

Slow Violence, Bergsonian Time and Climate Change

Contemporary Photographs of the Rhône Glacier

Article DOI: <https://doi.org/10.70733/jsklue735342>

Ruby Gilding

Abstract

Climate change is facing a crisis of representation. Visual culture has a temporal bias towards spectacular violence, instantaneous and explosive, leaving no means with which to document slow-moving disasters in the image-driven world. With its focus directed at disasters of epic proportions, climate change photography would seem to offer compelling imagery that delivers on the conventions that the media require. However, the story of climate change is one of “slow violence”, which is neither spectacular nor immediate but incremental and attritional. The repercussions of climate change’s violence are relatively invisible; postponed for decades they are thought to lie beyond our contemporary life spans and cannot be captured by the camera’s lens.

To redress conventional representations of climate change, photography needs to gain an understanding of temporality that can represent the “slow”, not just the “spectacular”. This essay turns to Bergsonian time to read photographs that picture climate change. Henri Bergson’s distinction between two modes of time—mathematical time and pure time—is used to analyse contemporary photographs of the Rhône Glacier in Switzerland. The essay takes the trope of the melting glacier in climate change photography as its visual cue, and moves through three different photographic projects: Corinne Vionnet’s *Souvenir d’un glacier* (2015–19), Simon Norfolk’s *Shroud* (2018) and Noémie Goudal’s *Cyclope, Glacier du Rhône* (2016). In doing so it addresses the issue of temporality, or rather temporalities, through which both photography and climate change can be better understood.

How, in an age when the news media venerates the spectacular [...] can

we convert into image and narrative those disasters that are slow-moving

and long in the making, anonymous, starring nobody, attritional and of

indifferent interest to our image-driven world?

Rob Nixon^[1]

Climate change is currently facing a crisis of representation. Rob Nixon's question points to a fundamental inadequacy that underlies climate change visuals: that there are no means with which to document slow-moving disasters in our image-driven world.^[2] From his basis in the environmental humanities, Nixon demonstrates that we have a temporal bias towards spectacular violence or, put another way, towards violence that is coded as instantaneous and explosive. With its focus directed at disaster of epic proportions, climate change photography would seem to offer compelling imagery that delivers on the conventions that the media require. The effect of this is that viewers are accustomed to the visibility of violence. Although Nixon's description of disasters as "starring nobody" can be contested when applied to climate change visuals given that their subject, the future of climate breakdown, extends to include us humans his question suggests that they should consider the "slow violence" that climate change brings into effect. The story of "slow violence" is neither spectacular nor immediate, instead it is incremental and attritional. The repercussions of its violence are relatively invisible; postponed for decades they lie beyond our contemporary life spans and cannot be captured by the camera's lens.^[3] In order to appraise conventional representations of climate change, photography needs to gain an understanding of temporality that can represent the "slow", not just the "spectacular". This essay addresses the issue of temporality, or rather temporalities, with which both photography and climate change can be better understood.

In light of Nixon's observation of the temporal bias towards spectacular images and the actual "slow violence" that climate change wreaks, this essay turns to Bergsonian time to read photographs that represent climate change. French Philosopher Henri Bergson (1859 1941) distinguished between two modes of time mathematical time and pure time the latter of which would become known for his widely influential notion of *la durée*. In the late-nineteenth century, mechanistic science dominated and time was perceived as a succession of separate, measurable units. Bergson argued that the mathematical time employed by his contemporaries was a misperception of the lived experience of time. His contribution was to assert that the experience of time has a real duration, *la durée pure*, that was continuous and indivisible.^[4] The conventions of climate change photography have embraced singular images of spectacular violence, but Bergson's theory of *la durée* offers a means with which to analyse contemporary photography that circumvents these conventions and represents the "slow violence" identified by Nixon.

Here I apply Bergsonian time to three photographic projects that document "slow violence" upon glaciers: Corinne Vionnet's *Souvenir d'un glacier* (2015 19), Simon Norfolk's *Shroud* (2018) and Noémie Goudal's *Cyclope, Glacier du Rhône* (2016). I take the trope of the melting glacier in climate change photography as its visual cue and compare the work of these three contemporary artists, who coincidentally all take the Rhône Glacier in Switzerland as their subject.^[5]

The Trope of the Melting Glacier

Given the complex and global nature of the climate crisis, it is "perhaps surprising" that "a rather limited set of images" have come to represent the issue.^[6] The photographs of globes, politicians, burning forests and melting ice that accompany climate change discourse make use of accepted visual tropes. These images are limited both in subject and effect, or, as Naomi Klein asks, "what is it about those melting glaciers and desperate polar bears that make[s] us want to look away?"^[7] Klein almost articulates my

concern with visualising slow time in her suggestion that failed images of “melting glaciers” are seen within a “400 year-old story which tells us that the sickness is us”, ultimately pinning the problem on “us”.^[6] In Klein’s view, climate change visuals only invoke guilt over humanity’s past actions and generate fatalistic visions of the future.

