

*Weather as cinema:*

*Exploring fungal and weatherly creativity in film*

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**Abstract:** This article analyzes weather as enabler of, and able to make, cinematic art. I begin by exploring philosophies of weather and air, and then look at early films where meteorological phenomena receive acute attention alongside related media analyses. Afterwards I analyze two artworks, by Madge Evers and Anna Scime. Each was made by mushrooms sporifying on receptive media, respectively paper and analog film. This article includes original interviews with both artists.

I identify fresh ways of understanding cinema but also weatherly and fungal creativity. Analyzing such artworks, I also think about how artists can develop art practices able to galvanize instead of eviscerate futurity. Consequently, I not only investigate more-than-human creativity, but explore how cinema can facilitate instead of block ecological healing.

**Keywords:** cinematic weather; experimental cinema; early cinema; meteorology; mycology.

Weather is an unhinged force comprising cinematic affinities. What do I mean by weather? I mean the condition of the atmosphere at any moment, including, for example, the power and direction of air currents, the temperature and ferocity of the sun's luminescent heat, and the presence, absence, and intensity of rain. We verify weather's agency via its ability to make physical things move, like fog or leaves. Its elementary particles generally only

become appreciable when, gathered en masse, they precipitate the mobility of a tangible object. When we see things moving through, and in the wind, like mushrooms' spores, we might investigate atmospheres as media of dispersal and exhibition, operating in manners comparable to analog film. We can stretch this observation further by investigating films whose processes of production and methods of projection rely on, even render perceptible, weather's status as creator of art and screen of exhibition. And conversely, unlike its digital counterpart, analog film is uniquely receptive to meteorological energy, analogous, in some way, to a leaf. Indeed, cinema photosynthesizes: ingesting light to excrete imagery as a surplus. Physical stock also recalls the cyclical procedures of vegetal regeneration. Frame after frame, each inscribed with minor morphological differences derived from local atmospheric disturbance, eventually building whole artworks. Like plants, analog film offers a surface against which weather can apply materials and convey a writerly ability by signifying in a register legible to human animals. The identities of weather and cinema further align, both defined by mobility rendered in time. Analog film is especially suited to meteorological expression; or: weather's ability to make cinematic art.

As Anat Pick and I proposed in 'Permacinema', every living being and force "enjoys a cinematic power, that is, signifying whilst moving in time" (2022: 14). In an interview, filmmaker Karel Doing explained how

Motion is not only written on a filmstrip but also a snake slithering through sand is doing something very similar. As such cinema is only one of many possibilities. Investigating the multiple ways in which movement can be inscribed is to my mind a valuable exercise. (Dymond, 2022a)

Cinema has only two constituent ingredients, time and movement. Light is unnecessary, its inclusion optional, depending on the materials used to produce imagery and the effects filmmakers hope to achieve. Neither are cameras automatically requisite. Equipment and techniques construed as essential are extraneous. I propose that cinematic events are simply ones where things transition from stasis to momentum and mobility becomes appreciable in development across time. This means that we can "enjoy the *cinematic* without the *cinema*" (Dymond and Pick, 14; emphasis original). The notion that more-than-human mobility only becomes cinematic after being modulated by the apparatus is attributable to the acculturated parochialism of human animals' perspective. Living beings' significant mobility precedes cameras' appearance, which, saying nothing of digitally rendered media, may only ingest events already underway.

Cinematic paraphernalia do not produce moving images *ex nihilo*. They ingest and represent beings' ability to communicate meaning through motion. To better comprehend this contention, we can express a distinction between *cinema* (as an industry) and the *cinematic* (a power endemic to life, expressed whenever beings make meaning whilst moving in time), as introduced by Pick and I (Ibid.). Our observation relies on a biosemiotic framework, specifically Jakob von Uexküll's (1864-1944) Umwelt theory, and early French filmmaker and critic Jean Epstein's concept of 'photogénie', explored in depth below. Biosemiotics investigates how living beings, from amoeba to human animals, make meaningful signs and interpret significant cues through biological and pre-linguistic registers. Conversely, Epstein was fascinated by cinematic specificity, which he found in cinema's unique relationship to movement and time. Between these two frameworks, we

can propose a view of life as inherently cinematic. That is, expressed by making meaning in movement and time.

Weather is decisively cinematic. Weather throws spatially disparate things into accelerated and concerted motion, producing cinematic events. By events I mean art made with physical elements in environments without cameras' aid or other technological modulations, which is not to say that space or time are uniformly experienced. "Cinema is an industrial technology *and* an energy" owned by all life that may be seized, co-opted, and redirected, or acknowledged, respected, and partnered with (ibid.; emphasis in original).

I am talking about the expressive power of all more-than-human life that is exercised regardless of our presence and demonstrated exquisitely by weather. Faced with the possibility of *cinematic* enjoyments in *cinema's* absence, we must interrogate cinema's value. If we already exist with beings in the cinematic realm, why make cinema? Cinema helps us acknowledge, celebrate, and collaborate with semiotic others. It is a cipher by which other languages can be translated and somewhat understood and a vector wherein we can co-produce art with others and emphatically comprehend their equitable, but distinct, subjectivities. Cinema is especially helpful because our perspectival faculties are so limited, meaning that more-than-human expressivity regularly operates beyond our purview. In such cases, communication needs intervening media amenable to each party's style of address and parameters of perception.

