



# PEERING

TIM COWLISHAW

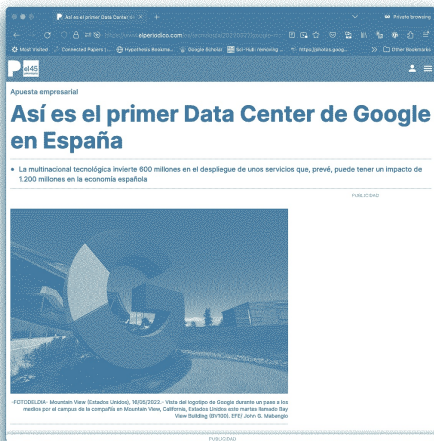
A face peers down at me, tinted blue by a bright sun which bleaches the sky behind a hazy featureless white. The face wears an expression of concern, or perhaps of puzzlement in the eyes. It's a familiar face, although not one I've seen from this angle. Below it, a question: "*Do you remember this moment?*". I don't - but it must have happened - there's photographic evidence after all.

It's a photo of me, revealed by the "memory reel" notification that Google Photos occasionally sends me, without my asking. But it's a strange type of memory, one that diverges so entirely from what I thought that I recalled. I'm peering into the lens, perhaps caught by surprise, perhaps attempting to diagnose some problem, but the overall impression is of someone peering into the mechanism, trying to see what's on the other side.

This hidden mechanism is on my mind now - receiving this notification was a moment of *Infrastructural uncanniness*<sup>1</sup> - a sudden, jarring reminder, that my phone, familiar, and personal, is one tendril of a much larger digital infrastructure, through which other agencies apart from my own operate. If I didn't knowingly take this photo, then who, or what did?

1. Geoghegan, B.D. (2016) 'Mind the Gap: Spiritualism and the Infrastructural Uncanny', *Critical Inquiry*, 42(4), pp. 899-922. Available at: <https://doi.org/10.1086/686945>.

Perhaps if I understood where this photo is now, then I might better understand how I'm entangled in this infrastructure. In my work investigating the material footprint of discarded data, one thing still eludes me: how the footprint of my own digital waste contributes to it. This photo offers an interesting glimpse of that involvement precisely because it offers no easy answers: it's "my data", but I never chose to store it, and wasn't aware of its existence until just now.

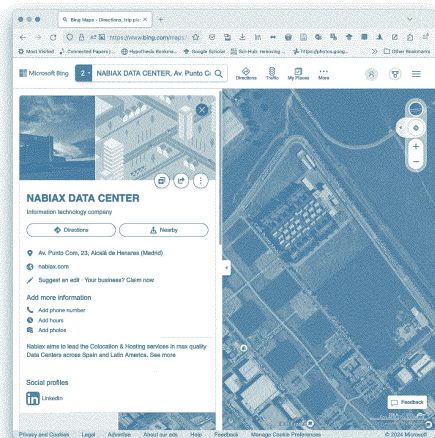


My phone gives me few clues: the photo was taken on the 29th of December 2020, at a point on the map I know: my home. The moment I don't remember lasted 1/100 of a second, a click of a shutter. But Google's interface tells me nothing about the photo now - not even a file size.

Recalling Anne Pasek's methods for *getting into fights with data centres*<sup>2</sup>, I open Google Photos on my laptop, and locate the photo. From the photo, a URL, from the URL, a domain, from the domain, an IP address, and from the IP, a location: Madrid.

This all seems too simple, too definite, each inference bringing more uncertainty. The domain of the image might point to one IP, or several, it might be a proxy, a CDN. Now, looking at a point on the map in the centre of the Puerta del Sol, I realise it offers a comforting illusion of specificity. There is definitely no Google data centre here.

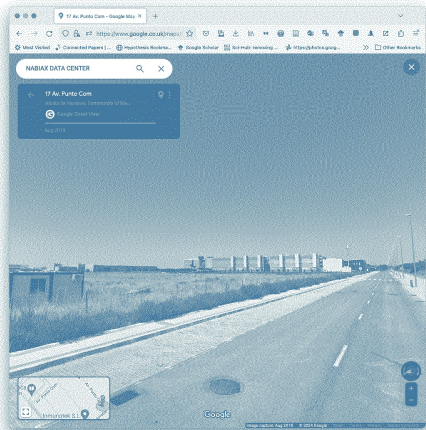
Still: it makes sense for *my particular photos* to be stored in the country where I live: these are not public images, distributed around the world for access from anywhere. In the face of uncertainty, an abductive leap: It is *probable* that my photo is in a Google facility in Spain. So, if not in the Puerta del Sol, where?



