

# IMAGE AGENTS

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In the digital condition, images, it seems, have started to *do* things. This is the focus of the contemporary discourse on operational images, which emphasizes the automated and machinic aspects of digital image applications—or “machine images” for short. Admittedly, the discourse on operational images originates from a dark place: it was the infamous “filming bombs” of the 1991 Gulf War, along with the repeated broadcasting of bomb’s-eye-view footage to horrified and fascinated TV audiences, which prompted Harun Farocki to coin the term “operative image.”<sup>1</sup> While image-guided war technologies (including drones) remain central to the discourse, much attention is also paid to machine vision and algorithmic image operations more generally. A key concern is that machines have now started to “see for themselves.”<sup>2</sup>

During the same period, there have been other developments, including the camera phone and the social web, which have transformed photography to a screen-based communal activity that mostly takes place online. The new opportunities for instant sharing have given rise to the “networked image,” which promotes “a life more photographic,” as Daniel Rubinstein and Katrina Sluis beautifully put it.<sup>3</sup> While photo-sharing and social networking sites have made images a more ingrained part of human social life, the networked images as such seem to lead an existence beyond human control.

This is a point where the two discourses focusing on operational and networked images, respectively, start to align. In the digital condition, images, it seems, take on a life of their own. This is most obvious, of course, in the case of automated or semi-automated image applications. To stick to the military range of examples, think of, say, a heat-seeking missile that uses infrared light emission to track its target. In the case of photo-sharing, we can also talk about a relative autonomy: as soon as an image is let loose on the web, it gains a peculiar independence. In today’s theory parlance, the quasi-autonomous lives of images are often talked about in terms of their *agency*. But what is this strange life of images, what is this agency? What is it, really, that images do? In the following, I will make some suggestions.

THEY OPERATE. The notion of machine image can be understood in different ways. One way is to focus on image production: a machine image is an image made by a machine. In this sense, the notion includes a broad range of technical images, such as camera obscura, photography, film, and medical imaging. Another way is to focus on image consumption: a machine image is an image made to be seen by machines. The discourse on operational images, which explores the effects of computation on visual culture, typically combines the two understandings. Trevor Paglen puts it thus:

Visual culture has changed form. It has become detached from human eyes and has largely become invisible. Human visual culture has become a special case of vision, an exception to the rule. The overwhelming majority of images are now made by machines for other machines, with humans rarely in the loop.<sup>4</sup>

The discussion of machine images tends to identify the operational and the machinic with automation. Moreover, the influx of computational machines into visual culture is often framed in terms of a replacement logic, which casts humans and machines as adversaries. Another approach would be to adopt a broader understanding of the operational and the machinic, no longer identifying it with automation. The broader take on the operational has the advantage of pushing beyond the adversarial model, allowing us to conceptualize the relation between humans and machines in less antagonistic ways. In the latter approach, the image itself can be seen as a machine of sorts—now conceptualized as a “being that operates.”<sup>5</sup>

Independent of how the human-machine relation is understood, the discourse on operational images calls attention to the highly consequential yet often invisible activity of images, to their organizing and (infra)structural power. To get a grip on this power, I propose that we rethink images as *apparatuses* in the dual sense of material appliance and theoretical dispositif.

THEY INFORM VISION. Approaching images as apparatuses, whose operation to a large extent happens in the background, shifts the relationship between images and the human sensible apparatus. No longer conceptualized as visible things that passively appear to the human perceptual system, they are considered, rather, in terms of the *difference* they make to perception. The question, then, is not whether a certain image

modality (say, photography, x-ray or computer vision) conforms to, emulates, transgresses or outperforms human vision. The question, rather, is how the introduction of a “foreign” apparatus allows humans *to see otherwise*—sometimes even permitting an *outsourcing* of perception through the setup of an external system that “sees” on our behalf. The amplifying role of images, however, is not always recognized. In the discourse on operational images, for example, computer vision is frequently taken to mark a break with the human order, as in the quote from Paglen, which emphasizes its detachment from human eyes. However, computer vision could also be conceived as a mediate process that simultaneously amplifies *and* decenters the human order through the establishment of a new hybrid order where the human is still in the loop, even if no longer the once taken-for-granted center of things.