For instance, plants, though also signifying via gesture, primarily communicate by exchanging and interpreting chemicals that are, to us, largely imperceptible. Analog film is reactive to phytochemistry and, when animated during projection, can accurately convey vegetal gesticulation. Following these observations, Doing has pioneered the practice of 'phytography'. As I explained in 'New Growth' (2021),

In phytography, phytochemistry and the plant body coalesce to produce imagery. Many plants contain polyphenols, molecular packets aligned with those within popular photographic developing agents. When soaked to encourage the release of their chemicals and placed against a photographic surface, plants can develop photographic imagery. Subsequently, if a plant's body be placed against a photographic surface after being handled appropriate, an image of a plant's body besides its phytochemical reactivity can form. (35)

Phytograms (phytography's media products) can help us perceive important and hidden aspects of plants' subjectivity in artworks made by plants (see Figure 1). Phytograms are art objects where we co-exist alongside plants without asymmetrically co-opting their creativity and sovereignty. Rather anthropic artists twist their process to cultivate plants' ability to self-represent, enacting, as Pick said of veganism, "an approach which is also a kind of retreat" (2018: 128). But phytography also comprises extractivist dimensions. Phytograms, although requiring plants' extraction, are not inherently destructive. A key difference separating plants and mammals is plants' regenerative excellency. By carefully harvesting plants, their flourishing might be charged, not diminished. If a plant's leaf has withered beyond cure, removing that leaf can help the plant redistribute energy more efficiently. Likewise, many mushrooms are designed by fungi to whet mammalian appetites, requesting intervention. Doing harvests conscientiously, following Indigenous protocols proposed by Anishinabek scholar Robin Wall Kimmerer (Kimmerer, 2013; Dymond 2022a), yet phytograms require analog film's gelatin-based emulsion, itself produced as

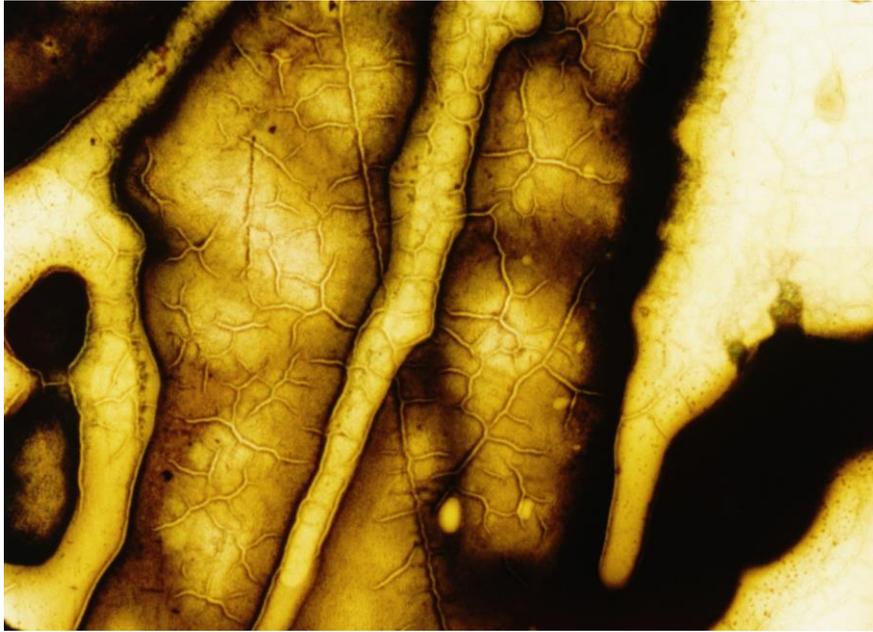


Figure 1 - Phytogram

a byproduct of routinized slaughter in other industries. The question of cinema's justifiability is conceptually convoluted, aligned with cinema's material entanglement with industries of corporeal and geological extraction. Nevertheless, phytograms, rooted in restraint, gesture towards more ethically and environmentally sustainable forms of film practice.

If weather enjoys the ability to make cinematic art with plants by encouraging them, for example, to move in the wind, and if we might make moving images *with*—not *of*—plants through phytography, I wonder: how might filmmakers make art *with* weather? Tackling this question, I look to artists who subordinate their methods to mushrooms' and weather's styles of address and modes of expression. I explore weather's skill to not only impact filmmaking processes or extant media but produce cinematic art before cameras' arrival. To do so I analyze two artifacts made by mushrooms sporifying on paper and photochemical film.

To reproduce, many mushrooms sporify, showering spores outwards from caps, which get to where they need to be by floating on streams of wind. Spores' journeys from mushrooms' cap to earthly ground only occurs if air assents to mushrooms' use of its nebulous body as an intervening medium. Many mushrooms, like many plants, solicit air to achieve reproduction, interpreting, and even stimulating, atmospheric variables before sporifying. Fungal life shares profound connections with weather, manifest in mushrooms' reliance on atmospheric energies as media of dispersal, and fungi's ability to actively modify weatherly patterns. Emilie Dressaire et al. (2016) revealed how many mushrooms' bodies and growing locations, and the mechanisms of spores' ejection, are tailored to solicit or precipitate air's mobility. For example, by increasing evaporation rates, mushrooms can cool surrounding atmospheres. This produces pockets of denser air around mushrooms, generating air currents propelling spores beyond the forest floor, into stronger air flows. Alternatively, consider the bird's nest mushroom, recalling a nest-like cup holding white mushrooms resembling eggs. This mushroom's morphology and growing locations maximize possibilities that raindrops will strike the cup, launching eggs and spores outwards.

Anthropic artists can make moving images with fungi by inviting mushrooms to make spore prints on receptive media. Spore prints are inverted images of mushrooms' undersides made over time, coalescing when anthropic, fungal, and weatherly agencies productively intersect, embodying the fecundity of shared existence. Realizing mushrooms' capacity to manipulate climactic rhythms by modifying or harnessing weatherly power helps us acknowledge spore prints made on analog film, paper, or the earth as co-productions where human animals, weather, and fungi play non-exceptional but equitably crucial parts. Furthermore, spore prints operate across various environments and media, inviting a fluid form of gazing flowing between cinema screen and cinematic life without discretion. They are a category of technological artifact called by Oron Catts, Chris Salter, and Ionat Zurr "semi-living": fugitive media prone to spontaneity and change (2022: 115). In this regard, they echo 'biofilms', cinematic media made when bacteria eat films' gelatin-based emulsion (Dymond, 2022b). The media I explore include mushrooms sporifying on synthetic scaffolds (film or paper) by allying with an intervening medium (air) that is itself a creative agent, the scenario requiring maintenance by human animals who assume the humble role of caretaker or steward.

