

## Imag(in)ing Saharan Dust

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### **Abstract**

This contribution investigates how weather stories co-emerge with power relations and geopolitical borders, focusing on the atmospheric transport of Saharan dust out of the Desert and across the Mediterranean towards Western Europe. The introduction outlines how Saharan dust is commonly framed as an ‘intrusion’ and not in a culturally or politically neutral way, given a heightened ‘Mediterranean outlook’ in European meteorological surveillance. I then analyse some empirical techniques and aesthetic media used for representing and measuring Saharan dust in weather reporting and science communication. Specifically, I argue that satellite vision is typically coopted in portraying Saharan dust as an intrusion across geopolitical borders, which is embedded within postcolonial power relations and the territorialization of air. My critique highlights the importance of telling weather stories from underrepresented perspectives, especially given the disproportionate impacts of climate change and air pollution experienced in African cities where Saharan dust is known to mix with anthropogenic emissions. The final paragraphs explore some creative feminist experiments using visual and performance-based methods to deconstruct and reconstruct satellite imagery. While these experiments do not solve problems, they help in a modest way to decentralise hegemonic conceptualisations of weather, air, and atmospheres, by heightening our sensitivity to the materiality of the field environment from a position of ‘middleness’.

**Keywords:** *Sahara, dust, borders, intrusion, colonialism*

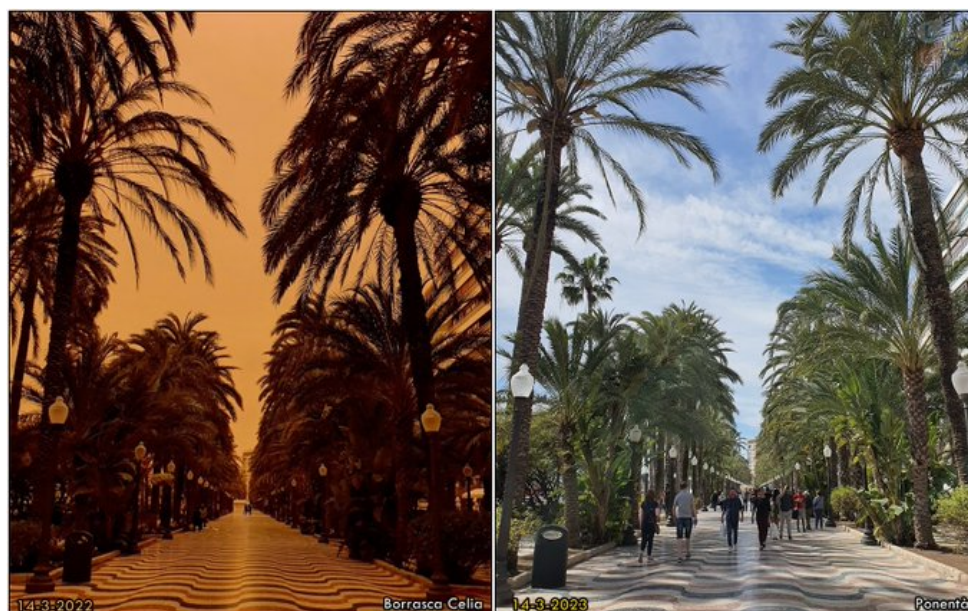
### **Introduction/Intrusion**

Saharan dust affects weather in many regions, especially in Africa. A diatomaceous, mineral dust, it plays a pivotal role in global meteorological and biological cycles of fertilising marine algae and the Amazon Rainforest. The finest particles are whipped up by desert winds into higher air layers where they join long-range trajectories and may even encircle the globe before deposition. When there is a high concentration of Saharan dust in the

atmosphere, visibility gets reduced, and the sky can turn a yellowy, orangey, or greyish tone (Figure 1). Dusty residue shows up on surfaces and is particularly noticeable on vehicles, urban architecture, leaves, even ski slopes. The visual and felt impacts of dust episodes can generate a sense of unfamiliarity in some places as everyday scenes are transformed by the fleeting immersion, which can last a few hours to several days. Suddenly, the medium of air gains a newfound tangibility and attention turns skyward. Journalists and social media users share photographs and satellite images along with concerns about health, air quality, climate, and socioeconomic instability in affected regions.