The question, in other words, is whether to understand human perception and computer vision as *competitors*, or whether to understand them in their *coupling*—as forming a mixed visual system that expands the boundaries of the visible, no longer to be defined solely in terms of the perceptual powers of the human body considered in isolation. Amplified visual systems see *more and differently*. They do not imitate the already visible; they *make visible*. And, in so doing, they open new world aspects.

THEY INSTRUCT ACTION. In the discourse on operational images, the paradigmatic example of an image is a utility image. The utility aspect is accentuated in Farocki’s definition, which puts the spotlight on images that “do not represent an object, but rather are part of an operation.”<sup>6</sup> Thomas Elsaesser accentuates the utility aspect even further, by characterizing operational images as “instructions for action”—indeed, he maintains that, in today’s digital media environment, the instructive function have become “the new default value of all image-making.”<sup>7</sup> Thus conceived, operational images are *image-instruments*: action-enabling tools constructed to serve practical human purposes. Certainly, the construction of image-instruments long predates the digital age. However, as pointed out by Lev Manovich, the common focus on the history of images in terms of illusion may lead us to ignore the parallel history of image-instruments.<sup>8</sup>

The use here of the term “image-instrument,” does not imply that operational images are mere instruments for human intentional actions. Far from it. As is the case with other action-enabling technologies, the introduction of a new instrument or tool

shifts the human-world relation and transforms the very practice it is meant to support. A good example of such a shift is found in contemporary surgery, where a broad range of image-guided technologies have been introduced to minimize invasiveness and increase the precision and efficiency of diagnostics and treatment. The new tools enhance surgeon perception and navigation, but at the same time they transform the surgical profession by demanding new sets of skills that increasingly involve handling computer interfaces.<sup>9</sup>

Drawing on the surgical example, we can specify in more detail in what sense operational images instruct action: they release new perception and action potentials, they assist and guide the actions performed by human practitioners, and they change the nature of these actions by requiring the development of new practical know-how.

THEY INTERVENE. Approaching images as beings that operate, that inform vision and instruct actions, has implications for how we are to understand their mediating role. As I have proposed elsewhere, the images that interest us here take on a non-trivial role as “adaptive mediators.”<sup>10</sup> This means that they have the power to alter the relation of humans to the world. Operational images have *efficacy*: they warrant our attention due to the way they intervene (for better or worse) into the individuation of *other* beings (ourselves included). Operational images do more than depict or refer to phenomena. They *participate in the genesis of things* by launching new processes of becoming through which the phenomena they target come to be delineated and individuated. The images in question operate, in other words, by instituting an *environment of individuation* (the hybrid order talked about earlier) in and through which other beings come to be articulated (seen, acted-upon) in a highly specific way.

An example would be magnetic resonance imaging (MRI), a medical imaging method that relies on the magnetic characteristics of hydrogen atoms which abound in the human body. The strong magnetic field of the MRI scanner quite literally institutes an environment of individuation by shifting the behaviors of the magnetic moments of hydrogen atoms, making them line up along the center of the scanner, and thus rendering them susceptible to the systematic manipulations by which the differential MRI signal is generated, which in turn forms the basis of the characteristic MR image contrast.<sup>11</sup> Subsequently, when the radiologists consult the resulting scans, the interventional

process is repeated on a new level, the MRI scans now playing the role of adaptive mediators—informing the vision of the radiologists and instructing their actions, and thus, participating in their individuation *qua* radiologists.

Approaching images as adaptive mediators helps us realize that images have *ontological import*: they intervene into phenomena by shifting their style of being.

THEY EVOLVE AND MULTIPLY. So far, I have characterized operational images as machines/beings-that-operate, apparatuses, image-instruments, adaptive mediators and environments. I will also add that the images we are concerned with here are *artifacts*. They have been fabricated by humans, often (since we are dealing mostly with image-instruments) to fulfill specific practical tasks. Even so, I have talked about them as *beings* (that operate, that have a mode of existence) and ascribed to them some kind of *life*.

