

# Under the Clouds



*From Paranoia  
to the  
Digital Sublime*

Since the second half of the twentieth century, we have lived under the shadow of two clouds: the mushroom cloud of the atomic bomb, and now the «cloud» of information networks. How did the metaphor of post-war paranoia become the utopian metaphor for today's global, interconnected world? If the mushroom cloud represented the potential annihilation of human civilization, the «cloud» is the diaphanous representation of the network-driven, information-saturated conditions in which we increasingly live, work and play.<sup>1</sup> These two interrelated clouds have shaped, and imbedded themselves into everyday life, their effects felt both in the world and in our heads, in matter as well as our metabolism. We are assailed with the effects and affects of the cloud, its solicitation of emotion and consumption, nearly every minute of every day.<sup>2</sup> Data overwhelms us with needs, demands, and sensations; our digital self lives a life of its own.<sup>3</sup> The singular image of the cloud, unseen yet floating above us, stands for everything from the abstractions of the financial system to the increasingly mediated character of our social relationships. A contemporary sublime has come to replace the natural one through the clouds, the sublime of the «third industrial revolution».

The numbers involved themselves reveal the sublimity of life under the clouds:

*A billion users on Facebook, or a seventh of the world's population.<sup>4</sup> A third of internet users globally accessing the Amazon cloud daily.<sup>5</sup> 6 billion smartphones on earth by 2020.<sup>6</sup>*

How might we critically confront the flows of this sublime, the realities of digital space, and the myriad effects of the decentralized networks and interfaces that shape daily life?<sup>7</sup> What I want to do is attempt to describe the phantasmagoric character of our sublime, to limn out the shape of its expanding edges, the shadow it has come to cast over us. If beauty was the paradigmatic aesthetic category of modernity, it is the sublime that defines our contemporary condition.

The concept of the sublime is associated with central texts of philosophical aesthetics: Edmund Burke's 1757 treatise, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* and Immanuel Kant's *Critique of*

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João Ribas

*the Power of Judgment*, from 1790.<sup>8</sup> In Burke's assessment, the sublime overpowers the self<sup>9</sup>, as a response to «[w]hat- ever is fitted in any sort to excite the ideas of pain and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror.»<sup>10</sup> Burke's sublime is associated with «passions which concern self-preservation», mostly those of «pain and danger».<sup>11</sup> This sublime—«productive of the strong- est emotion which the mind is capable of feeling»—func- tions according to a distancing effect.<sup>12</sup> «When danger or pain press too nearly», Burke mentions, «they are incapable of giving any delight, and are simply terrible». At «certain distances, and with certain modifications», however, «they are, delightful».<sup>13</sup>

Kant's inquiry into the sublime is presented as a «mere ap- pendix» to his consideration of aesthetic judgment, and the «relation of the subject to its affect».<sup>14</sup> For Kant, the sublime is found «in a formless object, so far as in it or by occasion of it *boundlessness* is represented, and yet its totality is also present to thought».<sup>15</sup> The sublime represents the unrepre- sentable, the very limits of representation. Kant distinguishes between two conceptions of the sublime: the *mathematical* and the *dynamical*, the former in which we are overwhelmed by size<sup>16</sup>, and the later, by force.<sup>17</sup> Both are united by «a quickly alternating attraction towards, and repulsion from, the same Object».<sup>18</sup> The *mathematically* sublime refers to «the very inadequacy of our faculty for estimating the magni- tude of the things in the sensible world»<sup>19</sup>, elicited by some- thing so vast, that it overwhelms our capacity to comprehend it as a whole.<sup>20</sup> In the encounter with unboundedness or vastness, attempts at understanding fail; what is empirically present lies beyond the capacity of the imagination to contain it.<sup>21</sup> Along with St. Peter's Basilica and the Egyptian pyra- mids, Kant gives examples of cases where our understanding «is never complete», such as is the case with infinity or death<sup>22</sup>; «the Milky Way», and the «gloomy raging sea».<sup>23</sup>

The *dynamical* sublime reflects our powerlessness in rela- tion to the might of nature.<sup>24</sup> As Kant describes, «[I]n the immensity of nature, and in the inadequacy of our faculties for adopting a standard proportionate to the aesthetical estimation of the magnitude of its *realm*, we find our own limitation».<sup>25</sup> This sublime, like Burke's, also works

- 1 — Sianne Ngai, «Our Aesthetic Cate- gories», Cambridge, MA: Harvard University Press, 2012, p. 1. — 2 — Ibid, p. 23.
- 3 — Shumon Basar, «Introduction», in *Shopping Jail*, Berlin: Sternberg Press, p. 201.
- 4 — Emilie Bickerton, «Culture after Google», *New Left Review*, March–April, 2015 available from <https://newleftreview.org/II/92/emilie-bickerton-culture-after-google> (accessed 5 May 2015). — 5 — Ibid.
- 6 — «Smartphones to Account for Two Thirds of World's Mobile Market by 2020 Says New GSMA Intelligence Study» available from <http://www.gsma.com/newsroom/press-release/smartphones-account-two-thirds-worlds-mobile-market-2020/> (accessed 5 May 2015). — 7 — See Alexander Galloway, *The Interface Effect*, Boston: Polity, 2012.
- 8 — Together with Hegel's lectures on Aesthetics, these two texts set the dominant modalities of aesthetic judgment in the two categories of the beautiful and the sublime. Both Kant and Burke's text follow from Longinus' earlier treatment of the sublime. See *On the Sublime*, available from <http://www.gutenberg.org/files/17957/17957-h/17957-h.htm> (accessed 4 May 2015). — 9 — Vanessa L. Ryan, «The Physiological Sublime: Burke's Critique of Reason», in *Journal of the History of Ideas* (Philadelphia), vol. 63, April 2001, pp. 265–79, available from <http://www.englweb.umd.edu/englfac/KChuh/Ryan.pdf> (accessed 4 May 2015). — 10 — Edmund Burke, *Of the Sublime and Beautiful*, available from <http://www.bartleby.com/24/2/107.html> (accessed 4 May 2015). — 11 — Ibid. — 12 — Ibid. — 13 — Ibid. — 14 — Kirk Pillow, *Sublime Under- standing: Aesthetic Reflection in Kant and Hegel*, Cambridge, MA: MIT Press, 2000, p. 43; Jacques Derrida, *The Truth in Painting*, Chicago: Chicago University Press, 1987, p. 44. — 15 — Immanuel Kant,



according to a distancing effect, as we experience the terrifying power of nature away from its ability to cause direct harm.<sup>26</sup> 'We can', Kant writes, 'regard an object as *fearful*, without being afraid of it'<sup>27</sup> and our estimation of ourselves in relation to nature in this way 'loses nothing through the fact that we must regard ourselves as safe in order to feel this inspiriting satisfaction'.<sup>28</sup> Examples of this type of sublime that Kant provides include volcanoes, and the 'clouds piled up in the sky'.<sup>29</sup>

In these ineffable clouds lies the phantasmagorical nature of the contemporary sublime. In their interrelated effects, and the economic, cognitive, affective and social world they engendered, the two clouds of the twentieth and twenty-first centuries have a direct historical connection. The emergence of the information and communication networks that the digital 'cloud' condenses have their source in the technologies of the earlier sublime cloud of post-war nuclear weapons.<sup>30</sup>

The familiar image of the mushroom cloud comes from the documented nuclear tests beginning with the first detonation of an atomic bomb, the 'Trinity' test, on 16 July 1945. The explosion was captured from a variety of perspectives by dozens of still and film cameras, introducing a new image into the popular imagination.<sup>31</sup> The scale and perspective of the mushroom cloud, its expanding shape developing over several negatives, was both *inconceivable*—in the potential destruction it could cause—and *unrepresentable*, fixed only in the alluring, changing shape of a cloud. Over 500 of these historical images of nuclear tests and mushroom clouds have now been posted on Flickr by the Los Alamos National Laboratory.<sup>32</sup> Such images capture 'the superheated sphere of burning gas that can blind a person with its beauty, its dripping christblood colors, solar golds and reds [...] the pulverized mass of radioactive debris, eight miles high, ten miles, twenty, with skirted stem and smouldering platinum cap', as author Don DeLillo aptly describes in *Underworld*.<sup>33</sup> The scale of the potential destruction of this cloud was evinced by the bombing of Hiroshima at 8:15 am on 6 August 1945, and that of Nagasaki, just three days following. As Major Claude Eatherly, in charge of surveying the weather conditions over Hiroshima and Nagasaki, would write years later:

'Transition from the faculty which judges of the Beautiful to that which judges of the Sublime' in *The Critique of Judgment*, London: MacMillan and Co., 1941 available from <http://oll.libertyfund.org/titles/1217> (accessed 4 May 2015). — 16 — Kant, 'Explanation of the term "sublime"', *ibid.* — 17 — Immanuel Kant: Aesthetics, Internet Encyclopedia of Philosophy, available from <http://www.iep.utm.edu/kantaest/#SH2c> (accessed 4 May 2015). — 18 — Hannah Ginsborg, 'Kant's Aesthetics and Teleology', in *The Stanford Encyclopedia of Philosophy* available from <http://plato.stanford.edu/archives/fall2014/entries/kant-aesthetics/> (accessed 4 May 2015). The feeling elicited by the sublime is based, for Kant, on the feeling of pain and fear. — 19 — Pillow, pp. 69–70; p. 105. Kant quoted in Pillow, p. 97 and Luc Ferry, *Homo Aestheticus*, Lisbon: Edições 70, 2012, p. 147. — 20 — Kant, (§25, 250) and Kant's Aesthetics and Teleology, 2.7 The Sublime available from <http://plato.stanford.edu/entries/kant-aesthetics/#2.7> (accessed 4 May 2015). — 21 — *Ibid.* — 22 — Pillow, p. 71. — 23 — Kant, 'Of that estimation of the magnitude of natural things which is requisite for the idea of the Sublime', *ibid.* — 24 — Kant's Aesthetics and Teleology, available from <http://plato.stanford.edu/entries/kant-aesthetics/#2.7> (accessed 4 May 2015). — 25 — Kant, 'Of nature regarded as might', *Ibid.* — 26 — Kant's Aesthetics and Teleology. As Burke writes, 'Terror is a passion which always produces delight when it does not press too close' (p. 42). — 27 — Kant, *The Critique of Judgment*, *ibid.* — 28 — Kant, 'Of Nature regarded as Might', *ibid.* — 29 — Kant (§28, 261). — 30 — The 'nuclear as the unthinkable', in its scale and scope, became a version of the sublime, as Frances Ferguson claimed. See Frances



*There were scattered [c]louds over the city of Hiroshima... The weather seemed ideal to me—the city would be obscured and saved... What I wanted to happen did not happen. The clouds over Hiroshima diminished and scattered. The bombardier on the bomb carrying plane missed the target some 3,000 feet and destroyed the city...*<sup>34</sup>

The effect of the bomb was sublimely terrifying. ‘You happen to have left 200,000 dead behind you’, the philosopher Günther Anders wrote to Eatherly.<sup>35</sup> The unfathomable scale of destruction, as the limits of human finitude in the terror of annihilation without a trace, found comprehension precisely in the *boundlessness* of the mushroom cloud<sup>36</sup>—a ‘boundless means [e]xceeding every possible end’, as philosopher Peter Sloterdijk writes.

The paranoia condensed in the image of the mushroom cloud stems from the phantasmatic event haunting the subsequent period after World War II: nuclear holocaust. The stockpile of post-war nuclear weapons could assure the death of every person on earth, multiple times.<sup>37</sup> The image of the mushroom cloud effectively involved coming to terms with this potential nonexistence of the human, as an image of an apocalyptic end frozen in a fraction of a second. The structuring ‘fable’ of the post-war era, the possible destruction of the very evidential *presence* of human life on the planet served as ‘absolute referent’ of any interpretative horizon, be it political, cultural, economic, or technological.<sup>38</sup> By the 1950s, the fission weapons dropped in the bombings and depicted in the tests—their energy a thousand-fold compared to conventional bombs—were themselves far exceeded by thermonuclear weapons. These harnessed the combined power of

Ferguson, ‘The Nuclear Sublime’, in *Diacritics*, vol. 14, no. 2, summer, 1984, pp. 4–10. — 31 — *Mushroom clouds strange, familiar, and fake* by Alex Wellerstein, published 1 December 2014 available from <http://blog.nuclearsecrecy.com/2014/12/01/mushroom-clouds-strange-familiar-fake/> (accessed 4 May 2015). — 32 — Ibid and William J. Broadnow, ‘Dawn of Nuclear Arms, Declassified’, *New York Times* (New York), 9 November 2014 available from [http://www.nytimes.com/2014/11/11/science/the-dawn-of-nuclear-weapons-declassified.html?\\_r=1](http://www.nytimes.com/2014/11/11/science/the-dawn-of-nuclear-weapons-declassified.html?_r=1) (accessed 5 May 2015). — 33 — Don DeLillo, *Underworld*, New York: Scribner, 1997, p. 826. — 34 — Günther Anders and Claude Eatherly, *Burning Conscience*, New York: Monthly Review Press, 1961, pp. 80–1. — 35 — Ibid. — 36 — Peter Sloterdijk, *Critique of Cynical Reason*, Minneapolis: University of Minnesota Press, p. 130. — 37 — Ibid, p. 128. — 38 — Ibid, p. 129; Jacques Derrida, ‘No Apocalypse, Not Now’, in *Psyche: Inventions of the Other*, vol. 1, Stanford: Stanford University Press, 2007, pp. 307–406. — 39 — See [http://www.ucsusa.org/nuclear-weapons\\_and\\_global\\_security/solutions/us-nuclear-weapons/how-nuclear-weapons-work.html#.VR6oxULZpBU](http://www.ucsusa.org/nuclear-weapons_and_global_security/solutions/us-nuclear-weapons/how-nuclear-weapons-work.html#.VR6oxULZpBU) (accessed 4 May 2015). — 40 — Harold L. Brode, Thermal Radiation From Nuclear Explosions, August 1963, Rand Corporation, <http://www.rand.org/content/dam/rand/pubs/papers/2008/P2745.pdf> (accessed 17 May 2015) — 41 — The end American monopoly on nuclear weapons that initiated this policy of deference gave rise to the birth of NATO and the Cold War stalemate, and is reflected in the ongoing

