# Aalborg Universitet



# Rogue Things, Biotechnical Thresholds, and Post-cybernetic Museums

A Critique

Søndergaard, Morten

Published in: Politics of the machines 2021 - Rogue Research

DOI (link to publication from Publisher): 10.14236/ewic/POM2021.41

Creative Commons License CC BY 4.0

Publication date: 2022

**Document Version** Publisher's PDF, also known as Version of record

Link to publication from Aalborg University

Citation for published version (APA):

Søndergaard, M. (2022). Rogue Things, Biotechnical Thresholds, and Post-cybernetic Museums: A Critique. In M. Christensen, F. Conradi, M. Søndergaard, L. Beloff, & H. Choubassi (Eds.), *Politics of the machines 2021 - Rogue Research* British Computer Society. Electronic Workshops in Computing https://doi.org/10.14236/ewic/POM2021.41

#### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
  You may freely distribute the URL identifying the publication in the public portal -

#### Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

# Rogue Things, Biotechnical Thresholds, and Post-cybernetic Museums: A Critique

Morten Søndergaard Aalborg University Copenhagen, Denmark mortenson@hum.aau.dk

In this paper, I will propose that if we begin to understand museums as mediation-technologies then they could be seen as producers of thresholds that may navigate between anthropological problems and biotechnological umwelt. The question is: who navigates the archive of thresholds? A question which leads to the framing and naming of the post-cybernetic museum.

Rogue Things, Asperitas Clouds, Biotechnical Thresholds, Post-cybernetic Museums, Zero Dimensions, Lightning Museums.

# 1. INTRODUCTION

This paper is departing from an on-going research collaboration together with a collective of artists, curators and theoreticians focused on the topic and problem of evidencing post humanity. It is from here my investigation of and critical reflection on rogue things and biotechnical thresholds, as well as the notion of the post-cybernetic museum, begins and is made operational. The issue in general is the how to navigate a blurred field of research into invisible and intangible nonhuman 'phenomenon' (in want of a better word) through a limited and faulty 'psychology of intuition' as well as evermore neo-rational and over-hyped 'ideals of science'.

In the following, I will operate a soft version of the method of the French philosopher Michel Serres. This method oscillates the writing and presentations of a problem 'between the ideals of science and the temptations of literature'. He uses metaphors and other poetic figures to reveal what Serres terms as 'the third element', the overlooked and invisible element of communication - and indeed, communication itself - which is what renders boundaries and thresholds permeable. It is through the appropriation of Michel Serres' method of revealing thresholds by poetic narrations I will be framing and investigating 'rogue things' and what they (possibly) do (or do not) do specifically in the context of museums as (metaphors and symbols of) kaleidoscopic architectures and spaces of communication of knowledge and histories about art and cultural/natural heritage.

Building on the most recent writings by the French philosopher Michel Serres, I propose that it would

be possible to see alternative prospects for the museum where it operates beyond the technological media reveal (and beyond being a 'visualization technology' (Whitehead, 2012) and toward a strategy of para-curating. Here, I argue, inventive and moral obligations of the posthuman crisis threatening our planet may generate alternative histories of biotechnological ideas and experience enabling museums to 'operationalize' archives of rogue things and the biotechnical thresholds they operate.

### 2. BIOTECHNICAL THRESHOLDS?

Paradoxically, we are facing dealing with, on the one hand, a rationally detected problem, climate change, created by rational societal dynamics - oppositional energy systems and economic philosophies, cold and hot wars - which have failed; and on the other hand, a circumstance where the solutions are not the 'neo-rationalism' which currently is dominating the rhetorics of Western democracies. How and what is framing our judgments will also be that which controls our systems of perception, structures, and temporal imaginaries?

In the Wood Museum (2018), Christian Yde Frostholm writes the trees into a new kind of cultural history in the absolute periphery of the human radius of attention. In the Lightning Museum (1982), Per Højholt lets the museum as momentary memory event arise and destroy itself as weather events, humanity exposed by biotechnological imaginations

Operating in a transforming topological space, the museum as medium is oscillating between para- and epi-genetic tendencies of bio-technical memories,

histories, and catastrophes. Para-curatorial methods are needed to operate and navigate the externalized objects and the structural epi-topology of the digital culture of zero dimensions.