The life of images has to do with their autonomy. Images gain a relative autonomy thanks to their existence as material artifacts. As material artifacts, they exist independently from their maker(s); they can be shared, passed on to others, and translocated to other times and places. They gain a relative autonomy, also, through their coupling to the surrounding environment. They come to life by installing a mixed environment in which, and through which, they become efficacious. Importantly, though, they also depend on this mixed environment for their own functioning, and they are themselves individuated by it. This is how images, as technical artifacts, come to evolve in quasi-autonomous ways not foreseen by their makers.

As beings that operate, images are inherently plural and serial, characteristics that are even more accentuated in the digital condition. An MRI scan, for example, is never a singular entity. It forms part of a series (indeed, several series) of scans acquired in the same scanning session, which together make up a navigable image space. Besides, in the digital condition, images are inherently shareable, which again, grants them a relative autonomy. When let loose on the web, they have the power to go viral, to spread quickly and widely in uncontrollable ways. Also in this case, images take on the role as adaptive mediators, such as when internet memes serve as cultural touchstones for collective individuation by facilitating the formation of online communities.<sup>12</sup>

The list of actions and doings of images could go on.

What are we to say then about the status of images in the digital condition? To what extent can we talk about a change in the ontology of the image? To my mind, the ontology question becomes more interesting if we rephrase it in terms of the ontological *import* of images, to a question about to what extent, and how, images make a difference in the world.

The discourse on operational images is undecided about the extension and meaning of the term “operative image.” In coining the term, Farocki defined operational images in opposition to representational images (images that “represent an object”). This seems to suggest that operational images are a separate category of images that supplements the (supposedly larger) category of representational images, *or* that the operational and the representational are nothing but context-dependent functions. Another way would be to think of the operational as a new theory of images as such. By characterizing images as adaptive mediators, I propose an eco-operational approach that acknowledges the ontological import of images of all sorts, positing them as *agents*—image agents.

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- 1 Harun Farocki, "Phantom Image," *Public*, no. 29 (2004).
- 2 Trevor Paglen, "Operational images," *e-flux*, no. 59 (November 2014), accessed May 24, 2021, <https://www.e-flux.com/journal/59/61130/operational-images/>.
- 3 Daniel Rubinstein and Katrina Sluis, "A Life More Photographic: Mapping the Networked Image," *Photographies* 1, no. 1 (2008).
- 4 Trevor Paglen, "Invisible Images (Your Pictures are Looking at You)," *The New Inquiry* (December 8, 2016), accessed May 24, 2021, <https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/>.
- 5 I have developed the idea of machines and images as "beings that operate" in more detail elsewhere. The idea draws on Gilbert Simondon's non-mechanical understanding of machines. See A. S. Aurora Hoel, "Images as Active Powers for Reality: A Simondonian Approach to Medical Imaging," in *Dynamis of the Image: Moving Images in a Global World*, eds. Emmanuel Alloa and Chiara Cappelletto (Berlin: De Gruyter, 2020).
- 6 Farocki, "Phantom Image," 17.
- 7 Thomas Elsaesser and Alexander Alberro, "Farocki: A Frame for the No Longer Visible: Thomas Elsaesser in Conversation with Alexander Alberro," *e-flux*, no. 59 (November 2014), accessed May 24, 2021, <http://e-flux.com/journal/59/61111/farocki-a-frame-for-the-no-longer-visible-thomas-elsaesser-in-conversation-with-alexander-alberro/>.
- 8 Lev Manovich 2001, *The Language of New Media* (Cambridge, Mass.: MIT Press, 2001), 167.
- 9 Kathrin Friedrich and A. S. Aurora Hoel, "Operational Analysis: A Method for Observing and Analyzing Digital Media Operations," *New Media & Society*, OnlineFirst (first published March 29, 2021), <https://journals.sagepub.com/doi/10.1177/1461444821998645>.
- 10 Hoel, "Images as Active Powers."
- 11 See Hoel, "Images as Active Powers," for more details about the MR image acquisition process.
- 12 Adrienne L. Massanari, *Participatory Culture, Community, and Play: Learning from Reddit* (New York: Peter Lang, 2015).