Mutual Assured Destruction (MAD) diagram  
© 2012 RMIT University



nuclear fission and fusion<sup>39</sup> to yield 10,000 kilotons (or 10 megatons) of destructive force, the resulting thermal radiation hotter than the surface of the sun.<sup>40</sup>

The geopolitical response to this unprecedented sublime potential for destruction, and the ensuing proliferation of nuclear weapons, was the doctrine of «mutual assured destruction (MAD)» a form of deterrence pursued throughout the Cold War.<sup>41</sup> In the words of Edward Teller, known as «the father of the hydrogen bomb», this political strategy entailed stockpiling nuclear weapons so that «neither side has anything to gain by initiating a first strike, because of the retaliatory capability of both to send the other back to the Paleolithic».<sup>42</sup> The possibility of massive, all-annihilating retaliation ostensibly provided an effective deterrent. The variety of war game scenarios played out by military defence analysts through the Cold War rested precisely on the question of whether either side in a nuclear conflict would retain «substantial residual strategic forces» to retaliate after an initial attack.<sup>43</sup> Doing so would ensure that the surviving arsenal of nuclear weapons could be used to devastating effect.<sup>44</sup> The entire premise of «mutually assured destruction» rested on the assurance of such a retaliatory attack, impossible if communication infrastructure were disrupted by a first wave of bombs, and therefore nulling the overall strategy altogether.<sup>45</sup> How might a «command and control network» survive in order to assure the total annihilation of an attacking enemy?<sup>46</sup>

Paul Baran, a researcher at the RAND Corporation, proposed an answer in a 1962 memo «On Distributed Communication Networks». Baran's remarkable proposal made use of computing power, communication systems and information theory. Rather than utilizing a centralized network, «obviously vulnerable as destruction of a single central

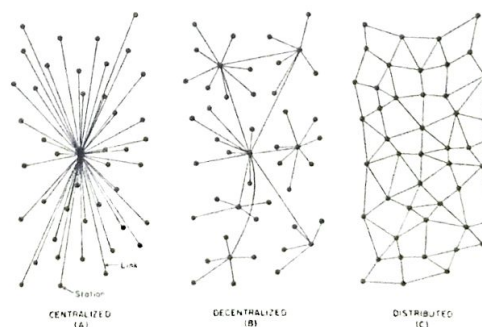
concerns of the proliferation of nuclear weapons to so-called «rogue states». See <http://www.strategicstudiesinstitute.army.mil/pdffiles/pub585.pdf> (accessed 4 May 2015).

— 42 — Michael Shermer, «Will Mutual Assured Destruction Continue to Deter Nuclear War? Does deterrence prohibit the total abolishment of nuclear weapons?» in *Scientific American*, vol. 310, issue 6, 1 June 2014 available from <http://www.scientificamerican.com/article/will-mutual-assured-destruction-continue-to-deter-nuclear-war/> (accessed 4 May 2015).

— 43 — Johnny Ryan, «How the Atom Bomb Gave Birth to the Internet», *Ars Technica*, 21 February 2011, available from <http://arstechnica.com/tech-policy/2011/02/how-the-atom-bomb-gave-birth-to-the-internet/> (accessed 4 May 2015).

— 44 — Ibid. — 45 — Ibid. — 46 — «Paul Baran and the Origins of the Internet», RAND Corporation, available from <http://www.rand.org/about/history/baran.html> (accessed 4 May 2015).

«On Distributed Communication Networks», showing three types of networks according to Paul Baran, 1962





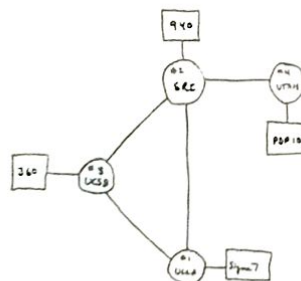
node destroys communication between the end stations»,<sup>47</sup> Baran proposed the creation of *distributed* networks. A series nodes would route information, divided into «message blocks», node-to-node across the network,<sup>48</sup> ensuring it would be able to operate after a disruption.<sup>49</sup>

Towards the end of the memo, Baran suggests the idea of «the interconnection, one day, of many all-digital links to provide a resource optimized for the handling of data for many potential intermittent users—a new common-user system».<sup>50</sup> The Pentagon's Advanced Research Projects Agency Network (or Arpanet) was such an attempt at networking informational and computational power.<sup>51</sup> The aim of Arpanet was to make it possible for research institutions to share the processing power of several computers spread over a network. On 29 October 1969, the first data travelled between two nodes of the four node network—eventually evolving to become the internet.<sup>52</sup> The original Arpanet network lead to the development of email, packet switching, and the Transmission Control/Internet protocols (TCP/IP), all which have come to define digital communication systems.<sup>53</sup>

These advanced technologies of the post-war era have now evolved to fit in the palm of our hand. We live in the aftermath of the nodes' proliferation into a vast global network, walking around with an immense archive of images in our pockets, and a digital shadow of ourselves floating above us.<sup>54</sup> «You touch a button», DeLillo writes, «and all the things concealed from you for centuries come flying into the remotest room».<sup>55</sup> With the widespread expansion of information networks in the late twentieth century, digital and mobile media have come to play a signal and infrastructural role in everyday life. The «network» itself has come to define all forms of social relations, and enabled a global, interconnected marketplace on an unprecedented scale.<sup>56</sup>

— 47 — Ibid. — 48 — «By routing the messages like «hot potatoes», node-to-node, along the quickest routes as chosen by the nodes themselves», as Johnny Ryan writes, «the network could route around areas damaged by nuclear attacks.» See Ryan, <http://arstechnica.com/tech-policy/2011/02/how-the-atom-bomb-gave-birth-to-the-internet/> (accessed 4 May 2015). — 49 — Paul Baran, «On Distributed Communication Networks», September, 1962, available from <http://www.attivissimo.net/timeline/paul-baran-on-distributed-comms.pdf> (accessed 5 May 2015). — 50 — Ibid. — 51 — Ian Peter, «The Beginnings of the Internet», available from <http://www.nethistory.info/History%20of%20the%20Internet/beginnings.html> (accessed 5 May 2015). — 52 — Marc Weber, «October 29, 1969: Happy 40th Birthday to a Radical Idea», available from <http://www.computerhistory.org/atchm/october-29-1969-happy-40th-birthday-to-a-radical-idea/> (accessed 5 May 2015). — 53 — Ibid. — 54 — Nicole Aschoff, «The Smartphone Society», *Jacobin* (New York), issue 17, Spring 2015, available from — <https://www.jacobinmag.com/2015/03/smartphone-usage-technology-aschoff/> (accessed 5 May 2015). — 55 — DeLillo, p. 812. — 56 — Metahaven, *Captives of the Cloud: Part I*, available from <http://www.e-flux.com/journal/captives-of-the-cloud-part-i/> (accessed 5 May 2015). Text published here on pp. 177. — 57 — See Hiroki Azuma, *General Will 2.0: Rousseau, Freud, Google*, New York: Vertical, 2014. — 58 — See Antonio Regalado, «Who Coined «Cloud Computing»?», *MIT Technology Review*, 31 October

4 node ARPANET  
diagram, 1969  
© The Computer Museum History Center



The cloud is our representation of this noumenal realm of big data, where information can resolve complex problems and even manifest unconscious desires.<sup>57</sup> We now think, see and feel through the cloud.

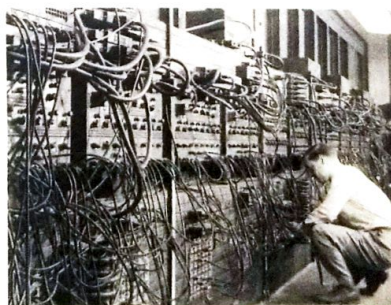
The use of the term 'cloud computing' to refer to the hosting of processing power, memory, software and applications on remote data centres, gained wide prominence around the mid-2000s.<sup>58</sup> Corporations like Amazon began using the term to describe the idea of information architecture for accessing data over the Web.<sup>59</sup> Google CEO Eric Schmidt explained the 'cloud' at a conference in 2006:

*It starts with the premise that the data services and architecture should be on servers. We call it cloud computing—they should be in a 'cloud' somewhere. And that if you have the right kind of browser or the right kind of access, it doesn't matter whether you have a PC or a Mac or a mobile phone or a BlackBerry or what have you—or new devices still to be developed—you can get access to the cloud.*<sup>60</sup>

The meteorological metaphor employed in this new computing paradigm has in fact been long intertwined with the evolution of computing. There are clouds throughout this history.<sup>61</sup> Lewis Fry Richardson, for example, had attempted to predict the weather by modelling the earth's atmosphere through mathematical equations during the First World War.<sup>62</sup> Richardson estimated that 64,000 people would be necessary to complete these calculations.<sup>63</sup> Such calculations were, in fact, ideally suited for the first modern computer, the ENIAC (Electronic Numerical Integrator and Computer), which provided the first single day weather prediction in 1950.<sup>64</sup> These predictions became a model

2011, available from <http://www.technologyreview.com/news/425970/who-coined-cloud-computing> (accessed 4 May 2015). As Regalado claims, the earliest documented references to the phrase 'cloud computing' is a May 1997 trademark application for 'cloud computing' from a now-defunct company called Net-Centric. — 59 — Peter Mell and Timothy Grance, *The NIST Definition of Cloud Computing*, Special Publication 800-145, National Institute of Standards and Technology, US Department of Commerce, September 2011, available from <http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf> (accessed 4 May 2015). The cloud is a 'model for enabling ubiquitous, convenient, demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction', according to the US National Institute of Standards and Technology (NIST). — 60 — Eric Schmidt, 'Conversation with Eric Schmidt hosted by Danny Sullivan', Search Engine Strategies Conference, 6 August 2006, available from <http://www.google.com/press/podium/ses2006.html> (accessed 5 May 2015), quoted in Metahaven. — 61 — I am grateful to Antonio Frugiulere for pointing out the relation of clouds to early computing. — 62 — See [http://celebrating200years.noaa.gov/foundations/numerical\\_wx\\_pred/welcome.html](http://celebrating200years.noaa.gov/foundations/numerical_wx_pred/welcome.html) (accessed 5 May 2015). — 63 — Ibid. — 64 — Ibid.

Electrical Numerical Integrator and Computer (ENIAC), c. 1946.  
© U.S. Army from the archives of the ARL Technical Library





for the simulation of complex physical and social systems, utilizing the increasingly expanding, networked computational power.

There are clouds too in the first photoshopped image, created by John Knoll nearly forty years later, in 1987.<sup>65</sup> The image depicts his then-girlfriend, Jennifer, sitting topless on a beach in Tahiti.<sup>66</sup> Knoll's image marks a decisive moment in the relationship between the virtual and the real, a kind of origin-myth for the mutability and ontological ambiguity of the digital image. It also recalls, perhaps unconsciously, an earlier sublime, that of the nineteenth century, with a particular resemblance to Caspar David Friedrich's *Der Wanderer über dem Nebelmeer* [The Wanderer Above the Sea of Fog] (1817–18). Both have their subjects turned away to the viewer, gazing out into the distant horizon, clouds floating above them. Yet there is an important intervening difference between them: it is a female subject, nearly nude, that is depicted in the first photoshopped image—as a body that can be manipulated and altered as code, contoured or changed, with a variety of filters. In the post-war era, the female body was appropriated as a commodity through which to sell other commodities, linking sex and the bomb through the dialectical development of a booming post-war economy (evinced by the German *Wirtschaftswunder* and the Japanese 'post-war economic miracle').<sup>67</sup> In digital space, the human body, in particular the gendered body, is an object whose reality can be simulated and mediated at will—as a post-representational female subject.<sup>68</sup> 'In all images, particularly of women', writes the artist Kate Cooper, 'there's a relationship to desire, and within that a real violence, especially within CG images.'<sup>69</sup> The female body is once again re-imagined and reconstituted inside the vectors of a new kind of hyper-capitalist space, among the clouds.

— 65 — Gordon Comstock, 'Jennifer in Paradise: The Story of the First Photoshopped Image', *The Guardian* (London), 13 June 2014, available from <http://www.theguardian.com/artanddesign/photography-blog/2014/jun/13/photoshop-first-image-jennifer-in-paradise-photography-artefact-knoll-dullaart> (accessed 4 May 2015). — 66 — See <https://www.youtube.com/watch?v=Tda7jCwvSzg>. 'It was good to do demos with', Knoll explains, of what he called a 'tourist picture' that 'got around a lot'. — 67 — Takatoshi Ito, *Japan and the Asian Economies: A 'Miracle' in Transition*, available from [http://www.brookings.edu/~media/Projects/BPEA/1996-2/1996b\\_bpea\\_ito\\_weinstein.PDF](http://www.brookings.edu/~media/Projects/BPEA/1996-2/1996b_bpea_ito_weinstein.PDF) (accessed 4 May 2015). — 68 — Jeppe Ugelvig, 'Kate Cooper: Hypercapitalism and the Digital Body', *DIS Magazine* (New York), available from <http://dis-magazine.com/dysmorphia/66668/kate-cooper-hypercapitalism-and-the-digital-body/> (accessed 5 May 2015). — 69 — Ibid.