12 July 2023 was proclaimed the first ever *International Day of Combating Sand and Dust Storms* in recognition of the negative impacts of dust storms at multiple scales and the need for global and regional cooperation (UN, 2023). The Day coincided with “another major intrusion of Saharan dust into the Mediterranean and across the Atlantic to the Caribbean” (WMO, 2023, my italics). In science communication and weather reporting on Saharan dust, the word ‘intrusion’ (*intrusión de polvo* in Spanish) is commonplace, and not necessarily in a politically or culturally neutral way (Neimanis and Hamilton 2017). Intrusion – from the Latin for ‘thrust in’ – seems to imply, of course, a transgression of boundaries. By extension, the notion of a dust intrusion suggests that land-based geopolitical borders and societal ideas of place and belonging are inextricable from the realm of meteorological and atmospheric sciences (see Kim, 2024). In Western Europe, where Saharan dust circulates from South to North, perceptions and measurements of the weather arguably reflect broader sociohistorical imaginaries of the Mediterranean as a dangerous zone of transmission (see İşleyen and El Qadim 2023, p. 3; Sabin and Olcina Cantos, 2023).

**Figure 1.** *Passeig de l'Esplanada d'Espanya, Alicante, during a dust episode in March 2022 (left) and on a clear day (right). Credit: Samuel Biener*



### Weather as Other

Cultural historian Jody Berland traces a “militarization of meteorological language” originating in mid-20<sup>th</sup> Century Europe, with the labelling of air masses as “fronts” and “continents”. Berland continues that “we see a stark instance of science constructing its ‘other’ as hostile, inanimate, vanquishable matter” (1994, p. 102). Indeed, Saharan dust is commonly referred to in general news media and institutional press releases as an *intrusion*, *irruption*, or *invasion* of Saharan dust *heading* for Europe, *hitting*, or *striking* Europe (e.g., WMO, 2021; Copernicus, 2020; Rejón, 2023; Figure 2). In these militarized descriptions, the air itself is territorialized in specific ways (Kim, 2024). Such a framing may be indicative of an increasingly vigilant regard towards the Mediterranean in meteorological practice corresponding to modern “surveillance networks and organisations [that] validate North African atmospheric dynamics as important processes in European meteorology” (Sabin and Olcina Cantos, 2023, pp. 1037-8).

Berland’s historical analysis of European meteorology underscores the co-emergence of not only climate (change) with culture *per se*, but also with postcolonial power relations and eurocentrism (see, also, Berland, 1993; Carey, 2012; Austin, 2014; Hulme, 2015; Mahony, 2021; Randalls, 2017; Mahony and Endfield, 2018; Meché, 2022). Dominant accounts of Saharan dust that frame Europe as the recipient of an intrusion from elsewhere arguably map onto the “fortressing” effect of European immigration policies (Mbembe 2017, 177)<sup>5</sup> alongside dehumanizing descriptions of people migrating into Europe as “floods”, “swarms”, and “waves” (Sharpe, 2016, 15-16). Taking such metaphors to the extreme, one science paper on the “global dispersion of pathogenic microorganisms” (Saharan dust is known to transport bacteria) even bears the title “Legal immigrants: invasion of alien microbial communities during winter occurring desert dust storms” (Weil et al., 2017). In this unfortunate title, ocean crossings are conflated with imaginaries of territorial space, invasion, otherness, and vectors of disease.

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<sup>5</sup> Achille Mbembe (2017) uses the term “Fortress Europe” to criticise European immigration policies. The term originally derives from military propaganda and was used by both sides in World War Two.

**Figure 2.** Screenshot from the Copernicus (EU) website. Accessed: August 15, 2024.



Of course, the militarization of meteorology and othering of weather occurs not just in language. It is also a visual practice, spanning cartography, photography, and other representational modalities. Illustrative media, from engravings of clouds to digital heatmaps, are central to empirical interpretations of weather while also informing and shaping cultural responses and power relations (Thornes, 2008; Zerefos et al., 2007; Daston 2016). In particular, “weather forecasting and a larger, public, imaginary space are technically and semantically dominated by satellite images”, writes Berland (1996, 124). Satellite images are routinely used by meteorologists, climatologists, and air quality analysts, in addition to or in the absence of ground-based sensing technologies. The digital image is encoded in numbers reproduced as visual pixels embedded within a chain of translating light and atmospheric density into numerical data about the volume of the dust and tracking or forecasting its coordinates. While satellite images appear to present an objective view “from nowhere” (Haraway 1988, p. 581), they are in fact formed by and interpreted within specific geopolitical and sociohistorical contexts (Cosgrove, 2001, p. 2; Ingold, 2015, p. 73; McCormack, 2018, p. 40). The satellite image is not simply captured; it is created and can be analysed as such.<sup>6</sup>