Semi-living media are ethical conundrums. Not only representing living beings or materials, they actually house them. This is especially true of spore prints, since mushrooms' spores are both living matter and conditions of further life. The artists I analyze exude sensitivity to such questions. Wielding paper and film as media of fungal dispersal, they make fruiting bodies of a different type. These artifacts thereby signpost artists' ability to adapt practice and galvanize instead of eviscerate futurity. How can you 'eviscerate' futurity, or conversely galvanise it? Quite simply, by reducing or increasing the possibility of a livable future on earth. We might galvanise futurity by partnering with other beings to produce landscapes of biological abundancy, amenable to sustaining various lifeways. Alternatively, we might eviscerate futurity by destroying landscapes through largescale mining projects or pumping trash into landfills. By teaching us how to galvanise futurity, these artefacts let me analyze not only fungal and weatherly creativity, but less violent ways of making art with other beings on a damaged earth.

## **Breach**

China Miéville's novel *The City and the City* (2009) follows a murder investigation between Beszel and Ul Qoma, two cities sharing one geographical space. Inhabitants of either state must artfully unsee each other under threat of extreme punishment, monitored by the punitive force: Breach. What permeates the ministerial borders are weather, more-than-human animals, and refuse, whose ownership is equally hazy.

The scents of Beszel and Ul Qomatown are a confusion. The instinct is to unsmell them, to think of them as drift across the boundaries, as disrespectful as rain ('Rain and woodsmoke live in both cities', the proverb has it. In Ul Qoma they have the same saw, but one of the subjects is 'fog'. You may occasionally also hear it of other weather conditions, or even rubbish, sewage, and, spoken by the daring, pigeons and wolves). (66)

Miéville captures weather's irreverent proclivity to blur edges and signify in excess of our control. Yet, kin to gravity, weather also horizontalizes, a vector by which one may think beyond not only the arbitrary geopolitical cartography of space, but the division of species.

Air is predominantly visualized as a bag of inert chemicals. Yet as Luce Irigaray, in *The Forgetting of Air in Martin Heidegger* (1999), asked:

Is not air the whole of our habitation as mortals? Is there a dwelling more vast, more spacious, or even more generally peaceful than that of air? Can man live elsewhere than in air? Neither in earth, nor in fire, nor in water is any habitation possible for him. [...] No other element is as light, as free, and as much in the fundamental mode of a permanent, available, there is. (8)

“Our being”, said Eva Horn in ‘Air as Medium’ (2018), is always “being in the air” (23), the “condition of possibility” (12) of biological and social life: “The air enables movement and perception (hearing, sight, and smell), as well as communication, travel, situatedness, and dislocation, inasmuch as it joins the members of societies and cultures in a common climate.” (9) Not merely an inert container, air is the active and generous enabler of all action. It is our medium.

To address air as human animals' medium is to automatically address air as cinema's medium, too. “The old idea that media are environments can be flipped”, wrote John Durham Peters in *The Marvelous Clouds* (2015): “environments are also media.” (3)

Media [...] are containers of possibility that anchor our existence and make what we are doing possible. [...] “Media,” understood as the means by which meaning is communicated, sit atop layers of even more fundamental media that have meaning but do not speak. [...] Media are ensembles of natural element and human craft. (2-3)

As mentioned in the previous section, the cinema industry entirely relies on others to provide the thematic and material conditions by which it may operate. Analog film requires, for example, the extraction of gelatin from creaturely bodies and rare minerals from the earth. Beings and ecologies are then drawn on to produce thematic cues, facilitating stories' progression. However, filmmakers generally produce artifacts in which more-than-human forces and beings are relegated to the background of human animals' supposedly more significant lives. Additionally, as Dai Vaughan explained (1999: 5), the ostensibly infinite replicability of digital technology allows the negation of meteorological intrusions. Scenes may be filmed and re-filmed until weather is assimilated into narrative or erased. In cinema, not only creaturely but weatherly agency is regularly overlooked, co-opted, or removed completely. We might consequently approach cinema as an industrial and ideological enterprise through which the world is materially and thematically captured, ingested, and regurgitated as art objects: remade, as it were, in our image(s). Conversely, could artists instead wield cinema as a vehicle by which meteorological artistry might be addressed as active in cinema, but also beyond it?

## Photogénie

Early films and film theories offer interesting case studies for approaching weather in film. Many early artists and critics, concerned with cinema's uniqueness, were pre-occupied with cinema's relationship to movement and time. Cameras and thoughts consistently coincided with scenes in which weatherly action, highly photogenic given its intensities of motion, was on display. We might even approach this period as a time in which weather's cinematic significance had not yet been properly co-opted or defined. Early practice and theory provide springboards for analysing how weather operates in, and exceeds, cinema. Additionally, my proposals concerning *cinema* and the *cinematic* have precedents in early French critics' and filmmakers' Germaine Dulac and Jean Epstein's joint approaches to cinema.

Dulac and Epstein became active in the 1910s, when cinema was still widely conceived, as Dudley Andrew wrote, as a "vine around the great trunks of serious and popular culture." (1976: 11) Both sought to establish cinema as an art, beyond a fairground attraction or type of 'filmed theatre'. They explored cinematic specificity through cinema's startling, non-anthropocentric power. This was grounded in photo- and cinematographic cameras' mechanical constitution and cinema's special relationship to movement and time. Dulac, writing in 1932, argued for a "pure cinema" based on "purely visual elements" whose subject matter existed in

certain scientific writings, those which discuss, for example, the formation of crystals, the trajectory of a bullet, the bursting of a bubble (a pure rhythm, and what a moving one! Wonderful syntheses), the evolution of microbes, the expressiveness and lives of insects. (qtd. in Sitney, 1987: 47)

The 'pure cinema' debate, operating alongside terms like 'avant-garde' in a constellation of concepts concerning non-narrative cinema, had become, Richard Abel contended, *the* key discussion, at least in 1920s and '30s France. "So pervasive was the question that nearly every writer was forced to declare a position on it." (1988: 329) Pure cinema communicated meaning through form, not traditional dramaturgy. Its subject matter, as Tami Williams wrote, was "movement and rhythm", "*La Matière-vie elle-meme*" (the material of life itself)." (2014, 153; emphasis in original) Pure cinema exists "beyond the limits of the human, to everything that exists in nature, to the invisible, the imponderable, to abstract movement." (Dulac qtd. in Sitney 47)

"Th[e] school of the ungraspable turned its attention to other dramas than those played by actors." (Ibid.) Epstein also pursued this trajectory.