The melting glacier is a trope that uses spectacular images to convey climate change to the audience. Glaciers are frequently presented through generic, singular images such as Fig.1; with its lack of human presence and monochromatic palette this unattributed photograph is typical of the images selected to illustrate climate change articles. The form of the glacier is abstracted, its surface extending beyond the camera’s frame, which has been closely cropped to amplify the dynamism of the falling tower of ice in the foreground. Spectacular violence translates well visually, as Nixon explains: “avalanches, tornadoes, volcanoes” prompt images that “have a visceral, eye-catching and page-turning power.”^[9] Given the flattening of the glacier’s mass to a background of homogeneous white, the image relies on the spectacular event of the ice’s disintegration to create a sense of urgency in the image that is appropriate to the message it illustrates. This urgency could also be a self-conscious effort to counter the genericness of the visual trope.



Figure 1. Anonymous, One Of The Biggest Tsunamis Ever Recorded Was Caused Three Years Ago By A Melting Glacier, 2018, Photograph, Anonymous, (Photo: EDM Digest).

If Fig. 1 is taken as a “spectacle”, this implies something that is visually striking, and also an event that has been produced on a large scale. The former sense is what established the glacier’s place as a motif in nineteenth-century visual culture, before it became a trope for climate change.^[10] For over two centuries, glaciers were associated with “unassailable majesty” in works by artists including Caspar Wolf (1735 1783), Caspar David Friedrich (1774 1840), Alexandre Calame (1810 1864) and John Singer Sargent (1856 1925). This history is implicit in the illustration of spectacular violence today.^[11] As Fig. 1 demonstrates, the

spectacular in glacier photography usually takes the form of singular images snapshots that extract one moment of violence from a long trajectory. They reproduce a trope that trades on instantaneousness because the actual slow violence of climate change is inconceivable.

Representing climate change is a challenge because, as T.J. Demos notes, “the expanded spatial and temporal scales of geology exceed human comprehension” and are difficult to communicate as a result.^[12] Climate change extends these scales even further as it involves “profoundly different temporalities than the human scale ones we are used to.”^[13] The spectacular images of melting glaciers have become prevalent because they capture one moment, a single event that fits within the human timescale. However, this reliance on depicting immediate violence has failed to account for the fact that the effects of climate change are in fact invisible.^[14] Its violence is slow, operating on a different scale to human lived experience, and therefore out of sight.

A single image, snapshot, or trope cannot operate on the time scale of slow violence. Therefore, Vionnet and Norfolk use multiple photographs of the Rhône Glacier, and Goudal is the only artist who manages to reconcile the singular image with slow violence, as I shall examine later. This is consistent with documentation of glaciers for scientific purposes, which began in the late nineteenth century. Early photographs of glaciers were dated and used to measure changes in glacial mass, employing a method developed by glaciologist Sebastian Finsterwalder that is still in use today. These repeat photographs aimed to quantify “slow violence” in their subjects, recognising that unlike fires or floods, glaciers lie outside the weather system and so are key indicators of global warming.^[15] Photographs of glaciers inscribe this slow violence within them; the works of Vionnet, Norfolk and Goudal directly counter the tradition of spectacular, singular images that includes Fig. 1 by adjusting their temporal registers. The artists’ sensitivity to temporality brings the Rhône Glacier’s breakdown into view, albeit using different formal approaches that betray their own temporal modes. I argue that the different time present in the artworks can be read via Bergson’s theories.

Bergson Reviews Time

Bergson’s philosophical project was a response to the positivism that dominated continental philosophy, because of which certain knowledge was understood as that which could be scientifically verified.^[16] Although Bergson supported empirical science, he was concerned that its appreciation of experience was limited by a misperception of what constituted pure time.^[17] At the turn of the nineteenth to the twentieth century, popular society was forced to consider time as a linear, regular force. This understanding had been established via scientific methods and was reinforced in the public sphere by the invention of timelines in 1765, the introduction of unified railway time in the 1840s and World Time Zones by 1900.^[18] Bergson made his mark as the most celebrated philosopher of the early twentieth century by identifying a difference between technology’s clock time and humans’ psychological experience of time.

Setting up his distinction between mathematical time and “pure” time, Bergson revealed the former as time that our intellect has divided into a succession of units or intervals.^[19] In *Time and Free Will*, he argues that clock-time requires these quantitative units of artificially spatialised time, and that their ability to be measured forms the basis of science’s chosen methods of observation. In contrast, Bergson argues that pure time is experienced as an uninterrupted, indivisible flow by our intuition.^[20] This is the core of his argument; Bergsonian time suggests that real time is characterised by duration, not by

specific, defined moments. In this duration, *la durée*, “several conscious states are organized into a whole” and permeate each other to “gain a richer content.”^[21] Rather than time act as a series of separate moments, the past thickens the present through memory and stretches out in a continuous duration.