2019, Christopher Whitehead, English In theoretician of museums, found himself in southern Spain, invited by the Spanish National Museum to work on a sound walk about the remains from the Califate culture in the region. While working on the project, several boats with refugees arrived at the shores, and he witnessed the chaotic and dramatic situation which ensued - boats full of people being turned back or, if shored, rounded up and placed into camps. While this was happening, the Museum project aimed at informing about European cultural heritage of human rights, freedom of speech etc. continued regardless. This made Whitehead reflect on the status of boundaries and bias in the idea of European cultural heritage - and what constitutes the museum as a fundamentally European construction?

The Austrian art mediator and curator Nora Sternfeld has suggested the formation of *paramuseums*, which should serve as spaces for delearning and re-appropriation of existing modes and conditions of knowledge; spaces that would enable the visitor to renegotiate his/her understanding of the world, art, history, and the future. According to Sternfeld, one can speak of a crisis of representation in Western museums<sup>1</sup> where heroic tales of the (primarily national and colonial) pasts are still constructing the temporal visit and visualization technologies of the exhibitions. She emphasizes the importance of learning one's own strong narratives and patterns of interpretation to make room for new, curious encounters:

What if the museum were not defined by collecting, preserving, researching, and mediating (and thus by the national, institutional colonial project of Western Enlightenment), but on the transgenerational handing-down of knowledge - knowledge of, with, and through objects and matter? What if the museum was a 'space of remembrance', a 'contact zone', or a 'third space' in which to share narratives and history? (Nora Sternfeld, 2016, 158)

Michel Serres proposes there is hope in the face of posthuman crisis. According to Serres, we are 'condemned' to become more inventive, intelligent, and transparent because we all share the 'new universalizing' mobile screen. Therefore, he proclaims that the days of repetitive work are over and ends a talk with...

...a catastrophic word: new technologies have condemned us to become intelligent. Since we have the knowledge and the technologies before us, we are doomed to become inventive, intelligent, transparent. Inventiveness is all we have left. The news is catastrophic for the grumpy, but it is exciting for the new generations because the intellectual work is obliged to be intelligent and not repetitive as it has been until now. (Serres, 2007, 138)

In-between Nora Sternfeld's idea of a para-museum and Michel Serres' ambiguous catastrophic word the contour of a post-cybernetic museum emerges. It is through the exteriorization of our consciousness in technology and media and our participation in media ecologies that our very experience of temporality arises in the first place (Stiegler, 1998; Lund 2019). The museum should be seen as playing an essential role in refining that experience, as well as revealing it as a 'biotechnical' threshold. With the increasing presence technologies of network and infrastructures, the need for critical methods of reflecting the experience of biotechnological life has only intensified and accelerated. I would claim that there is a need for attending to the 'boundaries' of memory, temporality and screens, and what conditions those boundaries as biotechnical thresholds. Post-cybernetic methods are needed to negotiate between the catastrophes of the past, and those of today, that are structuring our lives and modes of knowing.

## 3. THRESHOLDS, BORDERS, BOUNDARIES...

In April 1986, I was living in France. Phoning home from a phone booth, I found my parents very distraught: there had been an accident on a nuclear power plant in a city in Soviet Ukraine, discovered only because the radiation was measurable in Scandinavia. In France, there was no trace of that story - and in the days following this and other phone calls, the French authorities were seemingly attempting to ignore that anything had happened maybe hoping it would 'blow over'. However, after several days, and the accident in Chernobyl could no longer be ignored, they announced that people in France should not worry because the radiation had not crossed the French borders... and that nuclear power plants, of which there were and are many in France, were 'absolutely safe'. A message that, even back then, made me pause and question the status of borders and boundaries in the face of invisible nonhuman forces.

What is the status of such 'rogue things' and events and what condition them as biotechnical thresholds in a cultural context?

How could the museum become a medium of the experiences of posthuman crisis? Is it possible to see the focus of the museum shift towards an innovative mode of possible better futures for the world in the face of accelerating and enframing technological mediation (Heidegger, Zizek, Kittler, Stiegler)? Or, alternatively, would it be possible to see the invention of a museum emerge based on a different view of technology? One, in which human

agency and embodiment (Hansen, 2004, 589) (Serres, 2007) is in play in new and alternative ways?