During dust episodes, satellite imagery indicates the sources and trajectories of Saharan dust, showing “how the European climate is influenced by the atmospheric dynamics of North Africa” (Sabin and Olcina Cantos, 2023, p. 1043). Typically, we are presented with a sweeping centrifugal movement of desert matter across the Atlantic or Mediterranean, creating a bridge between one territory and another (Figure 3). The satellite image contributes to portrayals of Saharan dust as an intrusion and specifically as a problem of breaching certain b/orders, in juxtaposition with the idealised archetype of our planet as a

<sup>6</sup> This process involves decisions about colouring, composition, cropping, orientation, captioning, contextualisation, interpretation, and analysis, among others.

blue marble, first depicted in colour photography in in *Earthrise* (Anders, 1968). The Mediterranean is transformed into “a ‘border spectacle’ (De Genova, 2002) – a nodal spectacularized meeting point between the North and the South” (İşleyen and El Qadim, 2023, p. 3). The image of a desert appearing to breach its edges has ready associations with desertification and climate change (Meché 2022), racialized otherness (Nieuwenhuis 2018, pp. 21-29; Rawes 2020, p. 123), and the “creeping” threat of “Non-life” (Povinelli, 2016, p. 16).

**Figure 3.** *Projection of NASA satellite image in the Geography Institute, University of Alicante. February 16, 2022.*



In such representations, North Africa is reduced to the origin of a foreign material on its way into another territory (Kim, 2024), reflecting “the longstanding Euro-American tradition of seeing Africa as a “dark continent” (2019) and vector of transmission (Sharpe 2016, 15). Yet, of course, dust episodes are more acute on the continent than further afield. While there is a sparsity of ground-based air quality monitoring networks across North Africa in comparison with Europe (Garland and Platinga 2020; Jerrett et al., 2017), satellite images corroborate local experiences of pollution hotspots with extremely high concentrations of airborne particulate matter. Saharan dust is known to intermingle with and exacerbate the health impacts of exposure to emissions from oil refineries, dirty fuels, biomass burning, and radioactive residue – all of which have connections to ongoing colonial histories (Hecht 2019; ACRO, 2021; Henni, 2022; Jarvis, 2022). Beyond Eurocentric meteorology, then,

there is of course a more expansive tapestry of stakeholders and breathers to consider, all connected by ecological, socioeconomic and material forces across a multi-sited patchwork of field sites.

### Re-imag(in)ing Saharan dust

My attention now turns to other ways of storying weather inspired by speculative worldmaking and intersectional feminisms (Meché, 2022, p. 67). How might we rethink the hegemonic view from nowhere in this context? Researchers working in similar fields have talked about the importance of *thinking with rather than about* matter and milieu, acknowledging how “the very materiality of the field environment [...] constitutes our subjectivity as researchers” (Nassar, 2018, p. 414; see, also, Boscacci 2018). By the same token, rather than telling stories *about* (Saharan) dust, one would tell stories *with and within it* (e.g., Nassar, 2018; Steedman, 2001; Parikka, 2015, p. 87; Frichot, 2019). For example, anthropologist Jerry Zee, who studies dust storms in and around China (2021) calls for a novel conceptualisation of space and politics based on the multidirectional relationality of being downwind or upwind (Zee, 2017). In this sense, Saharan dust would no longer be regarded as “matter out of place” (Marder, 2016; Amato, 2000; Douglas, 2001)<sup>7</sup> but rather a manifestation of “the turbulent dynamics of a planet that continually reconfigures into novel formations” (Zee, 2020).

The feminist artist project *open-weather* explores ways to transform practices for making images of Earth from outer space into experiential, bodily, material, performative, and immersed encounters – such as walking in the rain while simultaneously using a DIY ground station to tune into local weather (Engelmann et al., 2022). Inspired by *open-weather*, I performed my own humble and fleeting experiment, which called into question dominant accounts of Saharan dust as an intrusion by playing with ideas of borders, winds, and spatial politics. During a research visit to the University of Alicante, I produced an assemblage consisting of a satellite image overlaid with scattered sand collected from a local beach, Playa de San Juan (Figure 4). Of course, most of the grains in my sample are too large to be classed as atmospheric dust in geological terms. Yet my intention when scattering the matter across the representational image was to “write experience into remotely sensed imagery” (Engelmann et al., 2022, 242). Blowing over the scattered sand, I played with random patterns and excavations, in a process of embodying flows of matter and the agency of the weather from all directions.