2. Pasek, A. (2023) 'Getting Into Fights With Data Centers: Or, a Modest Proposal for Reframing the Climate Politics of ICT', White Paper. Experimental Methods and Media Lab, Trent University, Peterborough, Ontario. Available at: <https://tinyurl.com/PeeringPasek>.

Google does have a data centre in Madrid: it was announced to great fanfare in the press<sup>3</sup> when it opened in 2022. The article mentions a partnership with Telefónica, and I soon locate another article<sup>4</sup> which places it in a Telefónica facility in Alcalá de Henares.

A map search for “data centre Alcalá”: squat grey buildings on the outskirts of town, with unfamiliar names. No sign of Telefónica or Google, but a search for “Telefónica Alcalá” yields an elegant brochure<sup>5</sup>, describing a state of the art facility with distinctive turret-like structures along the edge. I notice that one of the grey outlines on the map, named “Nabixax”, has a similar crenellated profile, switch to Street View: It's the same building.



I try to imagine its enormity: 15 square kilometres of usable space, and 100 MW of installed electrical capacity. 22 tonnes of CO<sub>2</sub><sup>6</sup> (five passenger flights from Madrid to Santiago de Chile, or 44 square metres of lost arctic ice) per hour.

More searches, more documents: Everything that helps keep my photo online 24/7. The frustrations of the technicians working there<sup>7</sup>, the layout of the control room and the enormous diesel tank for backup power<sup>8</sup>, the local council's generous offer of a new dedicated power line and substation, now open for tender<sup>9</sup>. These installations are built to *scale*<sup>10</sup>, their footprint and power supplies expanding continuously.

Trying to comprehend everything keeping this giant machine running is dizzying, as is knowing that I am, every time the shutter on my phone clicks, implicating myself in it further. But seen framed by the laptop screen, zoomable with a pinch of the fingers, I can't comprehend the scale of the place, nor the extent of my own involvement. To really get a sense of this, I reason, I have to go there, to stand alongside it.

3. <https://tinyurl.com/PeeringEIPeriodico>

4. <https://tinyurl.com/PeeringEuropa>

5. <https://tinyurl.com/PeeringBrochure>

6. <https://tinyurl.com/PeeringPower>

7. <https://tinyurl.com/NabixaxMapsReviews>

8. <https://tinyurl.com/PeeringPlan>

9. <https://tinyurl.com/PeeringTender>

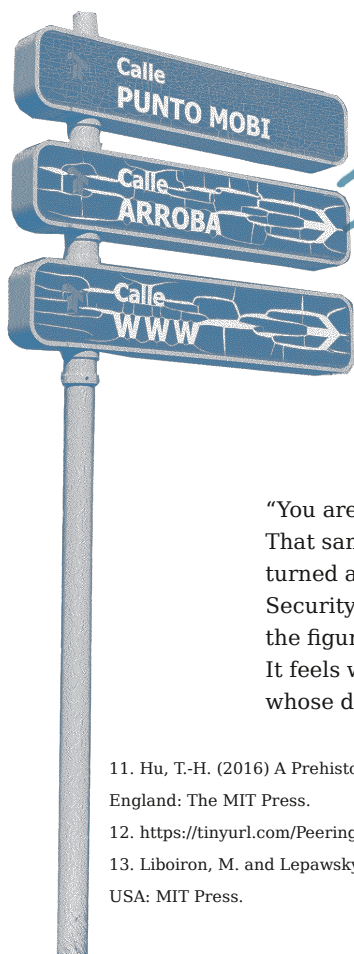
10. Tsing, A.L. (2012) 'On Nonscalability', *Common Knowledge*, 18(3), pp. 505-524.