What are the connections between the idea of posthumanity seen as essentially a biotechnical lifeform (Hayles, 2010, 24; Mitchell & Hansen, 2010), and the museum understood as medium and 'visualization technology' (Whitehead, 2012) 'revealing' historical things and ideas in anthropological, structural, and phenomenological ways (Heidegger, 1946; Allen, 2019)?

According to media theory (Kittler, 1999; Flusser, 2011; Stiegler, 1998; Hansen, 2004), because we organize our social enterprise by using technologies and media it is possible to assume a fundamental connection exists between our use of technologies and media which is conditioning our ability to relate to the nonhuman world and our experience of posthuman crisis.

Cape Canaveral, 1986: The Challenger accident. According to Michel Serres (1986) accidents and disasters transform the imaginings of machines and humans and what conditions their relations and existence. Machines and humans are somehow equalized without the possibility of (full) control of external nonhuman events and processes.

Thus, it is relevant to ask how the state of technological mediation, and biotechnical lifeforms, through the increasing proliferation of network technologies that frame and affect our experiences of the world, each other, and ourselves... how, in short, all these things affect and challenge the museum as medium of posthuman crisis? Is it possible to envision a paradigmatic turn in the way museums operate with history and cultural remembrance? And how would that turn look like?

### 4. ROGUE THINGS?

There are three main ways in which 'things' have been traditionally understood across the ages of information-gathering in museums:

- i) things as a gathering of properties ('bearers of traits') (anthropological)
- ii) things as unities of a sensory manifolds / multiplicities (phenomenological)
- iii) things as syntheses of matter and (rational) form (structuralist)

Each of these approaches delineated the character of things within a certain paradigmatic conception of the human-world relationship, and hence of the role of the museum (and archive).

Famously, Heidegger criticizes these traditional understandings and look instead at, what he then calls, things in themselves, tools, and works of art. Things in themselves (dt. 'Dinge an sich') are those material entities that have not been subjected to human intervention (a stone or a tree). In contrast to this, tools and works of art are akin because they are crafted by human hands and, thus, all artists are, in a sense, artisans.

Every work has a 'thingly character' (Heidegger, 1977, 3). Yet there is something in the work of art that makes it irreducible to a mere artefact (such as a hammer), and that puts it 'over and above its thingliness' (ibid.). One of the effects of the appearance of the work of art (we are still with Heidegger) is the disturbance of everything around the work. The work estranges us from the immediate circle of beings in which we believe ourselves to be at home. We think that things are familiar, reliable, and ordinary. Yet, the work of art shows us that 'the ordinary is not ordinary, it is extraordinary, uncanny' (Op.cit., 31). What presents itself to us as natural (...) is merely the familiarity of a long-established habit which has forgotten the unfamiliarity from which it arose' (Ibid, 7).

In more recent years, the critique of the traditional positions has gradually been revisited under the impression (and pressure) of an accelerating presence of, and constantly transforming, media technologies and their infrastructures. However, the basic theoretical positions of the key-institutions of information gathering, sensing, and synthesizing have not co-evolved - they are very much still harboring a conditioned selection of anthropological, phenomenological, and structuralist positions<sup>2</sup>. The mediated threshold of things and information in museums remain largely unreflected despite the radical transformation of conditions and ideas of culture and society surrounding the museum as medium - not only as a communication apparatus (Benjamin) and a constructed 'milieu' and 'transducer' of subjects, things, and information (Stiegler). But more acutely as the medium of posthuman things and (the experience of) posthumanity. In this way, it is possible to make the claim that works of art are not alone in revealing the unfamiliar in the familiar; nonhuman processes and events are increasingly uncanny, to an extent that it is possible to see art works becoming 'something else' (in the techno-cultural entanglement of capital and power) whereas 'something else', then, is communicating the unfamiliar in the familiar in nonhuman processes and events.

An example could be what we normally would regard as the familiarity of looking out at the sky in the morning during coffee, or in the evening when driving home from work. But the familiar clouds reveal unfamiliar nonhuman processes. Here, in the dramatic shape of a 'new cloud' in the sky, in my country spotted for the first time over Copenhagen on 25 August 2021. In 2017, this new cloud was first seen over the plains of the prairie in Mid-western USA and subsequently named 'Asperitas' clouds by Meteorologists. The name translates approximately as 'rogue' or 'roughness', or as it were, we could name them rogue thermodynamic things. The clouds are closely related to 'undulatus clouds', but it is yet unclear to rational science<sup>3</sup> more specifically how and why they even appeared.<sup>4</sup> They seem to be weather and climate change phenomena, out of the range of rational science as well as beyond our capabilities of interpreting and understanding Such rogue things, uncategorized clouds, produce a threshold between scientific categorization and literary imaginings.