Caspar David Friedrich  
*Der Wanderer über dem Nebel-*  
*meer* [The Wanderer Above  
the Sea of Fog], 1817–18  
© bpk, Berlin / Hamburger Kunsthalle

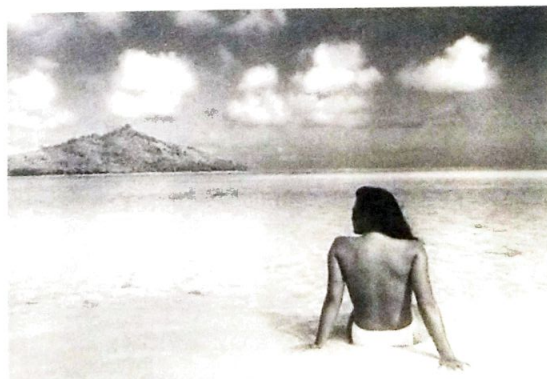


The miasmatic, nebulous metaphor of the cloud is in fact an obfuscating and mystifying representation. As a metaphor for digitization and contemporary hypomnemata—the externalization of memory and knowledge—the cloud is our way of dealing with the vastness of it all. In doing so, the metaphor masks and literally naturalizes the networks of power—literal, juridical, political, biological, aesthetic, corporate, etc.—that increasingly control the production and circulation of data.<sup>70</sup> «To users, the cloud seems almost formless, or transparent», the collective Metahaven explains, «always available, ever-changing, hanging in the air... formless...».<sup>71</sup> Yet despite the diaphanous *no-place* it seems to evoke, the «cloud» in fact consists of various material and immaterial aspects. An apparently immaterial cloud is powered by thirty billion watts of electricity, equivalent to the output of thirty nuclear power plants.<sup>72</sup> The inverse of the cloud, then, is the representational map of the Internet, the iterations of which show the distributed opacity of whom gets to see, produce, and exchange what, and, as importantly, where—the kind of real world landscape that the «cloud» occludes.

Such is the ecological scale of our sublime, of its resource-draining power and geomorphic scale. It is a sublime of data crashes, garbage dumps, toxic lakes, and hollowed out mountains. «While data in the cloud may seem placeless and omnipresent», Metahaven clarifies, «precisely for this reason, the infrastructure safeguarding its permanent availability is monstrous in size and scope».<sup>73</sup> This infrastructure ranges from fibre-optic connectivity over various continents, to user-generated content, and everything in between.<sup>74</sup> The ecological result is devastating: A toxic lake in Inner Mongolia, for example, is the dumping ground for waste created by the production of cerium, a «rare earth» mineral used in

— 70 — Metahaven, «Captives of the Cloud: Part I», *e-flux journal* #37, available from <http://www.e-flux.com/journal/captives-of-the-cloud-part-i/> (accessed 5 May 2015). — 71 — Ibid. — 72 — Ibid. As Mark P. Mills puts in his study of the electricity use involved in the global digital economy, «The Cloud Begins With Coal». See [http://www.tech-pundit.com/wp-content/uploads/2013/07/Cloud\\_Begins\\_With\\_Coal.pdf?c761ac&2b8101](http://www.tech-pundit.com/wp-content/uploads/2013/07/Cloud_Begins_With_Coal.pdf?c761ac&2b8101) (accessed 5 May 2015). — 73 — Metahaven. — 74 — Ibid.

John Knoll  
*Jennifer in Paradise*, 1987  
© John Knoll





the manufacturing of smartphones and flatscreens.<sup>75</sup> A 825-mile path from New York to Chicago was blasted by a telecommunications company in order to place a high-speed fibre optic cable, resulting in a three-millisecond reduction in the speed of financial transactions. 'Using rocksaws and dynamite, Spread blasted through... mountains and dirt, all for a one inch pipe to carry information that no human would ever be able to understand', as MIT Media Lab's Kevin Slavin states.<sup>76</sup> The cloud relies on these submarine cables, wires, routers, switches, and deep tunnels to route information<sup>77</sup>, concentrated in 'Carrier Hotels', 'where the major telecommunications networks meet to exchange data'.<sup>78</sup> For an algorithm, these points are 'the city's most valuable natural resource: the direct pipe to the network'.<sup>79</sup> The advantage of accessing data microseconds faster than another algorithm is the difference between winning and losing.<sup>80</sup>

As result, 'landscapes are being sculpted and reshaped, all for a few algorithms to be able to operate a little faster than the other algorithms they compete with'.<sup>81</sup> The speeds of these algorithms, which increasingly regulate online traffic while functioning as financial instruments shaping economic reality, are part of the hyper-circulation of images, credit, and data of digital capital. As more data ends up in the cloud, it is more easily and effectively collected, mined, and monetized.<sup>82</sup> The infrastructure to support this involves vast amounts of power, labour and raw material. The worldwide spending on the 'cloud', both public and private, is set to be \$22.6 billion in 2015, marking a definitive investment in the evolving architecture initiated by the post-war threat of nuclear war.<sup>83</sup>

The threat of nuclear destruction included the invisible danger of radiation and radioactive fallout. 'An invisible dust

— 75 — The dystopian lake filled by the world's tech lust. See — Tim Maughan, BBC, available from <http://www.bbc.com/future/story/20150402-the-worst-place-on-earth?p=1> (accessed 5 May 2015). — 76 — Kevin Slavin, 'How Algorithms Shape Our World', available from [http://www.carrollfletcher.com/usr/library/documents/michael-najjar-texts/cf\\_michael-najjar\\_kevin-slavin\\_algorithms.pdf](http://www.carrollfletcher.com/usr/library/documents/michael-najjar-texts/cf_michael-najjar_kevin-slavin_algorithms.pdf) (accessed 5 May 2015). — 77 — Tim Wu and Jack Goldsmith quoted in Metahaven, 'Captives of the Cloud: Part II', e-flux journal #37, available from <http://www.e-flux.com/journal/captives-of-the-cloud-part-ii/> (accessed 5 May 2015). — 78 — Slavin. — 79 — Ibid. — 80 — Ibid. — 81 — Ibid. — 82 — Metahaven, 'Captives of the Cloud II'. — 83 — Ibid and 'WW Spending for Public and Private Cloud Storage at \$22.6 Billion by 2015', available from <http://www.storagenewsletter.com/rubriques/market-reportsresearch/idc-public-and-private-cloud-storage/> (accessed 5 May 2015).

*The Amazing Spider-Man*,  
1963



of radiation «sand» could spread over cities of the earth and «populations by radioactivity without the noisy warning of an atomic bomb», declared one post-war scientific authority.<sup>84</sup> This invisible terror, irradiating any survivors of a nuclear attack, extended the deleterious effect of the bomb in the invisible threat of gamma rays. «Ionizing radiation—the kind that minerals, atom bombs and nuclear reactors emit—does one main thing to the human body: it weakens and breaks up DNA, either damaging cells enough to kill them or causing them to mutate in ways that may eventually lead to cancer».<sup>85</sup> This menacing power of radiation found representation in the monstrous sublime scale of *Godzilla*, a monster unleashed by a thermonuclear explosion, as well as a variety of cultural phenomena from Spider-Man, to the zombies of sci-fi films.<sup>86</sup> Radiation represented the new threat of a technological realm existing beyond human perception or the human senses, its mutational danger unseen, unfelt, tasteless and odourless, yet potentially everywhere.<sup>87</sup>

Information floating in the cloud—where data is now increasingly stored and controlled—replaces this invisible threat of radiation. Though information forms the basis for much of contemporary life, it is not present, nor felt in itself.<sup>88</sup> Data moves through apparently unseen yet pervasive ways. As the effects of radiation, so the effects of cloud's informational speeds and immaterial forces, felt as collective and individual IRL effects. Despite the immaterial metaphor, the shadow of the cloud presses itself onto our bodies and the world around us. The contemporary sublime works as much with affect and cognition, as with the raw material of the earth<sup>89</sup>, all connected in the social, economic, emotive, and libidinal networks that pervade both physical and digital space. The resulting consumptive effects are many,

— 84 — Robert Jacobs, «Radiation as a Cultural Talisman: Nuclear Weapon Testing and American Popular Culture in the Early Cold War», in *The Culture and Conflict Review* (Monterey, CA), 6 January 2012, available from <http://nps.edu/programs/ccs/webjournal/Article.aspx?ArticleID=115> (accessed 5 May 2015). — 85 — Molika Ashford, «FYI: How Does Nuclear Radiation Do Its Damage? Or, why everyone is stocking up on iodine tablets», *Popular Science*, 16 March 2011, available from <http://www.popsci.com/science/article/2011-03/fyi-how-does-nuclear-radiation-do-its-damage> (accessed 5 May 2015). — 86 — Brian Merchant, «A Brief History of Godzilla, Our Walking Nuclear Nightmare», *Vice Motherboard*, 23 August 2013, available from <http://motherboard.vice.com/blog/godzilla-is-our-never-ending-nuclear-nightmare> — 87 — Robert Jacobs, available from <http://nps.edu/programs/ccs/webjournal/Article.aspx?ArticleID=115> «Able to kill silently and invisibly at a distance and, by the late 1950s, widely reputed to be present in mother's milk and human bones, radiation represented a threatening technological world that seemed to exist beyond reach of the senses.» — 88 — «Even though information provides the basis for much of contemporary society, it is never present in itself.» See Katherine Hayes, «Virtual Bodies and Flickering Signifiers», available from <http://www.english.ucla.edu/faculty/hayles/Flick.html> (accessed 5 May 2015). — 89 — Author's translation.

Still from the film  
*Godzilla, King of the Monsters*,  
1956





ranging from corporeal, cognitive, and affective, to material, geopolitical and economic. They are felt as financial crashes, computer crashes, and viruses, as well as loneliness, cognitive fatigue, attention disorders, and carpal tunnel syndrome.<sup>90</sup> As the circulation and collection of data becomes normalized and pervasive, our paranoia and melancholy increases. The intensive daily production of image and text produces a kind of 'archival anxiety',<sup>91</sup> while the isolation of cyber bullying leads to depression and suicide. Money dissipates into the cloud, as credit; *All that is solid melts into air*.<sup>92</sup>

The cloud covers us in its sensorial haze—its sights, sounds, and patterns. Data structures and algorithms, for example, have introduced novel orders of knowledge. The epistemological model of the cloud was presciently announced by Gmail's original tagline in 2004: *Search, don't sort*.<sup>93</sup> A seemingly innocuous phrase, it in fact implies a significant cultural transformation, in the introduction of new epistemic patterns constructed by algorithms.<sup>94</sup> *Sorting* was a principle means, and methodology, for the production of knowledge for centuries, in the form of taxonomies, sciences, classifications, libraries, museums, archives, and encyclopaedias—in short, the labour on which the project of Western knowledge largely rested.<sup>95</sup> *Search* implies a new epistemological shift, as much as an ontological one—what art historian David Joselit calls 'the epistemology of search'<sup>96</sup>—a world in which everything can exist, side by side, and all at once, in a flattened ontology of both access and simultaneity. Search enacts an epistemic violence through the creation of patterns of contiguity and alogical forms of the organization of discourse, both liberative yet increasingly controlled by corporations and abstractions. The cloud, as the immense storehouse for organizing and producing knowledge, both fulfills the dream of the French Encyclopaedists—as a chimeric electronic archive—while unsettling the very methodological and epistemic foundations of such knowledge production. The algorithm literally re-configures the order of things.

The resulting 'after effects' of living under the cloud have taken the form of new relations between information and knowledge; bits and atoms; screens, images, and things; increasing 'datafication'; surveillance, and data mining; and

— 90 — See Franco Bifo Berardi, *The Soul at Work: From Alienation to Autonomy*, Los Angeles: Semiotext(e), 2009. — 91 — Mark Fisher, 'Is it Still Possible to Forget?', *Spike Art Quarterly* (Vienna), issue 42, p. 38. — 92 — Marshall Berman, *All that is Solid Melts into Air*, New York: Penguin, 1988. — 93 — Mario Carpo, 'Self-organization, Indeterminacy, and the Crisis of Modern Authorship in Contemporary Digital Design Theory', lecture at the MIT Department of Architecture, 22 February 2013, from author's notes. — 94 — Ibid and Mercedes Bunz, 'Safety in Numbers', in *Frieze* (London), no. 161, March 2014, p. 103. — 95 — Carpo. — 96 — See David Joselit, *After Art*, Princeton: Princeton University Press, 2013. — 97 — Steven Shavro, 'Accelerationist Aesthetics: Necessary Inefficiency in Times of Real Subsumption', 2013, available from <http://www.e-flux.com/journal/accelerationist-aesthetics-necessary-inefficiency-in-times-of-real-subsumption/> (accessed 5 May 2015). — 98 — Ngai, p. 238. Ngai makes the case that rather than the beautiful or the sublime, it is the 'zany, the interesting, and the cut', that are the three aesthetic categories that 'are best suited for grasping how aesthetic experience has been transformed by the hypercommodified, information-saturated, performance-driven conditions of late capitalism', asserting that these categories 'index the system's most socially binding processes', of production, circulation, and consumption.

the changing nature of sex and work. Under the cloud's process of 'real subsumption', for example, affect and emotion, as well as 'expressions of desire' all become 'sources of surplus value', through liquid forms of digital capital. 'Data are extracted from everything we feel, think, and do', and then, 'appropriated and consolidated, and packaged, and sold back to us', as philosopher Steven Shavero explains.<sup>97</sup> Subjectivity and sociality, as well as affect and performativity, become part of the skill-set of increasingly precarious forms of work. The effect is the subsumption of 'basic human competences', including 'communication' and 'intimacy', into the spaces of the cloud. This constitutes a new set of relations of sensorial and cognitive experience, within the pattern of frictionless and abstracted economic flows.<sup>98</sup>