If we wish to understand how an animal, a plant, or a stone can inspire respect, fear, and horror, those three most sacred sentiments, I think we must watch them on the screen, living their mysterious, silent lives, alien to human sensibility. The cinema thus grants to the most frozen appearances of things and beings the greatest gift in the face of death: life. And it confers this life in its highest guise: personality. (2012/1926a: 295)

Epstein was particularly moved by cinema's ability to, as Pick said in 'Vegan Cinema' (2018), "enhance objects' impenetrability, rendering them solid, autonomous, more pronounced." (126)

Through the cinema a revolver in a drawer, a broken bottle on the ground, an eye isolated by an iris are elevated to the status of characters in the

drama. Being dramatic, they seem alive, as though involved in the evolution of an emotion. (Epstein, 2012/1926a: 295)

However, more-than-human beings do not lack impenetrability, magically conjured up *ex nihilo*. “Every aspect of the world upon which the cinema confers life is elevated only if it possesses a personality of its own.” (296)

By ‘personality’, I think, Epstein meant ‘subjectivity’. We apply these words, roughly synonyms, to the diaphanous sparks setting beings apart, manifest in idiosyncratic movements, gestures, and behaviours. These semiotic locutions indicate internal worlds, alongside unique systems of thinking. Epstein himself synthesized subjectivity and personality.

[I]n the cinematographic apparatus [...] images are taken from the *perpetually moving spectacle of the world*—a spectacle that is fragmented and quickly cut into slices by the shutter that unmask the lens, at each rotation, for only a third or a quarter of the time that rotation takes. [...] [C]inematographic frames, considered in themselves, are thus a creation of the camera apparatus, a very inexact interpretation of the continuous and mobile aspect of nature [...]. In such an instance, a mechanism proves to be endowed with its own *subjectivity*, since it does represent things the way they are perceived by the human gaze, but only by the way it sees them, with its particular structure, which then constitutes a *personality*. (2014/1946, 13-14; emphasis added)

For Epstein, prior to the spectacle of cinema resides a more fundamental spectacle, coinciding with the rhythms of the earth. This we co-opt to produce cinema, appropriating an extant, pre-representational power. Furthermore, living beings enjoy subjectivity. Cinema does, too. Joint ownership is verified when cinema contributes its own perspective, thickening living beings’ recalcitrance. Epstein called this capacity ‘photogénie’.

It was only via photogénie that cinema could distinguish itself from the other arts. Writing in 1926, Epstein said: “The cinema must seek to become, gradually and in the end uniquely, cinematic; to employ, in other words, only photogenic elements. Photogénie is the purest expression of cinema.” (2012/1926a: 293) Only certain aspects of others’ characters lent themselves to such analysis, others’ ‘photogenic’ aspects. During filming, these were not only revealed, but elevated, their “moral value increased by filmic reproduction.” (294). “I now specify”, Epstein continued: “only mobile aspects of the world, of things and souls,” invite photogenic analyses (ibid.) “We can therefore say that the photogenic aspect of an object is a consequence of its variations in space-time.” (Ibid.) No other art could relay beings’ photogenic aspects because no other art operated in their dimensions. Beings’ photogenic aspects are meaningful signs, messages revealed through dynamic movements conveyed in time. “All life is covered and ordained with signs”, said Epstein. “In order to grow and unite, rocks make beautifully steady gestures as if they were meeting beloved memories.” (2012/1926b: 289) Weather, exemplary in its inability to ever stop moving in time, may be addressed as the origin and final target of cinematic attention, particularly susceptible to photogenic analyses. Weather emerges as a cinematic force, sharing, with cinema, interrelated modes of expression, and dimensions of operation.

In ‘Cinema, meteorology and the erotics of weather’ (2018), Emil Leth Meilvang moved towards similar conclusions yet in the other direction, blending weather and cinema via

the expression “cinema as weather, [...] the radical end point” for any discussion of weather in cinema (emphasis original; 80). Meilvang explained:

Seeing cinema itself as something resembling a weatherly phenomenon, somehow sharing the same motional substance and begging for a mutual kind of reception is [...] a merging of filmic ontology and a thinking informed by the topos of the earth sciences. [This is] an ontology of film that is not made up of narrative or interpretive cues, but entirely of sensation, immersion, and movement. [...] It is not only a way of broaching weather on film [...], it is also a strong, ontological claim on cinema itself. [...] It is also [...] a move which turns the artwork into something prior to and different from the idea of art itself. (81)

Meilvang explored another facet of “cine-meteorology” (77), namely weather’s unhinged vitality, by analyzing Louis Lumière’s *Baby’s Dinner* (1895). In this single shot and static film, Marguerite and Auguste (respectively, Louis’s sister-in-law and brother) eat with Andrée, their child. The audience, bewitched by the trees moving behind Marguerite and the quivering plant behind Auguste, ignored the family’s gastronomic adventure, captivated instead by the uncanny agility of vegetal bodies stirred by the wind.

