy and Modern America*, Cambridge: Harvard University Press, 2014, 60. Accessed August 28, 2020. https://andor.tuni.fi/permalink/358FIN_TAMPO/176jdvt/cdi_askewsholts_ vlebooks_9780674419612.

[21] J.M.K.C. Donev *et al*., "Energy Education – Anthracite", 2018. Accessed August 27, 2020.https://energyeducation.ca/encyclopedia/Anthracite#cite_note-env-2.

My photography project is informed by, but not tied to, the empirical research on transilluminating as a climate practice. My aim was to visualize climate practices without repeating the imagery of the studied Instagram posts. I recognized that transilluminating, like the other climate practices, is a reaction to and a movement against modern carbon-intensive societies and lifestyles. This inspired me to photograph a concrete expression of carbon intensity, anthracite. Through this project, I call for recognition of our current entanglements with energy forms. Recognition involves acknowledging something we already know and making this knowing visible. I investigated anthracite's attributes and its history both to inspire the photography and to guide interpretations of the photos (Figures 1-3).

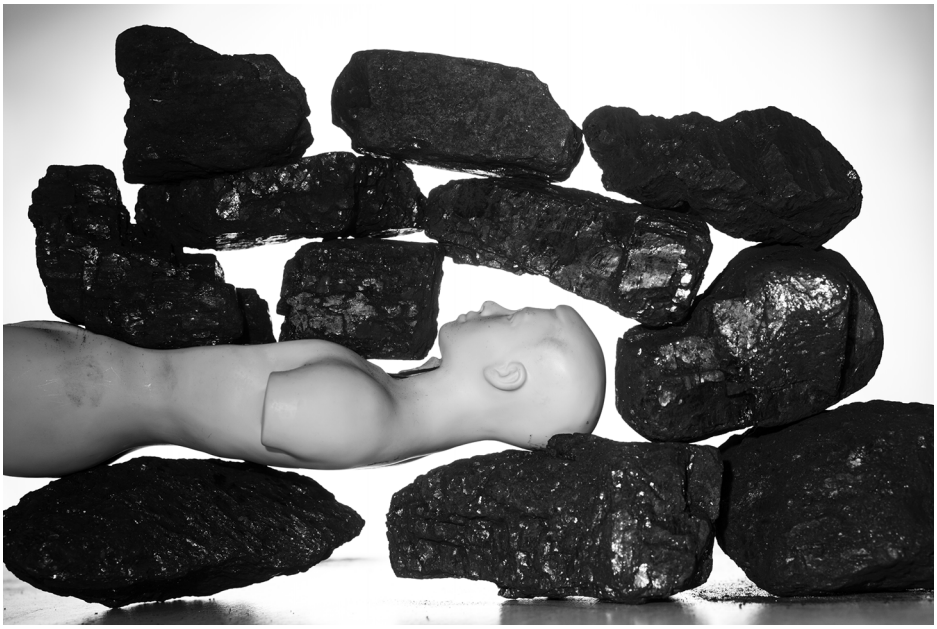
Anthracite is a generous subject for photography. It is shiny, beautiful and dramatic, and it sheds tiny specs of carbon dust when you rub it. Anthracite is concrete and, unlike many energy forms, can be held in your hands. To me, anthracite is enticing because it is prehistoric, and our recent history is formed through using different types of fossil fuels.

Figure 2 - *For the love of coal* [Author, 2020]

Consumers discovered the ease of adding coal to keep a fire burning overnight. Adding was much easier than starting a new fire in the morning[22].

Anthracite kept homes warm in winter, lowered factory production costs and enabled faster transportation of materials and goods. For most people, life was better with coal than without it[23].

Figure 3 - *Under pressure* [Author, 2020]



Try to imagine the biomass which lived and died, was subjected to pressure of overlying strata and was compressed, hardened and dehydrated to form anthracite[24].

How many species of swamp vegetation is present in one lump of anthracite, how many kilograms of swamp creatures?

The humans mining and burning the anthracite 300 million years later are one type of biomass. We are alive today to contemplate our future forms.

EPILOGUE: KNOWING THROUGH ART

The photographic project *Intense Carbon* aims to bring past and current entanglements with carbon-based energy into view. The empirical research on Instagram posts unveiled climate practices, meaning ways of being and doing, through which people can connect

[22] Jones, *Routes of Power*, 64.
[23] *Ibid*., 74-75.
[24] M. Porta, J.M. Last, *A Dictionary of Public Health*, ed., Oxford: Oxford University Press, 2018. Accessed July 28, 2020. https://www.oxfordreference.com/view/10.1093/acref/9780191844386.001.0001/acref-9780191844386-e-212?rskey=WFvd3u&result=1.

to climate change. Through the photography project, I came to interpret these climate practices as being bound to our fossil-fuelled histories. The photographic process invited me to use the empirical results from the Instagram research as a starting point for photographic interpretations.