The smartphone, for example, extends the space of the work such that, 'emails can be answered at breakfast, specs reviewed on the train home, and the next day's meetings verified before lights out'.<sup>99</sup> The working day has been longer, rather than shorter, by digital technology in the last two decades.<sup>100</sup> The digital is 'essentially beyond exhaustion... with no limit to quantity, duration, multiplication', as architect Rem Koolhaas claims.<sup>101</sup> As server space expands exponentially, so does labour time, collapsing the border between work and non-work, labour and leisure.<sup>102</sup> Yet *cybertime*, unlike *cyberspace* 'cannot go faster than what is allowed by the physical material from which our brain is made, or [t]he need for caresses and affection'; it is limited, at least for now, by the body and the brain, as theorist Franco 'Bifo' Berardi argues.<sup>103</sup> Hence the variety of technologies used to enhance or ameliorate the effects of the cloud: caffeine, power drinks, ADHD medication, anti-depressants, increasingly part of the normalized ritual of everyday life.<sup>104</sup> These effects include, as well, the cost to the bodies that produce the interfaces through which we access the sublime itself. The N-Hexane that is used in the manufacturing of a touchscreen, for example, is a toxic chemical widely reported to cause nerve damage to the arms and hands of the workers who produce them.<sup>105</sup>

Not only hands, but also heads: the sublime image of contemporary terror is the decapitated, headless body.<sup>106</sup> 'To scare people and win adherents', writes one journalist, 'the

— 99 — Nicole Aschoff, 'The Smartphone Society', in *Jacobin*, issue 17, available from <https://www.jacobinmag.com/2015/03/smartphone-usage-technology-aschoff/> (accessed 5 May 2015). — 100 — See Berardi, p. 78. — 101 — Rem Koolhaas, 'The Smart Landscape: Intelligent Architecture', in *Artforum* (New York), April 2015, available from <https://artforum.com/inprint/issue=201504&id=50735> (accessed 5 May 2015). — 102 — Franco 'Bifo' Berardi, *Precarious Rhapsody: Semiocapitalism and the Pathologies of the Post-Alpha Generation*, London: Minor Compositions, 2009, p. 41, available from [www.16beavergroup.org/bifo/precariusrhapsodyweb.pdf](http://www.16beavergroup.org/bifo/precariusrhapsodyweb.pdf) (accessed 5 May 2015). As Bifo writes, '[t]oday, what does it mean to work? As a general tendency, work is performed according to the same physical patterns: we all sit in front of a screen and move our fingers across a keyboard. We type.' — 103 — Ibid. — 104 — As Bifo writes, 'If you want to survive you have to be competitive and if you want to be competitive, you must be connected, receive and process continuously an immense and growing mass of data'. Ibid. — 105 — Harry Sanderson, 'Human Resolution', in *Mute* (Berlin), 4 April, 2013, available from <http://www.metamute.org/editorial/articles/human-resolution> (accessed 5 May 2015). I am indebted to Michael Connor for bringing Sanderson's essay to my attention. — 106 — Scott Atran has recently made a similar point in *The Guardian* writing of the terrorist's 'delightful terror'. See *Jihad's fatal attraction*, *The Guardian* (London), Thursday, 4 September 2014, available from <http://www.theguardian.com/commentisfree/2014/sep/04/jihad-fatal-attraction-challenge-democracies-isis-barbarism> (accessed 5 May 2015).

we access the sublime through the same well-worn if hyper-productive



modern terrorist films his own murders to put them online), and «the content that works best on primetime news is beheadings of white people». As Burke proposed, the sublime is itself whatever is «conversant about terrible objects», suggesting executions and beheadings as precisely such an example.<sup>107</sup> Terror is a familiar enough, nearly pathological, contemporary emotion—it is the normalized state of alert of the contemporary political subject.<sup>108</sup> The headless body, its decapitation performed by a faceless Other, acts as the image of sublime terror. It is experienced precisely through the mediated *distance* of the image, or the uploaded video. Social media becomes part of the technologies of biopower, the electronic networks of daily life used as the vehicle for terror.<sup>109</sup> These set the headless corpse into the surface of an interface, a handheld device, proving the necessary distance for the sublime to function, to (re)present terror *without* fear. Mediated by images on a screen, the real seems «added to the image like a bonus of terror».<sup>110</sup>

Where did do all heads go? The sublime of the cloud links the Facebook tag with terrorist decapitation, in the form of biometrics. These technologies, including facial recognition, are «a pattern recognition system that operates by acquiring biometric data from an individual, and extracts a feature set from the acquired data for comparison purposes».<sup>111</sup> These can identify someone automatically from a digital image.<sup>112</sup> The applications range from identifying friends on Facebook, to retailers wanting to collect data, or the tracking of specific individuals in public spaces.<sup>113</sup> The decapitated body has its digital equivalent in the phenomenon of the «headless fat person», identified by activist Charlotte Cooper.<sup>114</sup> These are images of «dehumanised bodies» that are photographed, without consent, in public places, and reproduced alongside online text about obesity

— 107 — See Vanessa L. Ryan, 276. «Choose a day on which to represent the most sublime and affecting tragedy we have; appoint the most favourite actors; spare no cost upon the scenes and decorations, unite the greatest efforts of poetry, painting, and music; and when you have collected your audience, just at the moment when their minds are erect with expectation, let it be reported that a state criminal of high rank is on the point of being executed in the adjoining square; in a moment the emptiness of the theatre would demonstrate the comparative weakness of the imitative arts...» Burke, «Of the Effects of Tragedy», in *On the Sublime and Beautiful*, The Harvard Classics, 1909–14, available from <http://www.bartleby.com/24/2/115.html> (accessed 5 May 2015). — 108 — See Matthew Gumpert, *The Accident Waiting to Happen*, Sharjah: Sharjah Art Foundation, 2015. — 109 — Jonathan D. Moreno, «The Biopolitics of Beheading», in *Huffington Post*, 19 September 2014, available from [http://www.huffingtonpost.com/jonathan-d-moreno/the-biopolitics-of-behead\\_b\\_5849036.html](http://www.huffingtonpost.com/jonathan-d-moreno/the-biopolitics-of-behead_b_5849036.html) (accessed 5 May 2015). — 110 — Gumpert, p. 76. When reality itself is at any one point «processed in the form of digital code, we cannot meaningfully distinguish between «reality» and its multiple simulations; they are all woven together in one and the same fabric», as Shapiro explains. See Steven Shaviro, *Post Cinematic Affect*, Winchester: Zero Books, 2010. — 111 — Robert E. Vanaman, «Biometric Facial Recognition Database Systems», available from <http://eforensicsmag.com/biometric-facial-recognition-database-systems/> (accessed 5 May 2015). — 112 — See <http://www.eurotech.com/en/products/devices/face+>

Headless fatty,  
image available from <http://charlottecooper.net/publishing/digitalheadless-fatties/> (1-17)





or eating habits.<sup>115</sup> Both the headless stock photo and the headless corpse circulate in the cloud, propelled along by both allure and repulsion. In their endless, floating circulation rest ethical and ontological questions: where is the line between the self and its data shadow? Do we own *our* image? And as importantly, where should we *stand* in relation to the mediated distance of our sublime?

Ki-Suck Han, a 58-year old man, was pushed onto subway tracks and killed in 2012.<sup>116</sup> A photographer on the train platform took several pictures moments before Han was struck.<sup>117</sup> The photographer later claimed he had been trying to alert the conductor to stop by using his flash; the newspaper that published the image explained the photographer would have not been able to save him.<sup>118</sup> Do images like this exist as a *representation* of an event, or are they somehow *implicated* in the event itself? In recent years, a variety of crimes involving a bystander or an attacker who steps back to record a video or take a still image using a mobile phone have increased.<sup>119</sup> Do we need to develop ethically informed rather than legally compelled ways to deal with such images in our digital condition? Along with talking about copyrights and open source, should we talk about ethical rights in relation to images, such as the right to be offended; the dignity of the shareable; the criteria of the circulated or shared?; the right to forget or the dignity of the memorable? Are such images the effect of the mediated distance of our sublime, where we now stand back from terror and violence?

Mediated violence is enacted not just on subjects, but upon images themselves, through contemporary forms of iconoclasm and iconophilia. There is no better evidence of the value of images today than the violence inflicted on them, the hatred and violence they instill. Iconoclasm, for Kant, relates to what he calls «...the most sublime passage in the Jewish Law... the commandment [Exodus 20:4]: Thou shalt not make unto thee any graven image or any likeness of anything that is in heaven or on earth, or under the earth.»<sup>120</sup> Like the epistemic violence of «search», we enact an iconoclastic violence—in keeping with this sublime law—on the image. If the iconoclastic mobs in the sixteenth century *Bildersturm* rushed into churches to shatter or deface artworks, we are surrounded by the fragments of our

recognition+systems (accessed 5 May 2015).  
 — 113 — Ibid. — 114 — Charlotte Cooper, *Headless Fatties*, 1 July, available from <http://charlottecooper.net/publishing/digital/headless-fatties-01-07/> (accessed 5 May 2015). — 115 — Ibid. «You could be anywhere», Cooper writes, «[and] an image of your disgustingness could be produced and reproduced outside of your control». — 116 — Jason M. Vaughn, «Photo Captures Man's Final Moments Before Getting Hit by Subway Train», Fox News, 4 December 2012, available from <http://fox4kc.com/2012/12/04/photo-captures-mans-final-moments-before-getting-hit-by-subway-train/> (accessed 5 May 2015). — 117 — Ibid. — 118 — Ibid. — 119 — Laurie Penny, «Steubenville: this is rape culture's Abu Ghraib moment», in *New Statesman*, 19 March 2013, available from <http://www.newstatesman.com/laurie-penny/2013/03/steubenville-rape-cultures-abu-ghraib-moment> (accessed 5 May 2015). — 120 — Kant quoted in Gur Hirshberg, *Burke, Kant and the Sublime*, available from [https://philosophynow.org/issues/11/Burke\\_Kant\\_and\\_the\\_Sublime](https://philosophynow.org/issues/11/Burke_Kant_and_the_Sublime) (accessed 5 May 2015).

→ SONTAG → MURDOCK





iconoclasm: images compressed as jpegs, or shattered into parts on YouTube, or what artist Hito Steyerl calls 'poor images', copies 'in motion' that are 'compressed reproduced, ripped, remixed, as well as copy and pasted'.<sup>121</sup> Our iconoclasm is engendered by both the hypercirculation imperative of digital capital, as the generosity of the shareable. In the cloud, we are all iconoclasts.

We no longer even merely look at images; we now pinch, drag, scroll, swipe and flick them. We fondle and caress them, brush them aside, manipulate them with the ease of a moving finger. What does it mean to touch an image, rather than to just look at it? Does it imply a kind of care or responsibility toward or for images? Caravaggio's *Portrait of a Young Woman*, for example, was destroyed in a fire during World War II. It remains an image that now only exists as *another* image, as the original has been lost or destroyed. As our archive in the clouds expands exponentially, data begets more data, and every image becomes the source for the production of *ever more* images. How are we to care for these images that remain, or for what remains *as* images? Isn't this the iconoclastic act in its purest form, an act of violence toward images that produces *other* images?<sup>122</sup>

One of the main forms of image compression/iconoclasm, the JPEG, has come to play a mediating role in our experience of contemporary history. We experience and comprehend the historicity of the present through such formats.<sup>123</sup> Introduced in 1992, the JPEG is named after the 'Joint Photographic Experts Group', the committee that created the still image coding format.<sup>124</sup> Developed in response to the need for a technology to copy and circulate electronic images, it is now the format most commonly used in smartphones and digital cameras, 'used more than one billion times each day on social networks alone'.<sup>125</sup> 'When an image is compressed in JPEG', as Professor Touradj Ebrahimi, the president of the group explains, 'a portion of its contents is destroyed, but practically without being noticeable to the human eye...'<sup>126</sup> In fact, one technological artefact of this compression is in fact visible: the pixel, created by technological reproduction, its artefactuality enhanced by circulation. As such, pixelization functions as a double iconoclastic object: it is both an aesthetic product of digitization, and also mobilized for yet another icono-

— 121 — Hito Steyerl, 'The Cinema Rolls on: Filmmakers Under the Influence', *Things that Quicken the Heart*, Chris Marker: A Symposium, 16 March 2013, Slought Foundation, Philadelphia, PA. This image was suggested by Steyerl in discussing Chris Marker's and Alain Resnais' film *Les Statues meurent aussi* [Statues Also Die] (1953) which I am here applying to the notion of iconoclasm overall. — 122 — Sven Lütticken, 'The Art of Iconoclasm', available from <http://www.gertjankocken.nl/?ess=9> (accessed 5 May 2015). — 123 — As Walter Benjamin wrote when 'photographs became standard evidence for historical occurrences', they 'acquire a hidden political significance'. Benjamin quoted in Ariella Azoulay, 'The Family of Man: A Visual Universal Declaration of Human Rights' in Thomas Keenan, Tirdad Zolghadr (eds), *The Human Snapshot*, Berlin: Sternberg Press, 2013, p. 47. — 124 — See <http://www.jpeg.org/about.html> (accessed 5 May 2015). — 125 — Touradj Ebrahimi, 'JPEG Changed Our World', available from <http://actu.epfl.ch/news/jpeg-changed-our-world/> (accessed 5 May 2015). — 126 — Ibid.

elastic function, to censor or obscure other images, reproducing the violence. As an artefact of digitation, it also mimetic collapses various visual orders: it presents to us the world as if seen through the compound eyes of a bee, while also hinting how the cloud might see *us*. In our contemporary sublime, images are now witnesses, agents, and actors, looking ever more at us than we even at them.