The weatherly phenomena that merely seem to facilitate the blank, realist space in which the plot is inscribed with its characters, lines, and cues holds a sprawling vitality, a non-narrative abundance saturated with their own inverted form of significance [...], signif[ying] but not in any allegorical, directly interpretive sense. Rather, the weatherly cine-phenomenon is an end unto itself [...]. Cinematic weather can never be fully instrumentalised in narrative. (67-68)

Vaughan looked to another Lumière film, *Boat Leaving the Port* (1895). The film comprises one shot in which a boat carrying three men ventures from a harbor, past a jetty on which some women and children stand, and out to sea. The waves fall into half-dark as they move towards the frame’s bottom left, echoing a curtain disturbed by the wind. The onlookers’ clothes billow voluptuously, directionally and temporally aligned with the choppy waves. After cresting the jetty, the vessel escapes the boaters’ control, spinning in place. Then the film ends, awkwardly *in media res*, bound by the young technology’s durational shortcomings.

Vaughan was struck by the sight of human animals at the mercy of weatherly rhythms.

Such an invasion of the spontaneous into the human arts, being unprecedented, must have assumed the character of a threat not only to the “performers” but to the whole idea of controlled, willed, obedient communication. And conversely, since the ideas of communication had in the past been inseparable from the assumption of willed control, this invasion must have seemed a veritable doubling-back of the world into its own imagery, a denial of the order of a coded system: an escape of the represented from the representational act. (6)

Weather is a real and conceptual “threat”. The specter of anthropic mortality dogs the film, active in the boaters’ struggles which, vitally, are never diegetically resolved.

Early viewers were enamored by such phenomena, too.

What most impressed the early audiences were what would now be considered the incidentals of scenes: smoke from a forge, steam from a locomotive, brick dust from a demolished wall. George Méliès, a guest at the [Lumière's] first Paris performance [in 1895], made particular mention of the rustling of leaves in the background of *Le Déjeuner de bébé* [*Baby's Dinner*]—a detail which [...] would scarcely be remarked upon today. (4-5)

For Méliès, as Vaughan wrote, the trees 'rustled'. This suggests that they produced a sound. However, these films were silent. It was vegetal movement that startled, not vegetal noise, as Siegfried Kracauer pointed out, in *Theory of Film* (1960), whilst also quoting Méliès in his statement concerning that to which cinema is uniquely equipped to render. "The cinema is conceivably animated by a desire to picture transient material life," Kracauer said:

life at its most ephemeral. Street crowds, involuntary gestures, and other fleeting impressions are its very meat. Significantly, the contemporaries of [Auguste and Louis] Lumière praised [their] films—the first ever to be made—for showing 'the *ripple* of the leaves stirred by the wind'. (ix; emphasis added)

Furthermore, the technological mobility of otherwise supposedly inert things gripped viewers' attention, not motion in general.

People were startled not so much by the phenomenon of the moving photograph [...] as by the ability of this to portray spontaneities of which the theatre was not capable. The movements of photographed people were accepted without demur because they were perceived as performance, as simply a new mode of self-projection, but that the inanimate should participate in self-projection was astonishing. (Vaughan 5)

Human animals' performances were pedestrian, lacking weather's charisma. This state, however, is provisional. Vaughan said:

When the boat is threatened by the waves, the men must apply their efforts to controlling it; and, by responding to the challenge of the spontaneous moment, they become integrated into its spontaneity. The unpredictable has not only emerged from the background to occupy the greater portion of the frame; it has also taken over the protagonists. Man, no longer the mountebank self-presenter, has become equal with the leaves and the brick dust—and as miraculous. (Ibid.)

Or, as Pick, in "Nothing now but kestrel" (2017), analyzing *Baby's Dinner* and *Boat Leaving the Port* side-by-side, wrote:

The operation of natural law on waves, leaves, and people alike reveals the mechanisms of the world as radically egalitarian. The woman who looks on intriguingly, perhaps anxiously, may or may not have discerned this earthly truth. For us, she, too, is incorporated into the natural scheme that the film shows. Cinema [...] makes this reality clear. (49)

Weather's touch authorizes and makes explicit earthly things' unity, their kinship partially determined by mutual exposure to atmospheric force. Designed to render the mobility of spatially contiguous beings operative in time, cinema, ontologically kin to weather, is technologically keyed to relay this meteorological law. Yet if meteorological

phenomena signify beyond cinema's capacities to fully instrumentalize or contain weatherly semiosis, we must explore weather's sovereign skill to operate cinematically in the absence of anthropogenic paraphernalia. Neither weather *in* cinema nor cinema *as* weather, then, but, to fully invert Meilvang whilst leveraging his coincidence with Epstein: *weather as cinema*, a codification of not only weather's ontological affinities with cinema, but weather's creative ability to produce the conditions that cinema is uniquely equipped to capture, and without which it would fail to operate.

Understanding of this cine-meteorological zone may be garnered via cinematic artifacts made with mushrooms' spores. These media lend themselves to such analyses because they are contact prints and because mushrooms share special relationships with weather via their reliance on atmospheric energies as media of dispersal. Additionally, contact prints are art objects produced without cameras by placing materials on suitable surfaces and, in these instances, leaving them alone for some time. They inhabit a slippery territory wherein weather exists contiguously with cinema without being asymmetrically assimilated, facilitated by cameras' absence.

## The Mushrooms at the End of Cinema

I have drawn this subtitle and much of my inspiration from Anna Lowenhaupt Tsing's exquisite *The Mushroom at the End of the World* (2015). Tsing looks to *Tricholoma matsutake*, a gourmet mushroom long treasured in Japan. Matsutake thrive in messy ecologies co-built by human and more-than-human forces. Amidst accelerating climate catastrophe, matsutake provide lived examples of how we might change our behavior to help secure planetary futurity.

Like us, cinema will be rendered untenable by resource scarcity and environmental collapse. As Pick writes in her talk 'Permacinema' (2021), "Not merely ocular, or even haptic, the cinema is peculiarly gastronomic, a medium that feeds on the world and thus finds itself implicated in the dynamics of extraction, consumption, and waste." However, Evers's and Scime's artworks methodologically respect and thematically celebrate others' sovereignty, showing us how cinema may yet continue. Additionally, they provide limit cases of what cinema is, bringing us to the end of thinking cinematically. By the end of cinema I mean the real end of cinema as an industry. I also mean the end of cinema as we know it, precipitated by awareness of the idea that all life enjoys the power to make cinematic art, perhaps especially weather. These artifacts exhibit escape routes beyond cinema's literal end, whilst—or, rather, by calling us to consider others' cinematic power. What kind of imagery, then, do the mushrooms at the end of cinema co-build?