“Every duration is thick” he wrote, “real time has no instants.”^[22] Any activity that measures time generates a break, and on these grounds Bergson rejected the instantaneous “snapshots” of photography as they ruptured *la durée*. The standard definition of the photograph as a slice of time and space indicates that photography by default isolates its subject by imposing a spatiotemporal framing.^[23] The Bergsonian view of time is predominantly applied to film theory as film is understood to give rigid shape to time and set temporality to form. However, my aim here is to show that Bergson’s theory is also relevant to the still image. As Amelia Groom points out, Bergson argues in *Creative Evolutions* (1907) that since photographs “cut into continuity by isolating specific moments from the perpetual flow of time, they were incapable of capturing the true nature of reality.”^[24] There are parallels with the climate change visuals criticised by Nixon, in which singular images of violence saturate the visual field and fail to capture the slow violence of reality.

I argue that environmental movement’s approach to time could benefit from Bergson’s ideas of duration, a theory that corresponds with Nixon’s admonishment more than a century later that images need to emphasise “the temporal dispersion of slow violence.”^[25] Instead, predictions and points of no return “recast climate change as abrupt, nonlinear” and within the constraints of mathematical time.^[26] When we start to picture climate change, the conventions of landscape photography and “even those of photography at large suddenly become far from adequate.”^[27] In what follows I will demonstrate how Vionnet, Norfolk and Goudal develop individual photographic practices that reach beyond intellectual time to the durational, and in the process create images that do not make us want to look away.

Three Case Studies





[Figures 2, 3 and 4. Corinne Vionnet, *Souvenirs d'un Glacier*, excerpts, 2019, Rose Editions]^[28]

Corinne Vionnet's (b.1969) *Souvenirs d'un glacier* is a photobook that comprises twelve photographs from the artist's collection of Rhône Glacier postcards. It is striking that although Vionnet's archive spans over a century and includes work by multiple photographers, its common subject has been repeatedly shot in exactly the same way: from a high angle facing the glacier's plateau from the side (see Figs. 2, 3, and 4). The images do not present the wide-angle shots common to landscape photography; there is neither a backdrop to reveal the mountains' expanse, nor is there a foreground to situate the camera's perspective further down the valley. Vionnet cropped and enlarged the photographs, formatting them so that the subject always appears in the centre of the frame, in the process losing the context of the setting. If the photographs were viewed individually, it would not have been necessary to impose a homogeneous format, but as the work aims to render slow violence visible, the near identical composition of the twelve photographs accentuates the change in their subject. *Souvenirs* proves Susan Sontag's statement that "one photograph, unlike one painting, implies that there will be more," because as each photograph confirms that the Rhône Glacier exists "one can never have too many."^[29] Confirming the subject's existence is even more pressing when the photographs reveal its gradual disappearance.