Alongside producing its distinct iconography—as in the pixel, the jpeg, the selfie—the ‘cloud’ has begun to demonstrate its own forms of ‘seeing,’ outside of visuality or the parameters of the human sensorial apparatus. The automation of surveillance and production, for example, have made them less dependent on direct human intervention. The result is what artist and filmmaker Harun Farocki calls ‘operational images’ meant for a particular technical operation rather than to be viewed by any human being.<sup>127</sup> Such ‘machines-seeing-for-machines’ include facial recognition software, surveillance cameras, and drones.<sup>128</sup> How do *we* look in the all-seeing, floating distant drone, flying in the clouds? Like a green bug, to be squashed by smart weapons.<sup>129</sup>

The compression of digital images has the function of reducing their size, making them easier to store, copy or exchange.<sup>130</sup> ‘To have value and meaning, an image must be shared and copied’, as Ebrahimi claims.<sup>131</sup> In the contemporary sublime, an image is no longer merely worth a thousand words—as the old cliché would have it—but a 1000 likes, 1000 followers, a 1000 *shares*. Circulation and exchange constitute value in the cloud; its economic units are energy and credit.<sup>132</sup> Data must be kept moving, avoiding damaged nodes to route itself through the network. As Joseph Vogl writes in *The Specter of Capital*, ‘capitalism is now following a “digital imperative”, marked by “an exponential growth in the mobility of capital transactions.”’<sup>133</sup> In the Post-Bretton Woods financial system of the second half of the twentieth century, unbacked fiat money system was no longer ‘anchored in real fixed assets’, but functioned as ‘a fictions play of signs [d]etached from the real economy.’<sup>134</sup> Financial instruments governed by algorithms operate in a system in which ‘information generates prices, prices generate buying decisions, and these in turn generate more information’, determining a large part of the global social

— 127 — Martin Blumenthal-Barby, ‘Counter-Music: Harun Farocki’s Theory of a New Image Type’, in *October* (Cambridge, MA), no. 151, pp. 136–7. As Harun Farocki writes, ‘Made neither to entertain nor to inform’, such operational images that are part of an operation. — 128 — Trevor Paglen, ‘Safety in Numbers’, *Frieze* (London), no. 161, March 2014, p. 100. — 129 — Glenn Greenwald, ‘Bravery and Drone Pilots’, in *Salon*, 10 July 2012, available from [http://www.salon.com/2012/07/10/bravery\\_and\\_drone\\_/](http://www.salon.com/2012/07/10/bravery_and_drone_/) (accessed 5 May 2015). — 130 — Ebrahimi. — 131 — Ibid. — 132 — Orit Halpern, *Beautiful Data: A History of Vision and Reason since 1945*, Durham: Duke University Press, 2014, p. 4. — 133 — Joseph Vogl, *The Specter of Capital*, Stanford: Stanford University Press, 2015, p. 5. — 134 — Joseph Vogl, ‘The Black Swan’, available from [http://www.ny-magazine.org/PDF/1.5.The%20Black%20Swan\\_%20by%20Joseph%20Vogl\\_042711.pdf](http://www.ny-magazine.org/PDF/1.5.The%20Black%20Swan_%20by%20Joseph%20Vogl_042711.pdf) (accessed 5 May 2015).



welfare.<sup>135</sup> Credit serves not just as type of monetary transaction, but as the 'insubstantial essence' of all transactions.<sup>136</sup> Data too functions in perpetual, frictionless circulation, in a sublime chasm without referent or bottom, apparent fixed point or form.<sup>137</sup>

As a node in this frictionless life, it is we who set data into perpetual movement. Perhaps we are merely its parasitic host as it replicates through us, as mere representations, like a replicating virus that makes us click our mouses, or flick our screens by eliciting affects, instilling in us a need to like, share, or store? What *affects* impel or entice us to do so, in an economy where 'our attention is bought and sold'<sup>138</sup> and where the digital self has become a commodity, a core part of aestheticized forms of capital?<sup>139</sup> In the infinite recursion of desire and violence that contemporary images elicit—violence inflicted on them, and the desire that they, in turn, solicit to circulating—their phantasmic power crystallizes the forces and vectors of our sublime. The hyper-circulation and storage of data—constitutive of their value—compels us to attend to the demands it makes. Moving beyond evaluative terms and normative claims, or the perlocutionary utterances of criticizing or praising<sup>140</sup>, we should instead follow data into the liminal spaces from which it calls out to us: between 2D and 3D, virus and host, circulation and decay, screen and thing. The broken fragments of our iconoclasm and iconophilia are in fact being recomposed, reconstituted, and rendered in new kinds of spaces, blurring the line between image and object, data and material.<sup>141</sup> Matter becomes an image, when 'informationally enriched by the ability of contemporary science to recode the processes it has undergone and the contacts imprinted on it', as Eyal Weizman states.<sup>142</sup> 'While chemical treatment in a darkroom was the process by which the photographic image first became visible across a surface of silver salts, today forensic operation allow us to make visible—and thus contestable—material surfaces imprinted by an ever-shifting, entangled human/natural process.'<sup>143</sup>

New advances in digital forensics have allowed for the creation of computer-generated images from DNA samples in crime scenes, for example.<sup>144</sup> Known as DNA phenotyping, the techniques uses genetic variations to determine physical characteristics, such as eye, skin and hair colour.<sup>145</sup> In the cloud, physical matter—a bone in a mass grave or a

— 135 — Vogl, *The Specter of Capital*, pp. 44, 15, 70, 75. — 136 — Ibid., pp. 57, 63. — 137 — Ibid. — 138 — Katya Sander in Keenan, Zolghadr (eds), p. 152. — 139 — See Gilles Lipovetsky, Jean Serroy, *O Capitalismo Estético na Era da Globalização*, Lisbon: Edições 70. — 140 — Ngai, p. 38. — 141 — Hito Steyerl and Jalal Toufic, p. 24. — 142 — Eyal Weizman, 'The Image is the Bone!', in Keenan, Zolghadr (eds), p. 195. — 143 — Ibid. — 144 — Clive Cookson, 'DNA: the next frontier in forensics', available from — FT.com <http://www.ft.com/cms/s/2/012b2b9c-a742-11e4-8a71-00144feab7de.html> (accessed 5 May 2015). — 145 — Ibid.

single strand of hair<sup>146</sup>—is potentially like the photographs in Michelangelo Antonioni's *Blow Up*: an image that functions as evidence of a crime.

The «data-ization» of physical matter as well as biological material—all producing a steady stream of data<sup>147</sup>—is set to expand with the evolving «Internet of Things», including human DNA. Defined as the expansion of «the use of sensors, actuators, and data communications technology built into physical objects—from cars to toasters. As social theorist Jeremy Rifkin explains, «virtually every [a]spect of economic and social life will be linked via sensors and software [c]ontinually feeding Big Data to every node—businesses, homes, vehicles—moment to moment, in real time».<sup>148</sup> Such interconnectivity, in which the refrigerator and the toothbrush are linked together<sup>149</sup>, makes surveillance, advertising, healthcare, and consumption, indistinguishable.<sup>150</sup> It also collapses the division between matter and metabolism, data and biology.

Recently, researchers at the European Bioinformatics Institute have developed a «practical, high-capacity, low-maintenance information storage» method using synthesized DNA.<sup>151</sup> As a means to store vast amounts of data for thousands of years, this would make it possible for 100 million hours of high-definition video to be stored in a small amount of human genetic material.<sup>152</sup> Human DNA could easily carry the entire works of Shakespeare, or all the seasons of a TV series. In effect, the storage density of DNA—1000 times the capacity of today's media—could soon unite the very memory of the human species in the genome, with the vast external extension of human life we now live in the cloud.<sup>153</sup>

— 146 — See Weizman and Steyerl.

— 147 — Sue Halpern, «The Creepy New Wave of the Internet», *The New York Review of Books*, 20 November 2014, available from <http://www.nybooks.com/articles/archives/2014/nov/20/creepy-new-wave-internet/?insrc=whc> (accessed 5 May 2015). — 148 —

Rifkin quoted in Halpern <http://www.nybooks.com/articles/archives/2014/nov/20/creepy-new-wave-internet/?insrc=whc> (accessed 5 May 2015). — 149 — Halpern. — 150

— «Your house may soon insist on an early bedtime to stop irresponsible consumption of energy», proposes Rem Koolhaas, available from <https://artforum.com/inprint/id=50735> (accessed 5 May 2015). — 151 — Nick Goldman, Paul Bertone, Siyuan Chen, Christophe Dessimoz, Emily M. LeProust, Botond Sipos & Ewan Birney, «Towards practical, high-capacity, low-maintenance information storage in synthesized DNA», in *Nature*, 23 January 2013, available from <http://www.nature.com/nature/journal/v494/n7435/full/nature11875.html> (accessed 5 May 2015).

— 152 — See «EMBL-EBI researchers make DNA storage a reality», 23 January 2013 available from [http://www.embl.de/aboutus/communication\\_outreach/media\\_relations/2013/130123\\_Hinxton](http://www.embl.de/aboutus/communication_outreach/media_relations/2013/130123_Hinxton) (accessed 5 May 2015).

— 153 — Ibid; Katherine Bourzac, «Why DNA Will Someday Replace the Hard Drive», *MIT Technology Review*, 23 January 2013 available from <http://www.technologyreview.com/news/510246/why-dna-will-someday-replace-the-hard-drive/> (accessed 5 May 2015); and Bernard Stiegler, «Anamnesis and Hypomnesis», available from [http://arsindustrialis.org/anamnesis-and-hypomnesis#\\_ftn4](http://arsindustrialis.org/anamnesis-and-hypomnesis#_ftn4) (accessed 5 May 2015).



# Captives of the Cloud: Part I

## Metahaven

We are the voluntary prisoners  
of the cloud; we are being  
watched over by governments  
we did not elect.

Wael Ghonim, Google's Egyptian executive, said: 'If you want to liberate a society just give them the internet.'<sup>1</sup> But how does one liberate a society that already has the internet? In a society permanently connected through pervasive broadband networks, the shared internet is, bit by bit and piece by piece, overshadowed by the 'cloud'.

### The Coming of the Cloud

The cloud, as a planetary-scale infrastructure, was first made possible by an incremental rise in computing power, server space, and trans-continental fiber-optic connectivity. It is a by-product and parallel iteration of the global (information) economy, enabling a digital (social) marketplace on a world-wide scale. Many of the cloud's most powerful companies no longer use the shared internet, but build their own dark fiber highways for convenience, resilience, and speed.<sup>2</sup> In the cloud's architecture of power, the early internet is eclipsed.

A nondescript diagram in a 1996 MIT research paper titled 'The Self-governing Internet: Coordination by Design', showed a 'cloud' of networks situated between routers linked up by Internet Protocol (IP).<sup>3</sup> This was the first reported usage of the term 'cloud' in relation to the internet. The paper talked about a 'confederation' of networks governed by common protocol. A 2001 *New York Times* article reported that Microsoft's .NET software programs did not reside on any one computer, 'but instead exist in the "cloud" of computers that make up the internet.'<sup>4</sup> But it wasn't until 2004 that the notion of 'cloud computing' was defined by Google CEO Eric Schmidt:

I don't think people have really understood how big this opportunity really is. It starts with the premise that the data services and architecture should be on servers. We call it cloud computing—they should be in a 'cloud' somewhere. And that if you have the right kind of browser or the right kind of access, it doesn't matter whether you have a PC or a Mac or a mobile phone or a BlackBerry or what have you—or new devices still to be developed—you can get access to the cloud. There are a number of companies that have benefited from that. Obviously, Google, Yahoo!, eBay, Amazon come to mind. The computation and the data and so forth are in the servers.<sup>5</sup>

The internet can be compared to a patchwork of city-states, or an archipelago of islands. User data and content materials are dispersed over different servers, domains, and jurisdictions (i.e., different sovereign countries). The cloud is more like Bismarck's unification of Germany, sweeping up formerly distinct elements, bringing them under a central government. As with most technology, there is a sense of abstraction from prior experiences; in the cloud the user no longer needs to

— 1 — Wael Ghonim, cited in Rebecca MacKinnon, *Consent of the Networked: The Worldwide Struggle for Internet Freedom*, New York: Basic Books, 2012. — 2 — Brandon Teddlar, 'To The Cloud!', *Ezine Mark*, 20 February 2012, available from <http://ezinemark.com/a/to-the-cloud/> (accessed 28 April 2015). — 3 — Sharon Gillett and Mitchell Kapor, 'The Self-governing Internet: Coordination by Design', presented at Coordination and Administration of the Internet Workshop at Kennedy School of Government, Harvard University, Boston, MA, 8–10 September 1996, available from <http://ccs.mit.edu/papers/CCSWP197/ccswp197.html> (accessed 28 April 2015). — 4 — John Markoff, 'An Internet Critic Who Is Not Shy about Ruffling the Big Names in High', *New York Times*, 9 April, 2001, available from <http://www.nytimes.com/2001/04/09/technology/09HAIL.html?ex=1230872400&en=5d156fc75d409335&ei=5070> (accessed 28 April 2015). — 5 — Eric Schmidt, 'Conversation with Eric Schmidt Hosted by Danny Sullivan', Search Engine Strategies Conference, 9 August 2006, available from <http://www.google.com/press/podium/ses2006.html> (accessed 28 April 2015). — 6 — 'Amazon: The Walmart of the Web', *The Economist*, 1 October 2011, available from <http://www.economist.com/node/21530980> (accessed 28 April 2015). — 7 — Nathan Eddy, 'Cloud Computing to Drive Storage Growth: IDC Report', *eWeek*, 21 October 2011, available from <http://www.eweek.com/c/a/Cloud-Computing/Cloud-Computing-to-Drive-Storage-Growth-IDC-Report-193712> (accessed 28 April 2015). — 8 — Nick Bilton, 'Data storage server, and founder, move quickly', in *International Herald Tribune*, 28 August 2012. — 9 — Barb Darrow, 'Amazon Is No. 1. Who's Next in Cloud Computing?', *GigaOM*, 14 March 2012, available from <https://gigaom.com/2012/03/14/amazon-is-no-1-whos-next->

understand how a software program works or where his or her data really is. The important thing is that it works.