Madge Evers makes spore prints on paper. Evers generally produces one original, and some copies. These are ontologically unique. "The original is fragile, experimental, and possibly fugitive; I don't know what it will be in ten years", Evers says. "Originals are almost sculptural and more special than reproductions, although reproductions are lovely, too." (Personal interview, 2021) Now, I address originals. Neither technically painting, nor photo- nor cinematography, Evers's prints elude categorization and require an expanded concept of art. Present vocabularies are lacking when deciphering Evers's prints, mainly because of how Evers injects motion into singular, and thus purportedly static, images. Playing with spores in time, Evers makes images of motion that barely move, breaching boundaries with mushrooms.

Evers's works are presupposed by humble reticence before weather and fungi.

The processes of spore printing cannot be rushed, so there is a letting go that happens when my materials are assembled and the mushrooms are releasing their spores. I wait for 8, 12, or more hours. It is always exciting to lift the cap and see what happened while I was away. And humbling when nothing does. (Evers)

Evers makes room for others by creatively withdrawing. Evers's spore prints appear when human animals retreat, but never to the point of absence. Mycologists use spore prints to identify mushrooms. Spores' size, shape, dispersal, and color reveal mushrooms' characteristics. Generally, when mycologists make spore prints, mushrooms are covered by containers. Chances that spores will fall exclusively downwards are multiplied, resulting in images that purportedly mirror their fungal referent. Yet alienated from their milieu, atmospheric forces are held at bay. Spore prints reliant on containment deny weatherly artistry and convey an ideal fungality.

Evers leaves fungi exposed, welcoming meteorological creativity. Evers's *Luminous Herbarium* (2019), pictured in Figure 2, includes plants, specifically chervil, echinacea, and yarrow, besides bioluminescent jack o'lantern mushrooms. As air coiled around sporifying mushrooms, spores blew across the page, leaving halflit trails in their wake. An index



Figure 2 - Luminous Herbarium (2019) by Madge Evers

of weather's agency, spores' mobility scans as hazy clouds flowing across the imagery and amidst inverted mushrooms, like curtains of moonlit rain, or rivers of smoke flowing

through fungal archipelagos. In the work, mobile air links disparate beings, registering as a synthesizing force and conduit of connection. Plants and fungi may only reproduce and establish shared communities via intervening media provided by local atmospheres. Ecologies exist only within atmospheres, elemental media of fungal and vegetal communication, nourishment, and propagation. We, too, are similarly reliant on atmospheric media, the absence of which would spell our immediate asphyxiation. Spore prints are symptomatic of this dependency, as mushrooms' occurrence and spores' journey from gill to earth, paper, or film are facilitated by meteorological phenomena. In the *Luminous Herbarium*, atmospheric energy is depicted as the facilitator of earthly life, and methodologically facilitates the artwork's production.

The *Luminous Herbarium* is compostable. The vulnerability of Evers's spore prints is not a negative condition but an exciting chance of spontaneous genesis. If discarded underground, mushrooms may sprout from its surface. Evers's paper is a representational medium and medium of fungal growth. Vitally, spores are not blocked the ability to decouple from the page. Evers's spore prints are inherently unstable. Like actual spore prints, Evers's artworks are processual phenomena absented definitive terminus.

Originals are inherently cinematic, beholden to spontaneity and transiency. Endlessly radiating spores, the *Luminous Herbarium* is interminably mobile. This motion, whether exercised or latent, transforms static images into moving ones. This is cinema slowed down and dilated to an almost unbearable maximum, where movement transpires over years, not seconds. A limit case of cinema, the *Luminous Herbarium* inhabits the confluence of mycological, cinematic, meteorological, and vegetal time. Mushrooms' spores, riding windblown air, sweep across paper, amassing depth against an ostensibly two-dimensional surface. Working on paper and taking spores as its medium, weather makes cinematic art. Producing a contact print on paper, it also makes a cinematic event coalescing before the arrival of camera or other cinematic paraphernalia. The *Luminous Herbarium* speaks to weather as artistic medium and medium of art, a springboard for thinking weather as cinema. How else might this be thought?

Anna Scime makes spore prints on analog film. Scime's *Spore Print Film Series* (2010—) is twelve years old and still mushrooming. Iterations gradually coagulate, a few a year. Films include local mushrooms and appear alongside mushrooms' seasons. Like #16 (2016), it is made by Scime and: bellas; chanterelles; shaggy manes; lions manes; and oysters. #16, seen in Figure 3, is 3 minutes long and includes roughly 4000 frames. Mushrooms were laid on rolls of film placed on tables, each a few feet long. At 40 frames per foot, this process required continual repetition. Iterations achieved completion at different speeds, since neither mushroom species nor individual mushrooms uniformly sporify. Scime's method is painstakingly slow, subordinated to fungal rhythms. Scime, like Evers, withdraws, adapting practice to help fungi and weather display their creativity. [Fig. 4] These methodological decisions produce abstract works, where frames' sequential movement is not deceptively fluid but jarring. Jittery imagery renders mushrooms visible but never fully amenable to analysis. Made without a camera, viewpoints are fixed, hovering just above the strip. Viewers' proximity to mushrooms is close but never bridged. Fungi are simultaneously present and recalcitrant, inhabiting distinct lifeworlds that overlap with ours but never entirely align.