Available at: <https://doi.org/10.1215/0961754X-1630424>

So, a few weeks later, I take a train to Madrid: It tickles me that i'm likely following the same path along which my image had passed, from fibre optic to fibre optic, peer to peer. Tung-Hui Hu<sup>11</sup> describes how the railway and the fibre optic network are often intertwined, and this is the case here: overlaying a map of fibre infrastructure<sup>12</sup> on to the railway network, and tracing the thread of a backbone link following the AVE line beneath me.

On the second leg of my journey, I approach Alcalá de Henares Universidad. An outskirts of an outskirts: Alcalá is a suburb of Madrid, and the Universidad station is in an outskirts of Alcalá: bordered on one side by warehouses, and on the other by the university campus and a large expanse of green scrubland.

Looking out of the window, I'm struck by the number of *trasteros* (self-storage units) I see. They and the data centre make good neighbours: Both need large amounts of cheap space, proximity to transport infrastructure (or the fibre under it), and they're both peripheral places, in the terminology of Discard Studies<sup>13</sup>: the "away" where unwanted things can be sent, out of sight and out of mind.



I trace an L-shaped movement along the edge of the wasteland (I could cut across, but i feel like an interloper, and don't want to draw attention to myself). As I walk, a low hum, barely there at first, but growing in intensity to the identifiable major-third drone of industrial air-conditioning. I turn a corner and see a weathered billboard welcoming me to "Tecnoalcalá Technological and Scientific Park". Below it, a sun-bleached street sign pointing to "WWW street", "Arroba (@) street", and ".mobi Avenue", already familiar from the map. I'm on ".com Avenue", the street, where at number 23, the Google Cloud region which I'm pretty certain holds my photo resides.

"You are entering a private complex - respect the instructions". That same feeling of being an interloper again: I'm not being turned away, but I'm definitely not being welcomed in either. Security, and secrecy: the "bunker mentality" of the cloud<sup>14</sup>, needs the figure of an outside threat from which we're being protected. It feels weird to inhabit both roles at once: I'm one of the people whose data is in there, but I'm also the interloper.

11. Hu, T.-H. (2016) A Prehistory of the Cloud. Illustrated edition. Cambridge, Massachusetts London, England: The MIT Press.

12. <https://tinyurl.com/PeeringFibre>

13. Liboiron, M. and Lepawsky, J. (2022) Discard Studies: Wasting, Systems, and Power. Cambridge, MA, USA: MIT Press.

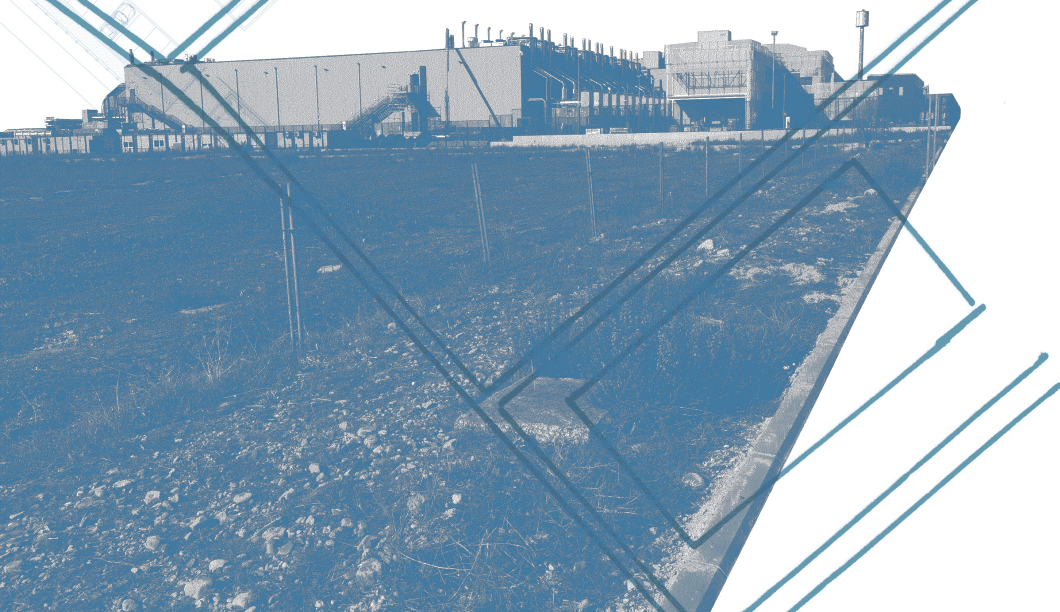
The weathered, sunbleached quality of the road signs can be seen on everything, and I can feel its cause in a very bodily way - even on an early February morning, it is uncomfortably hot, and I can feel the back of my neck burning. Curiously though, the road verges are more verdant than the surrounding scrubland. A closer look reveals the black serpentine tangle of an automatic watering system under these green borders: the clean, sustainable imaginary of the cloud must be maintained where it meets the material reality.