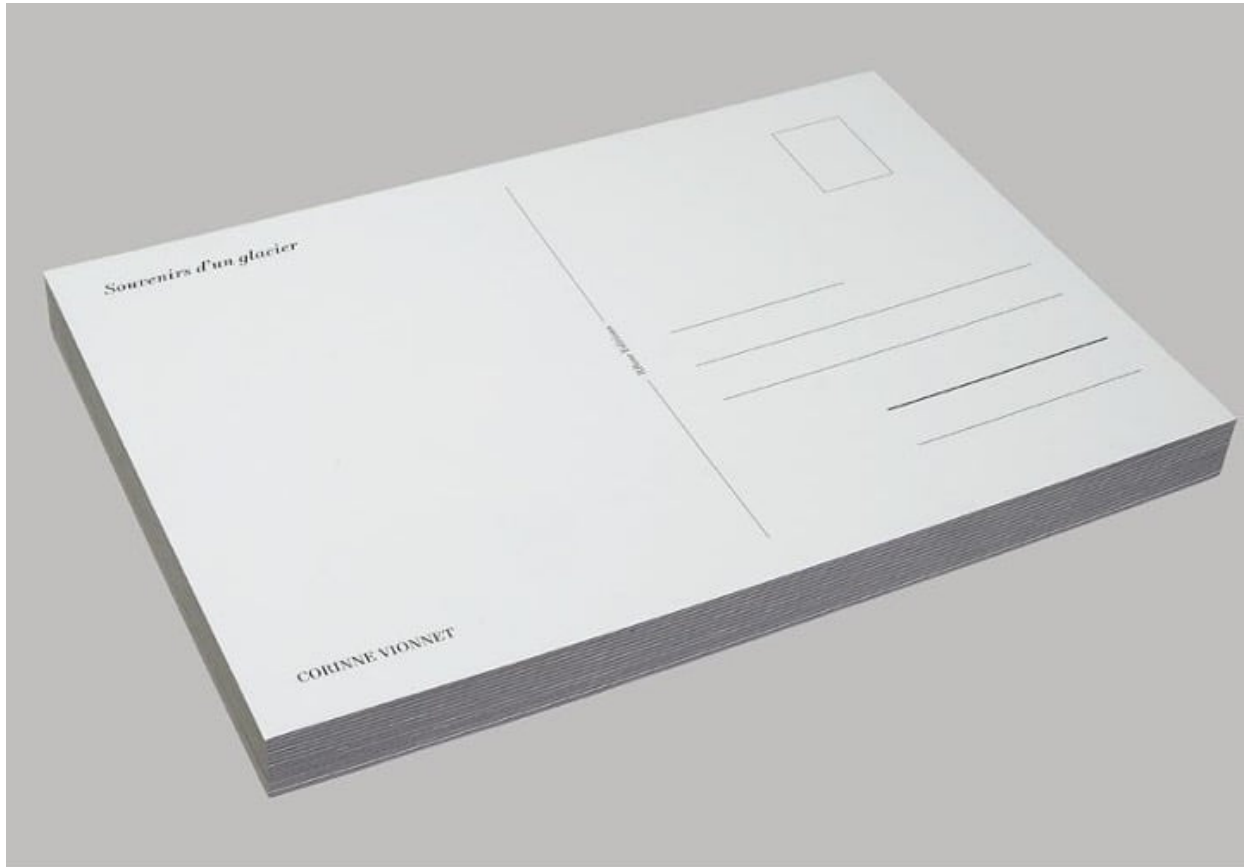


Figure 5. Corinne Vionnet, *Souvenirs d'un Glacier*, excerpt, 2019, Rose Editions

Sontag's comment contributes to a discussion of portrait photography, a tradition which *Souvenirs* draws on as the glacier is captured from a three-quarter angle associated with the genre. These photographs are evidence in an "ongoing biography" of the Rhône Glacier, to apply another phrase from Sontag.^[30] There is a subtle tension here, as Vionnet's archive is made up of postcards a medium that is intended to present a singular, definitive image of a place.^[31] *Souvenirs* highlights the material culture of its found photographs as the book's cover is a blank postcard back (Fig. 5). This references the distinction between the front's picture and back's text that was introduced after the postcard's invention in 1869, allowing the picture to become a communicative medium in itself and making the postcard geographically distinct.^[32] There is even a precedent for *Souvenirs*' images of violent change as until the 1930s postcards frequently shared news of natural catastrophes.^[33] As visual mementos, postcards were singular images distributed spatiotemporally, but Vionnet mimics the nineteenth-century collectors who compiled images into scrapbooks by creating a biographical photo album for the Rhône Glacier.^[34]



Figure 5. Corinne Vionnet, *Souvenirs d'un Glacier*, excerpt, 2019, Rose Editions

Vionnet's chronological arrangement appears to impose Bergson's definition of "intellectual time."^[35] Each photograph becomes a Bergsonian "unit" as the codex turns them into divided moments (Fig. 6). Vionnet is not the first to situate these images in "intellectual time."^[36] Pictures that were originally tourists' visual evidence of having seen the Rhône Glacier are now observational devices for climate change evidence see entries for the Rhône Glacier in the Snow and Ice Data Center's Glacier Photograph Collection.^[37] A comparison between Fig. 2 and Fig. 4 draws similar conclusions as the wealth of empty space in the latter photograph emphasises that the subject has halved in size. These two images state that they are "no longer in one another" but perceived simultaneously, as Bergson would describe it, alongside one another.^[38] This implies the viewer's perception "of a before and after" which fails to accommodate the "long dyings" described by Nixon as "incremental" and "exponential".^[39]

However, the album form situates the two images within a succession of twelve photographs that penetrate one another and allow the viewer to see the slow violence enacted on the Rhône Glacier. As we see in Fig. 6, turning the book's pages blurs the photographs together, experiencing the work is like Bergson's metaphor for the duration, "notes of a tune, melting, so to speak, into one another" to form an indivisible melody.^[40] "The image converges gradually" across the work, deconstructing the archive and codex's innate divisions of time to reinstate a continuous flow just like the steadily melting ice.^[41] The increasing graininess of the images, from the definition of Fig. 2 to the shallow depth of field of Fig. 4, suggests the superimposition of the photographs. A comparison with another work in Vionnet's oeuvre, *Total Flag* (2016), indicates how *Souvenirs* is antithetical to Bergson's "intellectual time".^[42] Vionnet erases the emblem of the American flag through repetition: she photographs the image of the flag on a screen, uploads that image only to photograph it again, and reuploads until the flag is abstracted to the point of

disappearance (Fig. 7). The postcards' repeated composition of the glacier, another historic emblem, echoes the reproduced flag, but the difference is that the Rhône Glacier is being erased over time. The convergence of images in *Souvenirs* breaks from the frame of intellectual time the postcards had been read within and reaches towards Bergson's *la durée*.