Scime employs weather as a medium exceeding cinema. During projection, the film is looped "until it has nearly erased itself and only traces of the spore prints remain" (Scime, personal interview, 2021). Spores dislodge during projection, achieving contact with

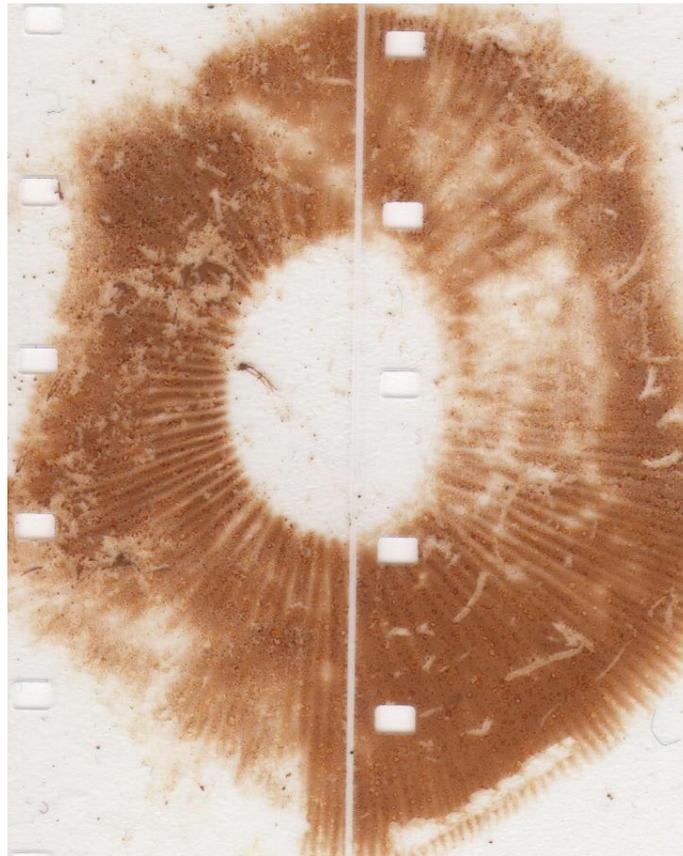


Figure 3 - Anna Scime's Spore Print Film Series (2010-)

viewers' clothes and skin, even permeating exposed orifices. The film is a phenomenological event, something to be inhaled, ingested, and worn, and seen and heard. The projector is an audiovisual but also weather machine, devising its own climate by generating fluctuations of temperature and electricity, and modifying air's local behaviors. Weather is a visible and felt reality despite the auditorium's obligate darkness. Spores billow around the projector and twinkle in rogue rays of light. The film, looped until devoid of spores, gives way to change.

The larger idea or story is revealed and kinetic forces disperse the spores during projection—at once accentuating and de-saturating the films' colors, shapes and sounds. [...] Encountering the films in exhibition adds new layers of interaction and exchange. Anyone present at a screening will get to see the spores coming off of the film as they float by the projector's light beam (and machine's light leaks) and into the air. (Ibid.)

Atmospheric mobility is an itinerant conduit of creativity. Spores do not disappear following severance from the strip. Nor does #16 degrade. It indefinitely grows.

The projector reveals not only a new way of seeing the films, but also creates new films as it slowly releases the spores while they play. So, first I produce one film by placing the mushrooms, then the projector makes another... and there is potential beyond. (Ibid.)

Projection is not an end but a generative element of Scime's methodology.

After release, spores produce novel patterns against architectural surfaces and human animals' bodies. These patterns constitute a gradually expanding spore print, facilitated by atmospheric media. Viewers' epidermis achieve ontological harmony with local masonry, both amenable to weather's caress and spores' habitation. Scime recalls the views of a previous century, producing weatherly art born(e) by air. A multispecies exhibition ecology spontaneously erupts as air wreathes around human animals and spore laden stock without discretion, a newly perceptible vehicle of horizontalizing entanglement.

Scime highlights weatherly creativity besides its ability to breach the arbitrary division of world and screen. Scime, too, makes spore prints without containers. Meteorological phenomena make the film and engineer its later dilation, verifying weather's double power to precede and exceed cinema. Atmospheric media scours the strip only to project its content elsewhere. Intermittently visible in the projector's leaking light and radiant beam, spores appear lively whilst dancing in the wind. The physicality of weather's usually nebulous body is rendered palpable by fungal material swirling within it, simultaneously medium of art and screen of exhibition. The auditorium's local atmosphere becomes analogous to a film strip, as mushrooms' spores are therein spatially re-arranged and made to move in time. Weather exhibits its photo- but also cinematographic identity, writing with spores in mobility, time, and light.

Still, neither work describes serene alternatives to dominant styles of expression. Film used includes gelatin, and mushrooms are harvested to enable production. However, Scime recycles old, gelatin-based stock, redirecting violent flows towards less violent ends. Additionally, picking mushrooms can support fungal schemes. Importantly, neither artist entirely fixes their work nor forces spores to adhere. Thus both artifacts may function as media of fungal dispersal, not least because, in Scime's case, friction generated during projection accelerates spores' removal from the strip.

Real life might proliferate from such media, in conceptual and material ways. Their methods share a key commonality via their subordination to more-than-human others' styles of life. A secondary element is that thematic issues communicated via audiovisual cues are corroborated processually, meaning that the usually disparate dimensions of method and style are rendered indivisible. They show us how to more sustainably work through cinema's voracious appetite for earthly ecologies, and thematically explore others' sovereignty. They teach us how to modify process in order to mitigate cinema's tendency to, as Pick says, feed on the world.