What we sometimes seem to be left with are attempts to solve anthropological problems in a biotechnical cultural setting, but this is not enough if we are to grasp the real ontological challenges of art and technology according to Mexican philosopher Maria Antonia Valeria Gonzales (Gonzales, 2019).

Comparing Nietzsche and Ortega Y Gasset, Valeria Gonzales claims that there is a move from troubled self-understanding and -exploration towards machine visions in the perspective of art and technology. Ortega: understanding technology is a condition of what is human. Mapping out how technology was and is being used; and how technology itself is being produced, and what it is in turn producing. Thus, technology should not be reduced to its machines, Valeria Gonzales claims, but we should look at technology from where it produces its thresholds.

I would like to further this notion and turn it into a para-curatorial question: how did museums as medium produce certain kinds of thresholds? One way to approach this would be to look at the genealogy of thresholds produced by technical images.

In 'The universe of technical images', the media philosopher Villém Flusser outlined a differentiated scheme of embodied mediations of shifts in topological space that have in turn dominated evolutionary history of human culture and thus also the forms of sensory perception that have been possible in certain 'dispositive' periods. This Flusser presents as a countdown of the reduction of spatial dimensions that have been available to humans' experience of the world: 4, 3, 2, 1, 0. At the first fourdimensional level, human is not really human yet because he is completely immersed with his whole body into his environment. The next threedimensional level is dominated by her hands that grab things and change them, like an evolutionary sculptor. This is followed by an image phase in human culture in which two-dimensional images dominate, and human sight is primary. Then follows an evolutionary dispositive of linear one-dimensional texts and the work of primarily human fingers. And finally, in the zero-dimensional world of calculated and computer-generated technical images, a secret black box world of discrete numbers, dots, bits and

pixels, we are operating the embodied biotechnical dispositive at our fingertips. (Flusser, 2011).

Flusser's sketch of the historical changes of the dispositive conditioning of human's biotechnical sensory perception covers several thousand years. His critical description of the historical being of man in the world could be seen as the description of a movement from not influencing or producing anything at all in the phase of four dimensions, to a (current) historical point degree zero, where man herself creates everything s/he experiences and thus finds herself in a dimension-deprived experience-universe. A world in which humans are both the sender and the recipient of their own myths and constructions.

In continuation of this notion, it would be possible to ask critical questions about the status of the contemporary museum as a medium of experiencing the history of biotechnical lifeforms (and the history of experience as biotechnics through transforming diapositives of technical images). What constitutes a museum of zero dimensions?

Returning to Michel Serres, this notion of accelerated evolution of sensory perception of zero dimensions resonates with, I would claim, what he calls 'a technical exo-Darwinism':

Writing and printing were memories, and today you have better memories than your predecessors. Indeed, we have lost our memory subjectively, but it has externalized objectively. I call this phenomenon 'technical exo-Darwinism'. There is externalization of objects, and these objects evolve in place of our bodies. You see that what you once took for a cognitive faculty, memory, is not a given and permanent cognitive faculty, but that it depends on the medium. (Serres, 2007, 133)

Thus, it could be proposed that, following the different topological setting of knowledge and human existential expression, is conditioned by the bio-technical externalization of objects, as rogue things.

But how might a museum operate this condition? And how, if at all, might the post-cybernetic museum operate with a different kind of technical memory (of externalized objects<sup>5</sup>) in-between the neo-rational ideals of science and the temptations of literary imaginings?

### 5. POST-CYBERNETIC PROPOSITIONS

Where 'classic' cybernetics turned the attention towards feedback (and the automated (self)control of systems), post-cybernetics, I would claim, restages the feedback as evidence of post humanity – bringing an acute sense of navigating mediated time and non-human temporality. This narrative already has a history in media theory: In his essay on Art in the Age of Mechanical Reproduction, Walter Benjamin describes the technological conditions that shape the conditions of possibility for aesthetic expressions:

Within great historical periods, the nature and character of their sensory perception also changes in step with the overall form of existence of human collectives. The nature and way in which human sensory perception is organized - the medium in which it takes place - is not only natural but also historically conditioned. (Benjamin, 2010, 19)

However, what we today would call *medium* does not occur very often in Benjamin's writings. Instead, he used terms such as 'apparatus' and 'mittel' (German for 'middle') (Benjamin, 2010).