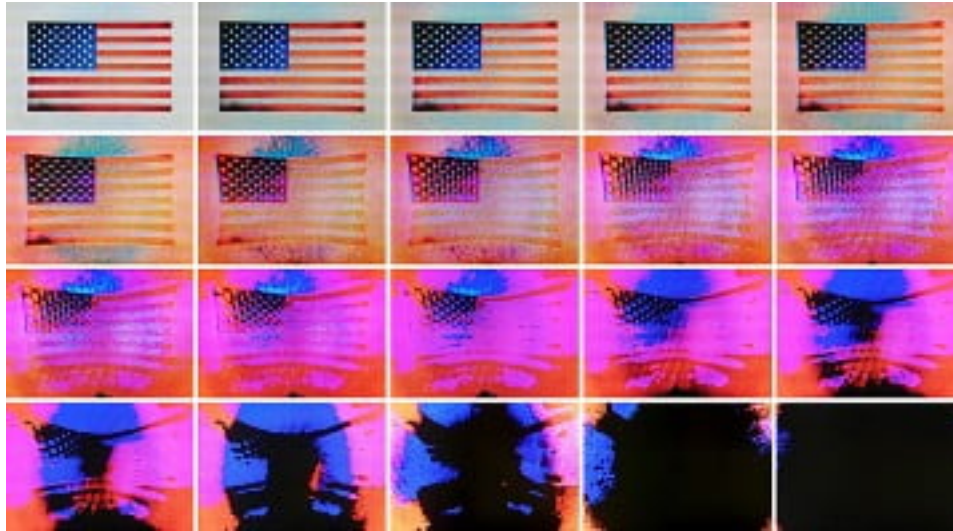


Figure 7. Corinne Vionnet, Total Flag, installation view, 2016

Simon Norfolk's (b.1963) photo essay *Shroud* appears to fit within Bergson's intellectual time, like the initial experience of Vionnet's photobook, as it consists of nine discrete photographs of the Rhône Glacier. The essay takes a specific section of the Rhône Glacier as its subject: a 100m² area that has been covered with thermal blankets in an attempt to slow the permafrost's thawing. It is an example of "the absurdity of attempts at localised conservation in the face of global effects", which was undertaken to protect an ice grotto that has been recut into the glacier every year since 1870 as a tourist attraction.^[43] *Shroud* was produced in collaboration with Klaus Thymann, the founder of Project Pressure, a charity that seeks to visualise the climate crisis. Having worked as a creative consultant on a host of conservation campaigns, his collaboration with Norfolk brings an awareness of traditional climate change visuals, which are influenced by Thymann's experience in high fashion and commercial campaigns. The creators of the Rhône ice grotto reshaped the glacier's natural beauty to create an even more visually compelling experience for its visitors. In a similar fashion, Thymann commissions world-leading artists like Norfolk to reframe environmental photography in a way that will incite the public to look afresh at environmental issues. The result is a highly aestheticised representation of the glacier which belies the direct focus and scientific rigour with which Project Pressure commissions work.^[44]



Figure 8. Simon Norfolk, *Shroud 2*, 2018, Photo: Project Pressure

The aestheticisation of the Rhône Glacier distances the viewer from the subject, just as climate change photography invokes catharsis in the viewer rather than leading them to action when “disintegrating ice becomes as beautiful as suffering in Renaissance paintings of martyrdom.”^[45] Described as “provocative” and “proof that startles”, *Shroud* portrays a glacial landscape in which the ice is almost invisible under dramatically lit folds of canvas (Fig. 8).^[46] With the glacier out of sight, Norfolk’s work plays with this distance to create beautifully composed photographs that are effective. Norfolk avoids the visual trope of the melting glacier entirely, despite it being his subject, and his images inspire pathos rather than apathy in the viewer. The photographs are individual units that cumulatively offer a dramatic lamentation for the Rhône Glacier’s passing.



Figure 9. Simon Norfolk, *Shroud 8*, 2018, Photo: Project Pressure

In the second photograph of the series (Fig. 8) the draped fabric is a shroud that manifests the glacier's death. Suggesting the shape of corpses, the mounds in the foreground reinforce this reading and extend the mass loss of the current Sixth Extinction of the Anthropocene to include humans.^[47] Various blue tones heighten this atmosphere of lament, which is especially prevalent in *Shroud 8* (Fig. 9) where the composition is reminiscent of a *pietà*. In *pietàs* the main components of the image are often arranged as a pyramid, as Mary cradles her dead son the outline of a vertical shape presides over a sloping one. Norfolk's blue and white palette mimics the Marian blue and corpse white of Christian *pietàs*. The allusion is fitting as the crucifixion scene provides an archetype of slow violence within art history. Edward Morris and Susannah Saylor argue that climate change *cannot* be seen to be believed, because you cannot photograph something that is an "abstract, statistically created, long-term research object."^[48] The quasi-religious iconography of *Shroud 8* suggests that the image can facilitate reflection on climate change and, like the Virgin Mary, be a locus for our suffering and our belief.