Rounding a corner, I see the now-familiar crenellated profile of Nabiax, and am struck by its scale. Not just the sheer size of it, but also the way in which I could see it *scaling* - one end of the building still under construction, and an expanse of unbroken but fenced off ground to its south reserved and waiting.

I arrive at the front entrance: a man-sized gate under the building's address in large metal signage, and a smaller, more temporary sign, reading "Nabiax" ("Google" and "Telefónica" conspicuous by their absence). This gateway is the only human-sized thing about this building: there are no windows, nor any clues of human habitation: Of the 10,000 jobs which this installation supposedly enabled<sup>14</sup>, few of them appear to be in this building.

Beyond the entrance, I see a row of pylons, stretching from the data centre across the field behind me, off in the direction of the substation. There's also a curious empty space, maybe the size of half a football pitch, fenced off, within the perimeter of the data centre, but, meticulously lawned, and empty, right above where the plan told me the diesel tanks reside.

14. <https://tinyurl.com/PeeringVanguardia>

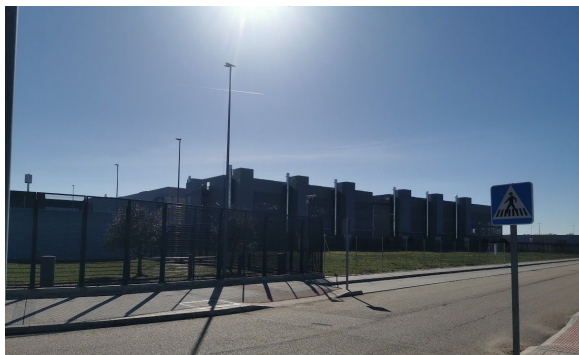


Standing on the corner on the other side of the patch of grass, I try to take in the entire installation: not just the building, but the construction sites surrounding it, the fibre network snaking under the roads and train lines, the electrical grid behind me and the backup generators below. I'm very aware of all I don't know, and can't see: most notably what's inside the building: the high fences and security cameras mean this is as close as I can get.

However, incomplete knowledge is still knowledge, and knowledge can be put into action. I may not understand the totality of this rhizomatic infrastructure, and I may never understand fully how my own digital traces are tied up with it, but I do now know two things.

The first, that *scale*, manifested in the impermeability, expandability and anonymity of these infrastructures, might prevent us from knowing them directly, but it also suggests other ways we might come to know and understand them. I might never know for sure that my photo is in this data centre, but I know that it's in one like it, and this logic of *scalability*<sup>15</sup> suggests that that other data centre will be much like this one: What I have learned and experienced here can still teach me something about the site my photo inhabits, even if I never know exactly where that is.

The second, is that this knowledge, does not need to be complete to be useful: Partial knowledge can still give us reasons to act, to decide. And so, on finishing this text, pasting in the image below, and hitting save, I return to my Google Photos account, navigate to the 29th of December 2020, select the blue and white smudge with the traces of a face, and I hit *delete*.



Thanks to Anne Pasek, for the methodological techniques outlined in *Getting into Fights with Data Centres*, for inspiration, and in general for tonnes of prior work I hope in some small sense I'm building on. Thanks also to Justin Pickard, for emergency ethnographic training and mentoring, extremely generative conversations, general moral support and *commitment to the bit*.

15. Hanna, A. and Park, T.M. (2020) 'Against Scale: Provocations and Resistances to Scale Thinking'. arXiv. Available at: <http://arxiv.org/abs/2010.08850>.