## **Weather as Cinema**

In 1923, Epstein traveled to Sicily to record Mount Etna's eruption, with a film crew and some muleteers. The film was not adequately preserved. Luckily, 'The Cinema Seen From Etna' (1926), first chapter of Epstein's eponymous book, survived the trip. For Epstein, the volcanic event was a film, a cinematic event *par excellence*. Equally impacted by meteorological phenomena, human animals were incorporated into this cinematic scenario, rendered equitable with every atmospheric element. Newly mobile phenomena were rendered startlingly uncanny, illuminated by Etna's intermittently flashing vent. The volcano assumed the form of a huge camera. The materials of production the material of life itself. Purportedly disparate elements were synthesized, achieving provisional equity

via a subsuming scenario. Etna's power not only exudes, but exceeds, cinema's. "Glorious volcano!", Epstein exulted: "I have never seen expressions comparable to yours." (288) It is serendipitous that Epstein's recording perished. It would have described a diminutive version of a cinematic event primarily executed by meteorological and geological power. "What churches," Epstein waxed, "if only we knew how to construct them, could accommodate a spectacle like this, where *life itself* is revealed." (289; emphasis added)

"I don't know if I can make myself understood about this," Epstein said, "but the figure with whom we were all occupied was the cinema." (Ibid.) On Etna's fetid slopes Epstein found that towards which he was groping with words like *photogénie*, a pure cinema made of nothing but "movement and rhythm", comprising only "*La Matière-vie elle-meme*" (the material of life itself)" (Williams, 2014: 153; emphasis in original). Etna's eruption evidenced an elementary artistry active and enjoyable without anthropogenic media, operative with smoke, ash, and fire. Epstein's text typifies a radically non-anthropocentric approach to analyzing audiovisual artifacts, where anthropogenic media are secondary to, and fed by, weather's ability to itself make cinematic art. Epstein did not think weather through cinema but cinema through weather, inverting analytical hierarchies and inviting us to contemplate cinema as an ancillary symptom of weatherly expression. In this regard, the title of Epstein's chapter and book is a giveaway. Evers's and Scime's prints, and Scime's projection scenario, co-exist on a continuum alongside Etna's eruption, made by weather writing with spores (instead of ash) in movement and time.

Imagining weather as an agglomeration of inert chemicals is a distinctly western inadequacy. Alisi Telengut is a Canadian visual artist of Mongolian origin. Telengut's grandparents lived nomadically on Mongolian grasslands. Her artworks are infused with their stories and knowledge. As I analyzed in 'Media of Devotion' (2022c), in *Tengri* (2012), Telengut exhibits a Mongolian wind burial. Here, corpses are transported on carts until spiritual powers make them fall. Bodies are not buried and wherever they land becomes a simple tomb, nutritional gifts to the world. *Tengri* begins with an ultramarine sky. Within it motes of silver and gold pirouette, kaleidoscopes of spirits coalescing as a glittery orb. A human animal's spirit lingers in a landscape below, eventually joining the joyous swirl. Later, we see the spirit's body on earth, then lifted onto a cart and carried away until it flies skyward, like its spirit, with the wind.

According to Indigenous Mongolian knowledge, weather is capricious and recalcitrant. It overlaps with us but lives beyond our ambit, an excessive agency lacking possibility of total restraint. This view of weather is a key element of a cosmology based on learned sensitivity to human animals' messy enmeshment in local ecologies full of sovereign beings enjoying unassimilable lives. Indifferent and largely invisible, weather overflows with beauty. Yet, as we are discovering with increasing awareness, it wields terrifying power. Ecological crises are predominantly products of atmospheric damage. Atmospheric turbulence is a scouring energy signifying planetary futures without us. Yet weather conducts no violence, only dispassionate action some haphazard symptoms of which include human animals' total mortality. Still atmospheric affliction is largely experienced by the least culpable, quickened by western excess yet felt most keenly elsewhere. Ecological crises are racialized and political.

This does not negate the technical truth of meteorological objectivity. Weather executes with the detached artisanship of butchery, at least according to Charles Baudelaire in *The Flowers of Evil* (1982)—a quotation, the existence and significance of which I discovered in Pick's *Creaturely Poetics* (2011):

No rage, no rancor: I shall beat you

as butchers fell an ox. (Baudelaire 79)

Or does it? As Pick showed, the butcher's blow, and the ostensibly humane equipment of industrialized butchery, derive energy from a cultural anxiety over creaturely life, whose endlessly reiterated powerlessness scaffolds anthropic supremacy (2011: 131-150). Weather is the reality of the non-violent ideal behind which the butcher erroneously claims absolution. Weather is not just the "meat" (Kracauer ix) on which cinema feeds and achieves specificity. Conversely, it turns us, too, into meat, writing our inhumanity in atmospheric events of accelerating severity. Weather reduces, a medium of hope.

Alex Pheby's novel *Mordew* (2020) follows Nathan Treeves, a slum-child in the eponymous city. Mordew is led by the Master, who sustains his magic by feeding on the corpse of God. Nathan enjoys a similar power that he barely controls, also acquired from God's cadaver. Nathan embodies our double ability to secure or burn futurity. His exertions turn his body literally translucent, a disappearing glass-boy. His hubris destroys himself and the world. Only windblown water diverts from Nathan's inimical trajectory.

Where he stood, the earth crumbled under his feet and fires were set deep down where the roots of plants and trees had dried into tinder [...]. The sea glistened with his light, and at least that seemed immune to him, rolling into shore below the cliff edge and away again as if he was nothing. (378)

Weather cares nothing of our self-assumed exceptionality. Acknowledging meteorological agency leverages radical recalibrations. Earthly life's equity is verified by meteorological indifference.

Like us, cinema may obliterate or heal local and planetary ecologies. I have analyzed artifacts in which cinema's largely latent, but evidently available, ability to enable life's proliferation is explored. Dependent on, and exemplary of, fungal and atmospheric artistry, they reinvigorate cinema's designation as a medium: a bridge between worlds. Under certain circumstances, cinema can adopt weather's unbiased disposition and, in its analog form, lend itself to weather's style of address. Translatory media of revelatory encounters, these artworks hover between various forms of art and elude classification, enjoying, like weather, an elemental fluidity.

They may be construed as speaking to weather as cinema: made by weather writing with mushrooms' spores in mobility, time, and in #16, light. Weather as cinema is not just a formalization of weather's semio- and cinematic proficiency. Generally, artists capture then overcode weatherly power. Yet prior to cinematography comes weatherly power. By addressing weather as cinema we flip directions of capture, calling cinema an outlet of meteorological creativity and denying our exceptionality for we, like cinema, are equally submissive to atmospheric authority, media for its expression.

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