As a photo essay, the meaning in *Shroud* is derived from the relations between each picture, as much as the individual landscapes themselves. The essay developed out of an attempt to visualise movement, the chronophotography led by Eadweard Muybridge and Étienne-Jules Marey in the 1870s artificially spatialised duration by breaking time into consecutive frames that revealed what was invisible to the eye so that it could be believed. As we move between the images, the narrative sequence of Norfolk's photography "develop[s] a synthetic experience of continuous time" because the effect is cumulative.^[49]

The essay adds up to more than *Shroud's* individual photographs and so rejects the analytical segments of clock time. However, the work is not quite the visual counterpart to *la durée* as Bergson articulates it, because the aim of the photographic essay is not to unfold in real time, but to see what can only be seen when time is stopped. As such, Norfolk opens up what Stimson describes as “the analytical, atemporal space” that comes with the abstraction of serial photography.^[50] *Shroud* creates such an atemporal space and causes a rupture in time just as intellectual time does.

In their depictions of the Rhône Glacier, Vionnet and Norfolk both draw attention to the duration of real time, but are ultimately constrained by the spatial divisions of the codex in Vionnet's photobook and by the seriality of the photo essay in Norfolk's. Noémie Goudal (b. 1984) is the only one of the three artists to represent slow violence through *la durée*. *Cyclope, Glacier du Rhône* is a site-specific work in which Goudal's photograph of the Rhône Glacier was printed on water-soluble paper before being hung in the same location that it portrays in the landscape (Fig. 10).^[51] The ensuing work is this installation's slow disintegration. By situating the glacier photograph within its original surroundings, *Cyclope* reinstates the uninterrupted flow of time through the dissolving image. The installation passes from one state to another, from the complete photograph to its pieces, in a continuous transition. As Bergson reiterates in *Creative Evolution*, there is no essential difference in moving between states as “the state itself is nothing but change” and we change without ceasing.^[52] Therefore, Goudal's time-based installation embodies the concrete duration.



Figure 10. Noémie Goudal, *Cyclope, Glacier du Rhône*, 2016, installation view. Photo: Noémie Goudal

The textural surface of *Cyclope* mirrors the glacier because the paper layers symbolise the icy strata,

and as the paper peels away it transfers focus to the glacier behind implying it is also disappearing from view. With its harsh whiteness and frontal framing, the photograph offers an impression of the glacier as a monumental form, but the fragility of the paper it is printed on works to expose the glacier's vulnerability. The photograph is subject to the same environmental conditions that cause the glacier to melt, but as a more ephemeral material it responds at a rate fast enough to be visualised. The paper screen responds to the Rhône's own imperceptible, yet constant shifting as Goudal explicitly sought "to use a material that was moving in time."^[53] The work takes the initial, discrete "snapshot" and transforms it into an image of slow-moving disaster through the experience of real time in the installation.



Figure 11. Noémie Goudal, *Cyclope, Glacier du Rhône*, 2016, installation view, Horniman Museum and Gardens. Photo: the author

Bergson's duration is also evident in *Cyclope* as Goudal inserts the image of the backdrop into a present moment that is then thickened by the memory of the initial site visit to photograph the Rhône. Goudal notes that her large-scale constructions "exist before the photograph does"; the viewer sees the edges of the paper and knows that the scene is a construct, "but he still gets into it. It's telling a narrative."^[54] Despite seeing the paper, the viewer can "get into it" because these fragments are consistent with the narrative of *Cyclope*: that the glacier continues to melt. The effect is recreated in an exhibition setting by showing multiples of the installation's documentation with the paper surface in progressive stages of breakdown (Fig. 11). Contrary to Vionnet's and Norfolk's works in which the image of the glacier is spatially contained, Goudal addresses global warming's distribution across space as well as time because the biodegradable screen has a *trompe l'oeil* effect. The extension of the picture plane allows the photograph to be spatially unbounded, just like the time-based form means that the installation is not

temporally bounded. Goudal's work has been compared to stage scenery, which is fitting as theatre is another form where time and space are manipulated, and the "receding lines of perspectival space" in *Cyclope* similarly draws the viewer into the photographic illusion.^[56] Goudal has struck upon a method of making violence visible that circumvents Nixon's argument that such images are "focused around an event, bounded by time, and aimed at a specific body or bodies."^[56] The event in question is the gradual disappearance of the photograph, a corollary of the glacier's own retreat, but as the duration of its passing was not bounded by time *Cyclope* visualises the continuous duration.

Bergson's critique of linear, intellectual time is played out in the contemporary artistic photographs of climate change by Vionnet, Norfolk and Goudal. The time of the clock began to dominate in the same period as glaciers were first becoming the subject of artistic representations, and its influence has continued into contemporary documentations of glaciers for scientific observation and as climate change visuals. This essay argues that this tradition has been upended by Nixon's revelation that climate change manifests itself as slow violence, meaning that its effects are beyond human spatiotemporal scales. Given the dominant intellectual representation of time that underlines Nixon's argument, how can contemporary photography capture those "disasters that are slow-moving and long in the making"?^[57] The three case studies discussed in this essay provide answers to Nixon's question, with different methods for producing artworks that can visualise slow violence that all pivot around the specific example of the Rhône Glacier.