In the early 1990s, a user would operate a 'personal home page', hosted by an internet Service Provider (ISP), usually located in the country where that user lived. In the early 2000s, free online services like Blogspot and video sites like YouTube came to equal and surpass the services of local providers. Instead of using a paid-for local e-mail account, users would switch to a service like Gmail. In the late 2000s and the early 2010s this was complemented, if not replaced, by Facebook and other social media, which integrate e-mail, instant messaging, FTP (File Transfer Protocol), financial services, and other social interaction software within their clouds. Cloud-based book sales, shopping, and e-reading have brought about the global dominance of Amazon, the world's biggest cloud storage provider and the 'Walmart of the Web'.<sup>6</sup> By 2015, combined spending for public and private cloud storage will be \$22.6 billion worldwide.<sup>7</sup> Given this transition, it is no exaggeration to proclaim an exodus from the internet to the cloud. The internet's dispersed architecture gives way to the cloud's central model of data storage and management, handled and owned by a handful of corporations.

The coming of the cloud is spelled out by Aaron Levie, founder and CEO of Box, one of Silicon Valley's fastest growing cloud storage providers. As Levie states, the biggest driver of the cloud is the ever-expanding spectrum of mobile devices—iPhones, iPads, Androids, and such—from which users tap into the cloud and flock around its server spine:

If you think about the market that we're in, and more broadly just the enterprise software market, the kind of transition that's happening now from legacy systems to the cloud is literally, by definition, a once-in-a-lifetime opportunity. This is probably going to happen at a larger scale than any other technology transition we've seen in the enterprise. Larger than client servers. Larger than mainframes.<sup>8</sup>

Google, one of the world's seven largest cloud companies, has recently compared itself to a bank.<sup>9</sup> That comparison is apt. If data in the cloud is like money in the bank, what happens to it while it resides «conveniently» in the cloud?

### The US Cloud and the Patriot Act

Where and by whom sites are registered and data is hosted matters a great deal in determining who gains access to and control over the data. For example, all data stored by US companies (or their subsidiaries) in non-US data centers falls under the jurisdiction of the USA Patriot Act, an anti-terrorism law introduced in 2001.<sup>10</sup> This emphatically includes the entire US cloud—Facebook, Apple, Twitter, Dropbox,



in-cloud-computing/ (accessed 28 April 2015).  
 Cade Metz, 'Google: "We're Like a Bank for Your Data"', *Wired* (Berlin), 29 May 2012, available from <http://www.wired.com/category/enterprise?p=20996> (accessed 28 April 2015).  
 — 10 — Zack Whittaker, 'Summary: ZDNet's USA PATRIOT Act Series', *ZDNet*, 27 April 2011, available from <http://www.zdnet.com/article/summary-zdnet-usa-patriot-act-series/> (accessed 28 April 2015).  
 — 11 — Jeffrey Rosen, 'Too Much Power', in *New York Times* (New York), 8 September 2011, available from <http://www.nytimes.com/roomfordebate/2011/09/07/do-we-still-need-the-patriot-act/the-patriot-act-gives-too-much-power-to-law-enforcement> (accessed 28 April 2015).  
 — 12 — Matthew C. Waxman, 'Extending Patriot Act Powers', interview by Jonathan Masters, in *cfr.org*, 22 February 2012, available from <http://www.cfr.org/courterterrorism/extending-patriot-act-powers/p24174> (accessed 28 April 2015).  
 — 13 — Saskia Sassen, *Territory, Authority, Rights. From Medieval to Global Assemblages*, Princeton and Oxford: Princeton University Press, 2006 (2008), p. 130.  
 — 14 — Paul Taylor, 'Privacy Concerns: Slow Cloud Adoption', in *Financial Times*, 2 August 2011, available from <http://www.ft.com/cms/2011/08/02/softpedia.com/news/Google-Admits-Handing-over-European-User-Data-to-US-Intelligence-Agencies-215740.shtml> (accessed 28 April 2015).  
 — 15 — Lucian Constantin, 'Google Admits Handing over European User Data to US Intelligence Agencies', in *Softpedia*, 8 August 2011, available from [http://www.hldata.protection.com/uploads/file/Hogan%20Lovells%20White%20Paper%20Government%20Access%20to%20Cloud%20Data%20Paper%20\(1\).pdf](http://www.hldata.protection.com/uploads/file/Hogan%20Lovells%20White%20Paper%20Government%20Access%20to%20Cloud%20Data%20Paper%20(1).pdf) (accessed 28 April 2015).  
 — 16 — Winston Maxwell, and Christopher Wolf, 'A Global Reality: Governmental Access to Data in the Cloud', in *A Hogan Lovells White Paper*, 23 May 2012,

Google, Amazon, Rackspace, Box, Microsoft, and many others. Jeffrey Rosen, a law professor at George Washington University, has established that the Patriot Act, rather than investigating potential terrorists, is mostly used to spy on innocent Americans.<sup>11</sup> But the people being watched need not even be Americans. Via the cloud, citizens across the world are subject to the same Patriot Act powers—which easily lend themselves to misuse by authorities. Matthew Waxman of the Council on Foreign Relations outlines the situation:

These kinds of surveillance powers have historically been prone to abuse. Some of the legal restrictions on surveillance that the Patriot Act was designed to roll back were actually the direct product of abuses by the FBI, the CIA, and other government agencies. During the 1960s and 70s, national security intelligence powers were used by government agents to spy on political opposition [and] cast abusively wide nets. That legacy of abuse has raised a lot of concerns about whether there is adequate oversight with respect to these new surveillance powers.<sup>12</sup>

The sociologist Saskia Sassen adds to this perspective:

Through the Patriot Act [...] the government has authorized official monitoring of attorney-client conversations, wide-ranging secret searches and wiretaps, the collection of Internet and e-mail addressing data [...] All of this can be done without probable cause about the guilt of the people searched—that is to say, the usual threshold that must be passed before the government may invade privacy has been neutralized. This is an enormous accrual of powers in the administration, which has found itself in the position of having to reassure the public that it can be 'trusted' not to abuse these powers. But there have been abuses.<sup>13</sup>

Microsoft was the first cloud company to publicly confirm Patriot Act access to its data stored outside the US.<sup>14</sup> In August 2011, Google also confirmed that its data stored overseas is subject to 'lawful access' by the US government.<sup>15</sup> A 2012 white paper by the law and privacy firm Hogan Lovells examined these findings, concluding that while the Patriot Act does give the US government access to the cloud, many other governments enjoy similar forms of access under their own laws—and further, that using the 'location' of a cloud server to determine legal protection was a mistaken idea altogether.<sup>16</sup> The paper noted the widespread use of so-called Mutual Legal Assistance Treaties (MLATs), which streamline the exchange between countries of data needed for investigative purposes. Apart from treaty-backed requests, 'informal relationships between law enforcement agencies [...] allow for governmental access to data in the 'possession, custody, or control' of

available from <http://www.hldataprotection.com/uploads/file/Hogan%20Lovells%20White%20Paper%20Government%20Access%20to%20Cloud%20Data%20Paper%2011.pdf> (accessed 28 April 2015). — 17 — Mike Masnick, 'Senators Reveal That Feds Have Secretly Reinterpreted The PATRIOT Act', *Techdirt*, 26 May 2011, available from <http://www.techdirt.com/articles/20110525/15411414434/senators-reveal-that-feds-have-secretly-reinterpreted-patriot-act.shtml> (accessed 28 April 2015). — 18 — Kim Zetter, 'Unknown Tech Company Defies FBI In Mystery Surveillance Case', in *Wired* (Berlin), 14 March 2012, available from <http://www.wired.com/threatlevel/2012/03/mystery-nsll/> (accessed 28 April 2015). — 19 — Ryan Singel, 'Egypt Shut Down Its Net With a Series of Phone Calls', in *Wired* (Berlin), 28 January 2011, available from <http://www.wired.com/threatlevel/2011/01/egypt-isp-shutdown/> (accessed 28 April 2015).

cloud service providers over whom the requesting country does not otherwise have jurisdiction. The legality of such informal relationships was not examined by the study. Neither did it backlog any recorded abuses of the Patriot Act, or discuss reports by two US Senators about a 'secret interpretation' of the law, which would give the FBI far-reaching extra surveillance powers that the public is unaware of.<sup>17</sup>

One of the most powerful instruments the US government uses to look into the so-called 'non-content information' of ISPs and cloud providers is the National Security Letter (NSL). NSLs demand specific information about users and are issued directly by the FBI. After the Patriot Act was signed into law, the number of letters issued rose exponentially: from 8,500 in 2000 to 39,346 in 2003. An NSL automatically includes a gag order that prohibits the recipient from notifying users about the request. The FBI need only assert that the information sought is 'relevant' to an investigation.<sup>18</sup> The crucial question in the Hogan Lovells report—'Are government orders to disclose customer data subject to review by a judge?'—is answered with 'yes' in Australia, Canada, Denmark, France, Germany, Ireland, Japan, Spain, the United Kingdom, and the US. However, in the US this condition is only met if the cloud provider, after receiving the NSL, first challenges its built-in gag order. Only when the NSL is unsealed by a judge can the cloud provider inform the user about the existence of the letter. For the Hogan Lovells report, this procedure counts as judicial review.

### Super-Jurisdiction

In Egypt, during the revolution, Facebook and Twitter played the role of subversive, uncensorable alternative media—in part because the servers of these wildly popular services were beyond the reach of local authorities. Indeed, Hosni Mubarak's best bet to fend off the power of the internet was to switch it off entirely. To do so, 'just a few phone calls probably sufficed.'<sup>19</sup> While Mubarak's *ultima ratio* as a sovereign ruler over Egyptian soil proved sufficient to wall the country off from the network, the violent crudeness of this act also demonstrated the dictator's much more substantial *lack of power* over the network's larger infrastructure. Sovereign control over the cloud, in contrast to authoritarian power-mongering, is a sophisticated affair. One might draw a very different map here: the global spread of the US cloud, for example, results in a kind of 'super-jurisdiction' enjoyed by its host country.

Super-jurisdiction can be seen in action in the 2012 seizure of Megaupload.com by the US Department of Justice (DOJ). Megaupload.com was a Hong Kong-based internet enterprise paying loving tribute to all kinds of Hollywood films (to say it politely). The site offered, according to its own self-description, 'no-registration upload and sharing of files up to 1 gigabyte.' It was seized in January 2012 by the DOJ



— 20 — Claire Connelly and Lee Taylor, 'FBI Shuts down Megaupload.com, Anonymous Shut down FBI', in *News.com.au*, 20 January 2012, available from <http://www.news.com.au/technology/fbi-shuts-down-megaupload-com-charges-seven-with-online-piracy/story-e6frtro01226249114650#ixzz1k8bkZU4v> (accessed 28 April 2015). — 21 — Ibid. — 22 — See Jennifer Granick, 'Megaupload: A Lot Less Guilty Than You Think', Center for Internet and Society at Stanford Law School, 26 January 2012, available from <http://cyberlaw.stanford.edu/node/6795> (accessed 28 April 2015). — 23 — David Kravets, 'Uncle Sam: If It Ends in Com, It's Seizable', in *Wired* (Berlin), 6 March 2012, available from <http://www.wired.com/threatlevel/2012/03/feds-seize-foreign-sites/> (accessed 28 April 2015).

and the FBI, backed by film industry copyright claimants. Megaupload.com stands accused of generating 'more than \$175 million in criminal proceeds' and causing 'more than half a billion dollars in harm to copyright owners.'<sup>20</sup>

The site's founder, thirty-seven-year-old internet millionaire Kim Dotcom, and three of his associates were brought to a New Zealand court to face extradition to the US. They'd been living like self-styled oligarchs. In a gesture toward transparency, they said they had 'nothing to hide.'<sup>21</sup> In particular, Dotcom himself embodies the absurd saga of a contemporary, deeply self-parodying internet hooligan—a legal black hole turned persona, unprepared in every way to be 'famous', yet accepting the challenge wholeheartedly. Megaupload.com was, at least in its own self-imagination, nothing more than a technical conduit between those who upload and those who download, its content-indiscriminate policy a typical example of laissez-faire anarcho-capitalism. The US government's prosecution of the site remains highly debated, because the DOJ interpreted the site's global user base as a willful conspiracy to break US law. As Jennifer Granick at Stanford Law notes, the DOJ referenced 'unknown parties' (i.e., the users of Megaupload.com) as members of a conspiracy to conduct a crime in the US. Granick notes that such users 'were located all over the world, and may or may not have acted willfully.' Indeed, with Megaupload.com, the government alleges 'an agreement to violate a US civil law, including by many people who are not subject to US rules.' As Granick then asks, 'Does the United States have jurisdiction over anyone who uses a hosting provider in the Eastern District of Virginia? What about over any company that uses PayPal?'<sup>22</sup> Indeed, these are the sorts of questions prompted by super-jurisdiction.