In the studied Instagram posts, fossil fuels were often presented as something from the past to be discarded, something that one must detach from and overcome. While this may be a justifiable and sound goal, it is also important to create new ways of interpreting fossil-fuel dependency. Finnish photographer Miikka Pirinen visualizes one aspect of carbon-intensity in his photography project *Fossil Fueled Work*. His project follows the lives of modern fossil industry workers, who are seen as humane and moral individuals deserving that their "voice be heard and body be seen"[25]. *Intense Carbon* also attempts to look towards instead of away from fossil fuel.

Intense Carbon invites us to turn inwards and examine our personal and societal attachments to energy forms. Even though we do not see the extraction of energy in our comfortable everyday lives, it is present in our expectations and experiences of life. For instance, we do not see the history of energy production which has produced our well-being and house-hold goods. Gan *et al*. call this "haunting": the presence of the past can be felt only indirectly, even though every landscape is haunted by past ways of life[26].

What would happen if we started to think of objects in terms of the energy that has been burned throughout history for them to emerge and be used? This type of climate consciousness seems to induce a spectrum of responses from total denial to feelings of guilt, anger and hope to ecopiety – the performance of green virtue[27]. There is a need to create multi-layered points of entry to climate change awareness and invite strange feelings, which may morph into new ones. Timothy Morton calls this dark ecology: ecological awareness that is "dark-depressing, dark-uncanny and strangely dark-sweet"[28]. This means that ecological recognitions require us to feel uncomfortable and grow into new emotional landscapes. Donna Haraway's much-cited work asks us to "stay with the trouble". By this, the author means that our task is to stir up potent responses to devastating events and learn to be truly present without seeking refuge in abstract imagined futures[29].

Art is a "way of knowing, problem solving, healing and transformation" that can be used as a vehicle for research[30]. Scientific research requires a degree of reduction, generalization, categorization, naming and prioritization of phenomena, which always does violence to the richness and diversity of reality[31]. Art is a non-moral form of expression that offers a range of discursive, visual and sensual strategies not confined by the regimes of scientific objectivity, political moralism or psychological depres-

[25] Miikka Pirinen: https://www.miikkapirinen.com/portfolio/#/fossil-fueled-work/. Accessed August 27, 2020.

[26] E. Gan, A. Tsing, H. Swanson, N. Bubandt, "Introduction: Haunted Landscapes of the Anthropocene", in E. Gan, A. Tsing, H. Swanson, N. Bubandt, eds., *Arts of Living on a Damaged Planet*, Minneapolis: University of Minnesota Press, 2020, G1-G14 (G2).

[27] MacFarland Taylor, *Ecopiety*.

[28] Morton, *Dark Ecology*, 5.

[29] D. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*, Durham: Duke University Press, 2016, 1-4.

[30] S. McNiff, "Preface": Firing up the Base", in S. McNiff, ed., *Art as Research: Opportunities and Challenges*, Bristol: Intellect, 2013, XIII-XVI (XIII).

[31] J. Varto, "Foreword", in M. Hannula, J. Suoranta, T. Vadén, *Artistic Research Methodology: Narrative, Power and the Public*, New York: Peter Lang, 2014, VII-X.

sion[32]. Timothy Morton calls art "thought from the future" and also thought we cannot explicitly think at present[33]. Thus, art photography is an epistemological practice of deconstructing knowledge of the world but simultaneously enabling new epistemic constructs.

Art-based research opens a way of letting go of scientific knowledge claims, while continuously working in relation to them. Art does not promise to work in any specific way; it doesn't have rules for epistemic interventions and its rearrangements of knowledge and feeling are unexpected and sometimes chaotic. Art changes the world through transforming the "sensible" reality of the senses, which may change ideas, understanding and insight[34]. My use of art-based research is aimed at deepening and re-interpreting empirical research results through photography. The conceptual photographs in this essay will also guide my own research process further by combining intuition, artistic expression and scientific thought in novel ways.

[32] H. Davis, E. Turpin, "Art & Death: Lives between the Fifth Assessment & the Sixth Extinction", in H. Davis, E. Turpin, *Art in the Anthropocene: Encounters among Politics, Environments and Epistemologies*, London: Open Humanities Press, 2017, 3-29 (4).

[33] Morton, *Dark Ecology*, 1.

[34] Varto, "Foreword".