Each work demonstrates Bergson's thesis in *Time and Free Will* that real time is experienced as a continuous duration, and counters the artificial divisions of intellectual time that had informed previous climate change visuals. Vionnet's *Souvenirs* achieves this by superimposing archival postcards in the form of a photobook, Norfolk's *Shroud* by producing a cumulative effect in the transitions between the photo essay's images, and, most effectively of all, Goudal by creating a time-based installation with a continuous duration in *Cyclope*. These works redefine photographs of slow violence according to real time, and discard the reductive, visual trope of the melting glacier in the process.

Footnotes

1. Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press. 2011. p. 3.
2. *Ibid.*
3. It is important to note that many would argue that we are already living with the repercussions of climate change. T.J. Demos describes the Anthropocene and climate change having begun with the arrival of Europeans in the New World. Demos, T.J. *Against the Anthropocene: Visual Culture and the Environment Today*. Berlin: Sternberg Press. 2017. p. 8.
4. Bergson, Henri. *Time and Free Will: An Essay on the Immediate Data of Consciousness*. New York, NY: Henry Holt & Co. 1913. pp. 78–79.
5. The subject choice of the Rhône Glacier in Switzerland is not a complete coincidence; it is one of the

- most accessible glaciers given its proximity to the Furka Pass and the tourist routes established in the nineteenth century. It is also one of the most dramatically changed glaciers which lends it added gravitas as a visual subject. See “V. Swiss Mountain Passes, Railroads, and Tunnels”. *The Chautauquan; A Weekly Newsmagazine*. Vol. 51. No. 3. 1908. p. 386; Schwartz, Daniel. *While the Fires Burn: A Glacier Odyssey*. London: Thames & Hudson. 2017.
6. Wang, Susie, Adam Corner, Daniel Chapman and Ezra Markowitz. “Public engagement with climate imagery in a changing digital landscape”. *Wiley Interdisciplinary Reviews: Climate Change*. Vol. 9. No. 2. 2018.
 7. Nigel Smith, ‘Naomi Klein: ‘Why do we look away from the horror of climate change?’, *The Guardian*, 2 October 2015. Available at <https://www.theguardian.com/film/2015/oct/02/naomi-klein-why-do-we-look-away-from-the-horror-of-climate-change> (accessed 2022-01-17).
 8. *Ibid.*
 9. Nixon, *Slow Violence*, p. 3.
 10. In the nineteenth century, journeys across the Swiss Alps inspired the notion of the sublime as glaciers became a byword for “mystery” and “uncommonness”. See Addison, Joseph. *Remarks on Several Parts of Italy etc. in the years 1701, 1702, 1703*. (1773 edition), printed for T. Walker. Chapter on “Geneva and the Lake”, p. 261; Burke, Edmund. *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (1756); Immanuel Kant, *Critique of Judgement* (1790).
 11. Knight, Peter. “Glaciers: art and history, science and uncertainty”. *Interdisciplinary Science Reviews*. Vol. 29. No. 4. 2004.
 12. Demos, *Against the Anthropocene*, pp. 12–13.
 13. Morton, Timothy. *Hyperobjects: Philosophy and Ecology after the End of the World*. Minneapolis, MN: University of Minnesota Press. 2013. p. 1.
 14. Nixon, *Slow Violence*, p. 2.
 15. Bronnimann, S. “Picturing climate change”. *Climate Research*. Vol. 22. No. 1. 2002. p. 91; Webb, Robert, Diane Boyer and Rymond Turner. *Repeat Photography: Methods and Applications in the Natural Sciences*. Washington DC: Island Press. 2010.
 16. Abrutyn, Seth. “Positivism”. In *Oxford Bibliographies*. 2018. Available at <https://www.oxfordbibliographies.com/view/document/obo-9780199756384/obo-9780199756384-0142.xml> (accessed 2022-01-17).
 17. Bergson, *Time and Free Will*, p. 115.
 18. Ross, Christine. *The Past is the Present: It's Future too: The Temporal Turn in Contemporary Art*. New York, NY: Bloomsbury. 2012.
 19. Bergson, *Time and Free Will*, pp. 80–86.
 20. *Ibid.*, p. 75.
 21. Bergson, *Time and Free Will*, p. 122.
 22. Bergson, Henri. *Duration and Simultaneity: With Reference to Einstein's Theory*. New York, NY: Bobbs-Merrill Co. 1965. p. 52.
 23. Baetens, Jan, Alexander Streitberger and Hilde Van Gelder, *Time and Photography*. Leuven: Leuven University Press. 2010.
 24. Groom, Amelia. “Introduction: We’re five hundred years before the man we just robbed was born”. In *Time*. London/Cambridge, MA: Whitechapel Gallery/The MIT Press. 2013., p. 22.
 25. Nixon, *Slow Violence*, p. 3.
 26. Russill, Chris. “Climate change tipping points: Origins, precursors, and debates”. *Wiley Interdisciplinary Reviews: Climate Change*. Vol. 6. No. 4. 2015. p. 429.