Super-jurisdiction means that the law of one country can, through various forms of cooperation and association implied by server locations and network connections, be extended into and enacted in another. The US, as a result of its unique position in managing the internet's core, also has jurisdiction over all so-called top level domains, no matter where they are hosted and by whom. All top-level domain names (dot-com, dot-org, dot-net, etc.) must be registered through VeriSign, a Virginia-based company. Using its jurisdiction over the domain name registry, in 2012 the DOJ seized Bodog.com, a gambling website operated from Canada. A US Customs Enforcement spokesperson confirmed to *Wired* that the US had in a similar manner seized 750 different domain names of sites it believed committed intellectual property theft.<sup>23</sup> Michael Geist, an internet law professor at the University of Ottawa, observes that, indeed, 'All Your internets Belong to US':

The message from the [Bodog] case is clear: all dot-com, dot-net, and dot-org domain names are subject to US jurisdiction regardless of where they operate or where they were registered. This grants the US a form of 'super-

— 24 — Michael Geist, 'All Your Inter-  
nets Belong to US, Continued: The Bodeg-  
com Case', in *michaelgeist.ca*, 6 March 2012,  
available from [http://www.michaelgeist.ca/  
content/view/6359/135/](http://www.michaelgeist.ca/content/view/6359/135/) (accessed 28 April  
2015). — 25 — Ronald Deibert, John  
Palfrey, Rafal Rohozinski, Jonathan Zittrain  
(eds.), *Access Controlled: The Shaping of Power,  
Rights, and Rule in Cyberspace*, Cambridge,  
MA: The MIT Press, 2010, p. 6. — 26 —  
Ibid., p. 11. — 27 — Ellen Nakashima, 'A  
Story of Surveillance', in *The Washington Post*  
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content/article/2007/11/07/AR2007110700006.  
html](http://www.washingtonpost.com/wpdyn/<br/>content/article/2007/11/07/AR2007110700006.<br/>html) (accessed 28 April 2015). — 28 —  
Ibid. — 29 — Dan Levine, 'US Court  
Upholds Telecom Immunity for Surveillance',  
in *Thomson Reuters*, 29 December 2011,  
available from [http://newsandinsight.thomson-  
reuters.com/Legal/News/2011/12\\_December/  
U\\_S\\_court\\_upholds\\_telecom\\_immunity\\_for  
\\_surveillance/](http://newsandinsight.thomson-<br/>reuters.com/Legal/News/2011/12_December/<br/>U_S_court_upholds_telecom_immunity_for<br/>_surveillance/) (accessed 28 April 2015).  
— 30 — Deibert et al., p. 381. — 31 —  
Declan McCullagh, 'FBI: We Need Wiretap-  
Ready Web Sites — Now', in *CNET*, 4 May  
2012, available from [http://news.cnet.com/  
8301-1009\\_357428067-83/fbi-we-need-wiretap-  
ready-web-sites-now/](http://news.cnet.com/<br/>8301-1009_357428067-83/fbi-we-need-wiretap-<br/>ready-web-sites-now/) (accessed 28 April 2015).

jurisdiction over internet activities since most other  
countries are limited to jurisdiction with a real and  
substantial connection. For the US, the location of the  
domain name registry is good enough.<sup>24</sup>

### Cloud Surveillance

The various technical components that enable global  
communication—server, network, and client—all lend them-  
selves to surveillance. *Access Controlled*, a MIT Press hand-  
book on internet surveillance and censorship, states that  
'the quest for information control is now beyond denial.'<sup>25</sup>  
It mentions the so-called 'security first' norm, by which the  
combined threats of terrorism and child pornography create  
a mandate for the state to police the net without restriction.  
As the authors assert in their conclusion, 'The security-  
first norm around internet governance can be seen, therefore,  
as but another manifestation of these wider developments.  
Internet censorship and surveillance—once largely confined to  
authoritarian regimes—is now fast becoming the global  
norm.'<sup>26</sup> Indeed, if a lawsuit brought by the Electronic Frontier  
Foundation (EFF) against AT&T is any indication, the US  
government seems determined to expand its access to electron-  
ic communication. The EFF's star witness in the case was  
Mark Klein, a former AT&T technician who claimed to have  
seen, in 2002, the creation and ongoing use of a dedicated  
private room where the National Security Agency (NSA) had  
'set up a system that vacuumed up internet and phone-call  
data from ordinary Americans with the cooperation of  
AT&T.'<sup>27</sup> Klein said the system allowed the government full  
surveillance of not just the AT&T customer base, but that  
of sixteen other companies as well.<sup>28</sup> The US government dis-  
missed the case against the telecommunications provider,  
asserting the privilege of state secrets. The government has  
also dismissed cases against itself and other telecom companies  
that assisted with similar endeavors, including Sprint, Nextel,  
and Verizon.<sup>29</sup> If the allegations are true, according to *Access  
Controlled*, 'they show that the United States maintains  
the most sophisticated internet surveillance regime.'<sup>30</sup>

As technologies expand, the governance, legislation, and  
legalities of surveillance become increasingly complicated.  
In May 2012, CNET reported that the general counsel of the  
FBI had drafted a proposed law that would require social-  
networking sites, e-mail and voice-over-IP (VoIP) providers,  
as well as instant messaging platforms, to provide a backdoor  
for surveillance—a demand from the US government for  
cloud companies to 'alter their code to ensure their products  
are wiretap-friendly.'<sup>31</sup> In 2012, the UK Government an-  
nounced the installation—in collaboration with telecom  
companies and ISPs—of so-called 'black boxes' which would  
retrieve and decrypt communications from Gmail and other  
cloud services, storing the non-content data from these



— 32 — Geoff White, «Black Boxes» to Monitor All Internet and Phone Data, in *Channel 4*, 29 June 2012, available from <http://www.channel4.com/news/black-boxes-to-monitor-all-internet-and-phone-data> (accessed 28 April 2015). — 33 — Alex Wawro, «What Is Deep Packet Inspection?», *PC World*, 1 February 2012, available from [http://www.pcworld.com/article/249137/what\\_is\\_deep\\_packet\\_inspection.html](http://www.pcworld.com/article/249137/what_is_deep_packet_inspection.html) (accessed 28 April 2015). — 34 — Declan McCullagh, «Report: Feds to Push for Net Encryption Backdoors», in *CNET*, 27 September 2010, available from [http://news.cnet.com/8301-31921\\_3-20017671-281.html](http://news.cnet.com/8301-31921_3-20017671-281.html) (accessed 28 April 2015). — 35 — See <http://publicintelligence.net/fbi-suspicious-activity-reporting-flyers/> (accessed 28 April 2015).

communications.<sup>32</sup> But the cloud is nothing like a national telephone network. Whenever the cloud is «wiretapped», authorities listen into a global telecommunications oracle; the data of everyone using that cloud, regardless of where and who they are, and regardless of whether or not they are the suspect of a crime, is at least in principle at the disposal of law enforcement.

Most journalism routinely criticizes (or praises) the US government for its ability to spy on «Americans». But something essential is not mentioned here—the practical ability of the US government to spy on everybody else. The potential impact of surveillance of the US cloud is as vast as the impact of its services—which have already profoundly transformed the world. An FBI representative told CNET about the gap the agency perceives between the phone network and advanced cloud communications for which it does not presently have sufficiently intrusive technical capacity—the risk of surveillance «going dark». The representative mentioned «national security» to demonstrate how badly it needs such cloud wiretapping, inadvertently revealing that the state secrets privilege—once a legal anomaly, now a routine—will likely be invoked to shield such extensive and increased surveillance powers from public scrutiny.

Users' concerns about internet surveillance increased with the proposed Stop Online Piracy Act (SOPA), which was introduced into the US House of Representatives in late 2011. How the government would police SOPA became a real worry, with the suspicion that the enforcement method of choice would be standardized deep packet inspections (DPI) deployed through users' internet service providers—a process by which the «packets» of data in the network are unpacked and inspected.<sup>33</sup> Through DPI, law enforcement would detect and identify illegal downloads. In 2010, before SOPA was even on the table, the Obama Administration sought to enact federal laws that would force communications providers offering encryption (including e-mail and instant messaging) to provide access by law enforcement to unencrypted data.<sup>34</sup> It is, however, worth noting that encryption is still protected as «free speech» by the First Amendment of the US Constitution—further complicating, but not likely deterring, attempts to break the code. One way of doing so consists of surrounding encryption with the insinuation of illegality. The FBI in 2012 distributed flyers to internet cafe business owners requesting to be wary of «suspicious behavior» by guests, including the «use of anonymizers, portals or other means to shield IP address» and «encryption or use of software to hide encrypted data». In small print, the FBI added that each of these «indicators» by themselves, however, constituted lawful conduct.<sup>35</sup>

#### Coercive Paternalism

«Real name» requirements by the cloud-based social networking platforms Facebook and Google+ expressly attack



— 36 — ‘Facebook’s Name Policy’, Facebook Help Center, in *facebook.com*, available from [http://www.facebook.com/help/?faq=112146705538576&in\\_context](http://www.facebook.com/help/?faq=112146705538576&in_context) (accessed 28 April 2015). ‘Google+ Page and Profile Names — Google+ Help’, in *plus.google.com*, available from <http://support.google.com/plus/bin/answer.py?hl=en&answer=1228271> (accessed 28 April 2015). — 37 — Alexis Madrigal, ‘Why Facebook and Google’s Concept of “Real Names” Is Revolutionary’, *The Atlantic*, 5 August 2011, available from <http://www.theatlantic.com/technology/archive/2011/08/why-facebook-and-googles-concept-of-real-names-is-revolutionary/243171/> (accessed 28 April 2015). — 38 — ‘Amazon.com Help: Pen Names and Real Names’, in *amazon.com*, available from <http://www.amazon.com/gp/help/customer/display.html?ie=UTF8&nodelid=14279641> (accessed 28 April 2015). — 39 — Mark T. Wieczorek, ‘Amazon Real Name Badge’, in *MarkTaw*, 23 July 2004, available from <http://www.marktaw.com/technology/AmazonRealNameBadge.html> (accessed 28 April 2015). Amy Harmon, ‘Amazon Glitch Unmasks War of Reviewers’, in *New York Times* (New York), 14 February 2004, available from <http://www.nytimes.com/2004/02/14/us/amazon-glitch-unmasks-war-of-reviewers.html?pagewanted=3&src=pm> (accessed 28 April 2015). — 40 — Declan McCullagh, ‘Obama to Hand Commerce Dept. Authority over Cybersecurity ID’, in *CNET*, 7 January 2011, available from [http://news.cnet.com/8301-31921\\_3-20027800-281.html?tag=content-Main;contentBody](http://news.cnet.com/8301-31921_3-20027800-281.html?tag=content-Main;contentBody) (accessed 28 April 2015). — 41 — Elizabeth Kolbert, ‘The Things People Say’, in *The New Yorker* (New York), 2 November 2009, available from [http://www.newyorker.com/arts/critics/books/2009/11/02/091102crbo\\_books\\_kolbert?currentPage=all](http://www.newyorker.com/arts/critics/books/2009/11/02/091102crbo_books_kolbert?currentPage=all) (accessed 28 April 2015).

anonymity and pseudonymity online, affecting the fundamentals of political speech. Real name directives require users to register with a service using the name that is in their passport. The reasons given by cloud services for such real name requirements are vague—perhaps for fear of sounding too directly authoritarian. The preferred route, instead, is that of fatherly advice. Facebook claims that it has a real name policy ‘so that you always know who you’re connecting with’, while Google states that it requires real names so ‘that the people you want to connect with can find you’.<sup>36</sup> These explanations gesture towards a conception of normative social arrangements—requiring that you use the same name that you’d use among your friends, family, or coworkers. Alexis Madrigal points out a certain irony in the Google+ real name requirement: The kind of naming policy that Facebook and Google Plus have is actually a radical departure from the way identity and speech interact in the real world. They attach identity more strongly to every act of online speech than almost any real world situation does.<sup>37</sup>

Cloud providers such as Amazon use real name registration as a mechanism for accountability. Though Amazon still allows users to use a ‘pen name’, the trademarked ‘real name’ attribution is advertised as having the ability to ‘potentially increase your reputation in the community’ as a retailer, seller, or reviewer.<sup>38</sup> Some see the real name badge as a step towards ‘fixing their flawed [and] exploitable review system’ for reviewing books—a system notoriously dominated by biased ‘anonymous’ users, often thought to be, and sometimes proven to be, other authors, their family members, or the books’ publishers.<sup>39</sup> Though Amazon’s reasoning for promoting the use of real names is more explicit than that of Facebook and Google+, one can imagine the marketing benefits of a synchronized real name system between social media and retail websites—and the connection that such a synchronicity might have with the government. Such requirements can be seen as aligned with plans of the US government to introduce a universal ‘trusted identity’ or ‘internet ID’ system for US citizens, a commission the White House granted to the US Commerce Department in 2011. According to White House Cybersecurity Coordinator Howard Schmidt, the effort entails nothing less than creating an ‘identity ecosystem’ for the internet.<sup>40</sup>

Cass Sunstein, the Obama Administration’s chief internet advisor, has recently argued for government policy against the spread of ‘rumors’ on the internet; as noted by the *New Yorker*, one of the most persistent of such rumors was the theory that President Obama had been born in Kenya—and thus holds his presidency illegally.<sup>41</sup> Sunstein believes that certain properties of the internet gear public speech toward the uninformed forwarding and circulation of rumors and conspiracy theories. In ‘echo chambers’ and through ‘cybercascades’, one-sided opinion would spread rapidly and widely in the network without rebuttal. Supposedly balanced reporting by



— 42 — Cass R. Sunstein, *Republic.com 2.0*, Princeton and Oxford: Princeton University Press, 2007, p. 44. — 43 — Cass R. Sunstein, Adrian Vermeule, 'Conspiracy Theories', in *Harvard University Law School Public Law & Legal Theory Research Paper Series*, paper no. 199, Chicago: University of Chicago Law School, 2008, p. 22, available from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1084585](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1084585) (accessed 28 April 2015). — 44 — Michael Kan, 'Beijing to Require Users on Twitter-like Services to Register With Real Names', in *PC World*, 16 December 2011, available from [http://www.pcworld.com/businesscenter/article/246360/beijing\\_to\\_require\\_users\\_on\\_twitterlike\\_services\\_to\\_register\\_with\\_real\\_names.html?tk=rel\\_news](http://www.pcworld.com/businesscenter/article/246360/beijing_to_require_users_on_twitterlike_services_to_register_with_real_names.html?tk=rel_news) (accessed 28 April 2015). — 45 — Michael Bristow, 'China Arrests over Coup Rumours', in *BBC News*, 31 March 2012, available from <http://www.bbc.co.uk/news/world-asia-china-17370003> (accessed 28 April 2015). David Eimer, 'China Arrests Six over Coup Rumours', in *The Telegraph* (London), 31 March 2012, available from <http://www.telegraph.co.uk/news/worldnews/asia/china/9177717/China-arrests-six-over-coup-rumours.html> (accessed 28 April 2015).