Nevertheless, it is possible to establish that Walter Benjamin's 'medium' is the all-encompassing force field that connects the human sensory with the world by being an interplay between natural (physiological, physical) and historical (social, technological, aesthetic) factors (Wilke, 2010, 40).

The German media theorist Friedrich A. Kittler is interested in the history of media and technologies. His method is to examine what can be said and thought within a given period. The premise for this, according to Kittler, is determined by the development of new media and technologies. (Kittler, 1999, 23)

In his influential article on Media Theory, the American media theorist Mark B. N Hansen describes how Kittler's media theory establishes a split between two types of approaches to media: one that examines the experiential dimensions of media (including digital media), and one another that, in a media archeological way, digs out the technical logics of the media - logics that, according to Kittler, are only sporadically related to human perception. It was, Hansen believes, primarily the latter that interested Kittler (Hansen 2006, 297). However, Hansen criticizes Kittler's view that media can be autonomously dissected out of the embodied human context, and emphasizes instead...

...the irreducible bodily or analog basis of experience which, we must add, has always been conditioned by a technical dimension and has always occurred as a co-functioning of embodiment with technics. (Hansen, 2006, 8-9)

Mark B. Hansen further substantiates his way of thinking with the help of the notion of transducing and the concept of prosthesis. man is essentially technical, and it is part of his very essence to make use of prostheses in sensemaking. As such, as Mitchell and Hansen propose in their introduction of Critical Terms for Media Studies, we are all leading a biotechnical form of life: What the emergence of the collective singular media betokens is the operation of a deep technoanthropological universal that has structured the history of humanity from its very origin (the tool-using and inventing primate). In addition to naming individual mediums at concrete points within that history, 'media,' in our view, also names a technical form or formal technics, indeed a general mediality that is constitutive of the human as a 'biotechnical' form of life. (Mitchell and Hansen, 2010)

It is possible to arrive at a general media concept understanding humanity as a biotechnological form of life and that our very sensory perception is conditioned by the history of its mediation.

Secondly, the museum as medium of biotechnical life is configuring a topological space different from the Euclidian/Cartesian. Here, not only distance has to be redefined but also the overall conditions for the production and experience of objects, subjectivity, and the way cultural memory is constructed:

Stop saying that new technologies have shortened distances. They actually transported us from one space to another, from a Euclidean, Cartesian space to a topological space where distance has to be redefined. (Serres, 2007, 130)

This perspective on feedback on a topological scale that Serres brings speaks to a paradigmatic shift in the way the systems of knowledge production is understood from the thresholds that technology produces.

The post-cybernetic position is addressing what I (inspired by Serres excluded 'third parties', those making communication possible – imagined in figures such as Hermes, angels etc) term the 'third machines', those thresholds between humans and machines we cannot control and will never control: the geopsychological and thermohistorical machines. The counter-evolutionary and biotechnical thresholds.

Finally, the post-cybernetic position raises questions about temporality and scalability of our ability to operate judgmental faculties in a techno-mediated culture and how this in turn may empower a paracuratorial strategy. How do we navigate, what do we tell our children, where should we find the stories that narrate a bias about a possible and sustainable future? Sustainable for whom and what?

# 5. REFERENCES

- Benjamin, W. (2010) The Work of Art in the Age of Its Technological Reproducibility. Grey room, 39, 11–38.
- Berry, D. M. (2014). Post-Digital Humanities: Computation and Cultural Critique in the Arts and Humanities. Educause Review.

https://er.educause.edu/~/media/files/articledownloads/erm1433.pdf (6 September 2021)

- Bijsterveld, K. & van Dijk, J. (2009) Chapter Three: The Preservation Paradox in Digital Audio. In K. Bijsterveld & J. van Dijk (Eds.) Sound, Souvenirs & Audio Technologies. Memory and Cultural Practices. Amsterdam University Press, Amsterdam.
- Chun, W. H. K. (2016). Ubiquitous Memory: I Do Not Remember, We Do Not Forget. Ekman, U., Bolter, J. D., Díaz, L., Søndergaard, M. & Engberg, M. (Eds.), Ubiquitous Computing, Complexity, and Culture (pp. 159-173). New York: Routledge.
- Flusser, V. (2011) Into the Universe of Technical Images. University of Minnesota Press, Minneapolis.