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<sup>7</sup> Not to mention that dust and matter of course precede place anyway in the sense of composing worlds and lands before these places are known as such.

**Figure 4.** *Printed satellite image with scattering of 'local sand'. February 2022.*



**Figure 5.** *Dust-ing. February 2022.*



My intervention with sand from a local beach in Spain, which had in fact originally been imported from elsewhere, called into question the tendency to classify matter in terms of its geographic origins, shifting attention away from the Mediterranean as a zone of transmission from South to North and more towards multidirectional relationality, towards circulation (İşleyen and El Qadim, 2023, p. 5). Thinking with/in dust rather than about dust requires speculative drifting (Lavery, 2018; Alaimo, 2012; Szerszynski, 2018). Dust swirls but does not flow like water. It is more granular, more resistant to gravity in solid form, more

likely to settle than sink into the earth (Jamieson, 2021). Through its transgressions, dust does not dissolve or blur pre-existing borders. Dust invokes practices of *performing borders*. Here not there (but also there). Self not other (but also other). Dust has biological and meteorological cycles. It grounds, pollinates, fertilizes, cools the atmosphere, and compacts into sediment. Land itself and the built environment are materially and temporally entangled within dusty cycles of accumulation and dissipation. Dust overtly displaces while secretly making places, whole islands preceding time-bound territories.

### Conclusion/Middleness

Coming full circle, the first part of this paper explored how Saharan dust often materialises in weather reporting and science communication as an intrusion into territorialized airspace. I analysed how satellite images contribute to this imaginary by exceeding their purportedly objective function of empirical measurement (Dvořák and Parikka, 2021) by reproducing Eurocentric planetary imaginaries and narratives of otherness. In the second part, I sought to decentralise the hegemonic myth of a view from nowhere pertaining to conventional satellite images by contemplating other ways of storying and imag(in)ing weather. I drew on feminist and speculative orientations of thinking and becoming both *with* and *within* dust and atmospheres through modest, creative experiments with media and materiality. While such practices do not solve any problems per se, they summon a reckoning of the planetary and the local, the meteorological and the cultural, the self and the other. Thinking or drifting with dust sounds effortless or escapist even but the exercise requires an excavation of one's conditioning, consisting in a refusal of the authoritarian perspective "from which all is centrally, panoptically surveyed" (Philippopoulos-Mihalopoulos, 2016, pp. 80-81).

Instead, we plunge into "a continuous movement of multiple waves that can't be grasped from an individual standpoint" (Pelissero, 2018, p. 73). Beyond isolated subjects, beyond discrete objects or even assumptions that these objects are distinct yet 'entangled' like vines or ropes, one might better conceptualise or at least allow space for diffusions, secretions, concentrations, and evaporations between phases of matter (see Choy and Zee, 2015; Ballester 2020). I am not writing about a situationist *dérive* in which one drops relations to wander through a preformed geography (Debord 1956) but rather an encounter with the other echoing within oneself, flow within flow, movement within movement. More than a thought experiment, thinking or drifting with dust is a post-phenomenological diagnosis that the researcher is always already immersed in the shifting conditions of the medium of which and with/in which they speak but can never know in its entirety (McCormack 2018, 52). "An endless geographic plane of micromeshing pulsing quanta,



limitless webs of interacting blendings, leakings, mergings, weaving through ourselves” (Plant, 1997, p. 3).

Thinking or drifting with dust renders both humans and deserts “permeable” and all outlines dissolvable (Alaimo, 2012, p. 477). Dust to dust. The idea is to open a space in which “to reflect on how the field constitutes our subjectivity as researchers” (Nassar, 2018, p. 414) and we can only do so from within, from a position of what Trinh T. Min-ha has called “middleness” (2011, p. 70). In this “place of decentralization”, she writes, all “extremes lose their power” and “all directions are (still) possible”. Middleness is not a static centre but a state requiring “constant acknowledgement of and transformation in shifting conditions” (Minh-ha, 2011, p. 70; Deleuze and Guattari, 1987, p. 13; Szerszynski, 2018, p. 139). Middleness, then, is a process and practice. It can be evocative, performative, speculative, embodied, but also posthuman. It is alchemical; “like writing, inasmuch as alchemy is writing, it is an admixture of opposites” (Pinkus 2010, p. 3). Middleness has no edges or borders. It only ends when we settle for fixed standpoints, when we neglect our atmospheric dependencies, and where we deny ourselves a sense of immersion in atmosphere.

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