professional journalists in the mainstream media now has to compete for attention with, and gets often surpassed by, every other blog post, Facebook update, or tweet. The effortless ability for all Internet users to compose and live on a 'Daily Me'—a news diet catered to fit and maintain an individual, already established, self-referential set of beliefs—would result in a fragmentation of the general public into factions which no longer expose themselves to views held by other factions. Sunstein claims that under such fragmentation, 'diverse speech communities' are created 'whose members talk and listen mostly to one another.' And,

When society is fragmented in this way, diverse groups will tend to *polarize* in a way that can breed extremism and even hatred and violence. New technologies, emphatically including the Internet, are dramatically increasing people's ability to hear echoes of their own voices and to wall themselves off from others.<sup>42</sup>

Sunstein is concerned with how rumors may impair the effectiveness of government, and undermine its legitimacy. Early 2008, he and a co-author published a paper on conspiracy theories around the 9/11 attacks. In the paper, Sunstein recommended that 'Government agents (and their allies) might enter chat rooms, online social networks, or even real-space groups and attempt to undermine percolating conspiracy theories by raising doubts about their factual premises, causal logic or implications for political action.'<sup>43</sup>

Nowhere is the coercive government stance toward online rumors as clear as in China. Beijing put forth regulations requiring users to register on social media sites with their 'real name identities' by March 2012—regulation comparable to policies already spontaneously embraced by Facebook and Google. Sites including Sina Weibo, one of the country's largest microblogging sites, have begun implementing these regulations, which also forbid users from making statements against the state's honor or statements that may disrupt civil obedience.<sup>44</sup> Around the same time, social media sites across the country flared up over the ouster of political leader Bo Xilai from the Communist Party. The Chinese police swiftly detained six people and shut down sixteen websites over 'rumors' surrounding the incident, including claims that military vehicles were entering Beijing.<sup>45</sup>

### Cloud as a Political Space

The increasing prominence which cloud-based internet services, social media and VoIP technologies now enjoy over legacy tools of communication shows in how they enable new, virtually cost-free forms of organization. For social movements relying on collective action, this factor has proven to be key. Unsurprisingly, when social media platforms are suddenly

— 46 — Shiv Malik, 'Facebook Accused of Removing Activists' Pages', in *The Guardian* (London), 29 April 2012, available from <http://www.guardian.co.uk/technology/2011/apr/29/facebook-accused-removing-activists-pages> (accessed 28 April 2015). — 47 — Tim Bradshaw, 'Mark Zuckerberg Friends David Cameron', in *Financial Times* (New York), 21 June 2012, available from <http://blogs.ft.com/tech-blog/2010/06/mark-zuckerberg-friends-david-cameron/#axzz1yC7waUhe> (accessed 28 April 2015). — 48 — MacKinnon, p. xxii. — 49 — 'Internet Freedom', the prepared text of U.S. Secretary of State Hillary Rodham Clinton's speech, delivered at the Newseum in Washington, D.C. Foreign Policy, 21 January 2010, available from [http://www.foreignpolicy.com/articles/2010/01/21/internet\\_freedom?page=0,2](http://www.foreignpolicy.com/articles/2010/01/21/internet_freedom?page=0,2) (accessed 28 April 2015).

switched off, their ability to organize can be severely affected. Facebook, in the wake of nationwide anti-austerity protests in the UK in February 2011, deleted the profiles of dozens of political groups preparing to take part in further protests. In doing so, Facebook effectively disabled lawful political activism, which had, for obvious reasons, moved their coordination to the cloud. The reason for the purge is still not known and likely never will be. All the social networking behemoth could utter to justify its behavior was cryptic technospeak. Profiles had 'not been registered correctly', as a Facebook spokeswoman explained.<sup>46</sup> In 2010, UK Prime Minister David Cameron and other Conservative politicians met in London with Facebook founder Mark Zuckerberg. Their admiration was mutual.<sup>47</sup>

Rebecca MacKinnon, a former CNN reporter and cofounder of the citizen media network Global Voices, asserts in her book *Consent of the Networked* that 'we cannot understand how the internet is used unless we first understand the ways in which the internet itself has become a highly contested political space.'<sup>48</sup> This applies equally and equally urgently, to the cloud.

The combined rights to a free flow of information, freedom of expression, and freedom from censorship, have been described as a compound right to 'internet freedom'. Indeed, Google's Wael Ghonim at the beginning of this story suggested that unhindered access to, and use of, the internet enables the liberation of a society.

Here, the free flow of information is blocked by clearly identifiable authoritarian despots. To not have internet freedom, one must be under the oppression of a shameless tyrant, or be living in a 'closed society' where the free flow of information is not sufficiently appreciated just yet. On January 21, 2010, US Secretary of State Hillary Clinton delivered a speech on US foreign policy and internet freedom, highlighting exactly this view. Clinton assured her audience in Washington, D.C. that 'As I speak to you today, government censors are working furiously to erase my words from the records of history.'<sup>49</sup> Evgeny Morozov, a US-based, Belarusian-born internet scholar rightly criticized Clinton's 'anachronistic view of authoritarianism'. As Morozov explained, 'I didn't hear anything about the evolving nature of internet control (e.g. that controlling the internet now includes many other activities—propaganda, DDoS attacks, physical intimidation of selected critics/activists). If we keep framing this discussion only as a censorship issue, we are unlikely to solve it.' He went on to criticize the double standards the State Department advertised with regard to online anonymity:

On the one hand, they want to crack down on intellectual property theft and terrorists; on the other hand, they want to protect Iranian and the Chinese dissidents. Well, let me break the hard news: You can't have it both ways



— 50 — Evgeny Morozov, 'Is Hillary Clinton Launching a Cyber Cold War?', in *Foreign Policy Net.Effect*, 21 January 2010, available from [http://neteffect.foreignpolicy.com/posts/2010/01/21/cyber\\_cold\\_war](http://neteffect.foreignpolicy.com/posts/2010/01/21/cyber_cold_war) (accessed 28 April 2015). — 51 — See <http://www.internetfreedom.org/> (accessed 28 April 2015). — 52 — See <http://www.savetheinternet.com/> (accessed 28 April 2015). — 53 — Tim Wu, 'Network Neutrality, Broadband Discrimination', in *Journal of Telecommunications and High Technology Law*, vol. 2, p. 141, 2003, available from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=388863](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=388863) (accessed 28 April 2015). — 54 — Joichi Ito, 'Weblogs and Emergent Democracy', available from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=306863](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=306863) (accessed 28 April 2015).

and the sooner you get on with 'anonymity for ever one' rhetoric, the more you'll accomplish. I am very pessimistic on the future of online anonymity in general. I think there is a good chance it will be eliminated by 2015—and this hesitance by the State Department does not make me feel any more optimistic.<sup>50</sup>

Still, the definition of internet freedom remains relatively opaque. One example of this vagueness is provided by Internetfreedom.org, a global consortium, which aims to 'inform, connect, and empower the people in closed societies with information on a free internet.'<sup>51</sup> Savetheinternet.com, a project of Free Press, breaks down internet freedom into somewhat more clearly defined categories—'net neutrality (wired and wireless), strong protections for mobile phone users, public use of the public airwaves and universal access to high-speed internet.'<sup>52</sup> The notion of net neutrality is as relevant to internet freedom as it is to the structure of the cloud, since the network's management is in the hands of a patchwork of government agencies and private enterprises who may (or may not) hold a bias toward certain information on the network, or a bias toward one another. Coined by the legal scholar Tim Wu in 2003, network neutrality was originally meant to benchmark and promote the open nature of the internet for the sake of innovation—an 'end-to-end' infrastructure unbiased towards its content. As Wu stated, 'A communications network like the internet can be seen as a platform for a competition among application developers. Email, the web, and streaming applications are in a battle for the attention and interest of end-users. It is therefore important that the platform be neutral to ensure the competition remains meritocratic.'<sup>53</sup> Network neutrality applies to a decentralized architecture, with clearly divided roles between ISPs, broadband service providers, content providers, and services and applications on the network. It justifies a *de facto* gentlemen's agreement through a joint economic interest in innovation and fair competition. Indeed, also political speech can be considered part of a competition—one of ideas on how to (not) govern ourselves. Venture capitalist Joichi Ito expressed this view in 2003, when he wrote that such a competition of ideas 'requires freedom of speech and the ability to criticize those in power without fear of retribution.'<sup>54</sup>

Insofar as the cloud's software services use the shared internet, they can be considered applications run on the network. To this end, network neutrality applies to the cloud (for example, the cloud is expected to consume more and more bandwidth in the network, possibly at the cost of other applications and services). The concept of network neutrality is more difficult to apply *in* the cloud, since some of the nominal conditions to institute neutrality are absorbed by the cloud's combination of hosting and software services within a single black box. In the cloud, there is no more principled separation

— 88 — On a related note, cyber law professor Jonathan Zittrain in 2008 wrote *The Future Of The Internet—And How To Stop It*, a book focusing on the rise of the web's tethered appliances—which, like North Korean radio sets, can be attuned to exclude or disregard certain content, and are designed not to be tinkered with by their users. Zittrain argued that such closed service appliances—emphatically including design icons like iPods and iPhones, for example—would in fact contribute to stifle the generative and innovative capacity of the web. See Jonathan Zittrain, *The Future Of The Internet—And How To Stop It*, New Haven and London: Yale University Press, 2008. — 86 — Christina Bonnington and Spencer Ackerman, 'Apple Rejects App That Tracks U.S. Drone Strikes', in *Wired* (Berlin), 30 August 2012, available from <http://www.wired.com/dangerroom/2012/08/drone-app/> (accessed 28 April 2015). — 87 — Nick Wingfield, 'Apple Rejects App Tracking Drone Strikes', in *New York Times Blog*, 30 August 2012, available from <http://bits.blogs.nytimes.com/2012/08/30/apple-rejects-app-tracking-drone-strikes/> (accessed 28 April 2015).

between the hosting of data, software, and client-side tools through which the data is handled and experienced. Indeed, the enormous success of the cloud is that it provides for all of these things at once.<sup>55</sup>

The Terms of Service of any cloud-based provider are a far cry from a binding agreement to net neutrality; they allow plenty of space for 'cloudy bias'. For example, in August, 2012, Apple banned 'Drones+' from its App Store. This app, developed by NYU student Josh Begley, provides aggregated news on US drone strikes in Pakistan, Yemen and Somalia, and it includes a Google map on which the strikes are marked. The app also prompts the user whenever a new drone strike has occurred, and says how many casualties it had produced. Crucially, the information aggregated by the app is already completely public and freely available through various other sources including *The Guardian's* iPhone app. Apple demonstrated its cloudy parody of network neutrality in the ever-changing reasons it gave for rejecting Drones+. Apple had problems with the Google logo appearing on the Google map. In July, the company stated in an e-mail that 'The features and/or content of your app were not useful or entertaining enough, or your app did not appeal to a broad enough audience.' By August, Apple changed its mind. The app contained 'content that many audiences would find objectionable, which is not in compliance with the App Store Review Guidelines.' Indeed, the company eventually concluded that Drones+, which does not show users any images of actual drone-related bloodshed, was 'objectionable and crude.'<sup>56</sup> *The New York Times* wondered how on earth it could be that

the material Apple deemed objectionable from Mr. Begley was nearly identical to the material available through *The Guardian's* iPhone app. It's unclear whether Apple is treating the two parties differently because *The Guardian* is a well-known media organization and Mr. Begley is not, or whether the problem is that Mr. Begley chose to focus his app only on drone strikes.<sup>57</sup>

One can endlessly ponder why Apple banned Drones+ from its cloud but admitted *The Guardian*, and one will never be finished weighing the arguments. The point is that if its cloud operated even under something remotely looking like network neutrality, Apple could not have reasonably rejected the app. The case also brings to mind Evgeny Morozov's earlier warning that government censorship of the network nowadays is more sophisticated than a crude Mubarak internet kill switch. As Rebecca MacKinnon writes,

citizens are [...] vulnerable to abuse of their rights to speech and assembly not only from government but also from private actors. In democracies, it follows that citizens must guard against violations of their digital rights by govern-



— 58 — MacKinnon, p. 119, — 59 —  
Gregg Keizer, 'Apple boots WikiLeaks app  
from iPhone store', in *Computerworld*,  
21 December 2010, available from [http://www.computerworld.com/s/article/9201920/Apples\\_boots\\_WikiLeaks\\_app\\_from\\_iPhone\\_store](http://www.computerworld.com/s/article/9201920/Apples_boots_WikiLeaks_app_from_iPhone_store) (accessed 28 April 2015).

ments and corporations—or both acting in concert—  
regardless of whether the company involved is censor-  
ing and discriminating on its own initiative or acting  
under pressure from authorities.<sup>58</sup>

It is highly unlikely that Drones+ was banned after direct government interference. But it isn't difficult to imagine an informal, unstated, and rather intuitive constellation of interests between Apple—universally praised by US politicians on both sides of the aisle—and the US Government. Shared interests and informal ties between private enterprise and government, based on mutual forms of 'Like', rather than strict separations by Law, may account for *de facto* forms of censorship in the cloud, without the explicit order to enact it or the explicit obligation to justify it. In December 2010, Apple removed a WikiLeaks iPhone app from its store, citing its developer guidelines: 'Any app that is defamatory, offensive, mean-spirited, or likely to place the targeted individual or group in harms [sic] way will be rejected.'<sup>59</sup> Simultaneous to the WikiLeaks app being banned, other US cloud companies, including Amazon and PayPal, stopped providing services to WikiLeaks.

The political, legal and jurisdictional consequences of the cloud are slowly becoming apparent—right at the time when we are unlikely to withdraw from it. The cloud is just too good. We won't stop using our iPhones, iPads, Androids and Kindles. Paypal is still our frenemy. Happily the captives of the cloud, we will tweet our critiques of it, and Facebook-broadcast our outcries over its government back doors. But the story is not over yet. Will the anarcho-libertarian roots of the internet kick back at the cloud's centralized architecture—or are they forever overrun by it? Has the cloud assumed its final form, or is there still a time and a place for surprises?

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