Frostholm, C.Y. (2018) Træmuseet. Gyldendal, Copenhagen.

- Gonzales, M.A.V. (2018) Keynote (not published). Politics of Machines Conference, Copenhagen. Paraphrase based on private notes.
- Hansen, M. (2004) The Time of Affect, or Bearing Witness to Life". Critical inquiry, 30 (3), 584–626.
- Hansen, M. B. (2006) Media Theory. Theory, culture & society, 23 (2-3), 297–306.
- Hansen, M. B. N. (2010) New Media. Hansen, M. B. N. and Mitchell, W. J. T. (Eds.) Critical Terms for Media Studies, University of Chicago Press, Chicago.
- Hansen, M. B. N. and Mitchell, W. J. T (2010) Time and Space. Hansen, M. B. N. and Mitchell, W. J. T. (Eds.) Critical Terms for Media Studies, University of Chicago Press, Chicago.
- Hayles, K. (2010) The Way We Think. Digital Media and Contemporary Technogenesis, University of Chicago Press.

### 6. ENDNOTES

<sup>1</sup> I am referring here to museums and cultural archives based partly on my own experience as curator at an art museum 1998-2008, partly on resent discourses of museum professionals i.e. at the National Danish Art Gallery SMK.

<sup>2</sup> A postcolonial perspective: Heroic tales of the colonial era and exotic, primitive depictions of the colonized populations still appear.

<sup>3</sup> The Met Office.

- Heidegger, M. (1977) The Question Concerning Technology, and Other Essays. Harper & Row, New York.
- Højholt, P. (1982) Praksis 4: Lynmuseet og andre blindgyder. Schønberg, Copenhagen.
- Kittler, F. (1999) Gramophone, Film, Typewriter, Stanford University Press, Stanford.
- Lund, J. (2020) Tid. Lund, J. & Schmidt, U. (Eds.) Medieæstetik: En Introduktion. Samfundslitteratur, Copenhagen.
- Paul, C. (2014). Genealogies of the Digital: A Post-Critique. Ertan, Ekmel (Ed.) Histories of the Post Digital. Akbank Sanat, Istanbul.
- Paul, C. (2015). From Immateriality to Neomateriality: Art and the Conditions of Digital Materiality. In Proceedings of the 21. International Symposium on Electronic Art, Vancouver, 14 – 19 August 2015 552-555. New Forms Art Press, Vancouver.
- Putnam, J. (2001) Art and Artifact: The Museum as Medium. Thames and Hudson, London.
- Serres, M. (1986) Statues. Les Le second livre des fondations. Gallimard, Paris.
- Serres, M. (2007) Les nouvelles technologies: révolution culturelle et cognitive, Institut national de recherche en informatique et en automatique. https://iatranshumanisme.com/wpcontent/uploads/2015/05/pdf\_texte\_de\_la\_confer ence.pdf (6 September 2021)
- Sternfeld, N. (2016) Deprovincialising the Museum. Body Luggage. Archive Books, Berlin.
- Stiegler, B. (1998) Technics and time. Stanford University Press, Stanford.
- Whitehead, C. (2012) Interpreting art in museums and galleries. Routledge, London.
- Wilke, T. (2010) Tacti(ca)lity Reclaimed: Benjamin's Medium, the Avant-Garde, and the Politics of the Senses. Grey room, 39, 39–56.

https://www.metoffice.gov.uk/weather/learnabout/weather/types-of-weather/clouds/otherclouds/asperitas (6 September 2021)

<sup>4</sup> Asperitas (formerly known as Undulatus asperatus) is a cloud formation first popularized and proposed as a type of cloud in 2009 by Gavin Pretor-Pinney of the Cloud Appreciation Society. Added to the International Cloud Atlas as a supplementary feature in March 2017, it is the first cloud formation added since cirrus intortus in 1951. Source: Wikipedia. Accessed 6 September 2021.

<sup>5</sup> Like post-colonial objects, Anthropocene 'memories', geopolitical crisis etc.