27. Demos, *Against the Anthropocene*, p. 13.
28. *Souvenirs d'un Glacier* is an unfoliated book, therefore all pages are listed as unpaginated excerpts from the volume.
29. Sontag, Susan. *On Photography*. London: Penguin. 1979. p. 166 and p. 165.
30. *Ibid.*
31. Like the spectacular images of glaciers used to illustrate climate change, postcards' attempts to produce a singular image often ironically collapse into visual tropes.
32. Ylanne, Virpir. "Transient Identities, New Mobilities: Holiday Postcards". In *Tourism Discourse: Language and Global Mobility*. Edited by Crispin Thurlow and Adam Jaworski. London: Palgrave MacMillan. 2012. p. 198. For a study of Swiss nationalism, the "nationalisation of nature" and tourist images in the nineteenth century see Zimmer, Oliver. "In Search of Natural Identity: Alpine Landscape and the Reconstruction of the Swiss Nation". *Comparative Studies in Society and History*. Vol. 40. No. 4. 1998.
33. Ylanne, "Transient Identities", p. 199.
34. Stewart, Susan. *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection*. Durham, NC: Duke University Press. 1993. p. 139.
35. Bergson, *Time and Free Will*, p. 76.
36. *Ibid.*
37. National Snow & Ice Data Center, Glacier Photo Collection database. Available at https://nsidc.org/data/glacier_photo/search/ (accessed 2022-01-24); Orlove, Ben, Ellen Wiegandt, and Brian Luckman. *Darkening Peaks: Glacier Retreat, Science, and Society*. Berkeley, CA: University of California Press. 2008.
38. Bergson, *Time and Free Will*, p. 101.
39. *Ibid.*; Nixon, *Slow Violence*, p. 3.
40. Bergson, *Time and Free Will*, p. 101.
41. Vionnet, Corinne. "Souvenirs d'un glacier". "Works". Corinne Vionnet, 2019. Available at <http://www.corinnevionnet.com/souvenirsglacier.html> (accessed 2022-01-10).
42. Bergson, *Time and Free Will*, p. 76.
43. Fowkes, Maja and Reuben. "Facing the Unprotectable: Emergency Democracy for Post-Glacial Landscapes". In *Along Ecological Lines: Contemporary Art and Climate Crisis*. Edited by Barnaby Drabble, (London, 2019); "V. Swiss Mountain Passes", p. 386.
44. Project Pressure has artists develop work alongside scientists "to ensure accuracy" and has partnered with NASA and the World Glacier Monitoring Service. See Project Pressure, <https://www.project-pressure.org/about/> (accessed 2022-01-17).
45. Miles, Malcolm. "Representing nature: Art and climate change. Cultural Geographies". *Cultural Geographies*. Vol. 17. No. 1. 2010. p. 32.
46. Ollman, Leah. "Review: Simon Norfolk's traumatic photos capture a Swiss glacier on life support". *Los Angeles Times*. 29 April 2019. Available at <https://www.latimes.com/entertainment/arts/la-et-cm-simon-norfolk-review-20190429-story.html> (accessed 2022-01-17).
47. Davies, Jeremy. *The Birth of the Anthropocene*. Oakland, CA: University of California Press. 2016.
48. Morris, Edward and Susannah Saylor. "The Pensive Photograph as Agent: What Can Non-Illustrative Images Do to Galvanise Public Support for Climate Change Action?". In *Image Politics of Climate Change: Visualisations, Imaginations Documentations*. Edited by Birgit Schneider and Thomas Nockep. Berlin: Transcript Verlag. 2014. p. 303.
49. Stimson, Blake. *The Pivot of the World: Photography and its Nation*. Cambridge, MA: The MIT Press. 2006. p. 36.
50. *Ibid*

, p. 37.

51. "Artist Overview". *Project Pressure*. 2019. Available at <https://www.project-pressure.org/artists/> (accessed 2022-01-24).
52. Bergson, *Creative Evolution*, p. 2.
53. Unseen Amsterdam. "Interview with Noémie Goudal". *Project Pressure*. 6 September 2016. Available at <https://www.project-pressure.org/interview-with-noemi-goudal/> (accessed 2022-01-24).
54. Jaeger, Anne Cecile. "Haven Her Body Was". *FOAM Magazine*. Autumn 2012. Available at <http://noemiegoudal.com/foam-magazine/> (accessed 2022-01-24).
55. Lauson, Cliff. "The View from Here". In *Observatoires*. Paris: RVB Books. 2016. Available at <http://noemiegoudal.com/infos/the-view-from-here> (accessed 2022-26-08).
56. Nixon, *Slow Violence*, p. 3.
57. Nixon, *Slow Violence*, p. 2.