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## **The Heteromation of Radioactive Images**

An interview with **Yves Citton** by Lauren Huret  
Translated by Eric Rosencrantz

**Lauren Huret:** *I have the impression very little research has been done on our ability to "face" and "digest" disturbing images, and on all their psychological repercussions. What is the real impact of an image? Is it possible to understand how an image affects our perceptual apparatus, our bodies, and to talk about "media influence" on that basis?*

**Yves Citton:** I’ve learned from experience that lots of things are done and published that we’re not able to find out about or to follow sufficiently closely. So I’m more inclined to assume that a lot of research on these questions has been and is being conducted, but unfortunately it gets too little coverage in the media we get our information from.

Apart from Jeffrey Sconce's *Haunted Media*<sup>1</sup>, the book I find most enlightening on these issues is Mireille Berton's *Le corps nerveux des spectateurs*<sup>2</sup>, in which she runs through a nearly exhaustive list of the diatribes against the "dangers of cinema" printed between 1895 and about 1920 in various countries. If we replace "cinematography" with "video games" or "Internet", those diatribes cover just about everything we hear nowadays about the evils of digital images: the new medium incites youngsters to commit acts of violence, it damages the eyes, the brain, the nervous system, it disorients people who lose the ability to distinguish between good and evil, between truth and falsehood, it engenders criminal cravings, wreaks havoc on our sexuality and so on. And before cinema, there were condemnations of the harmful effects of reading (ever since Plato), printed matter (16<sup>th</sup>–17<sup>th</sup> century), periodicals (18<sup>th</sup>–19<sup>th</sup> century), kaleidoscopes (c. 1810–1830), the telegraph and telephone, after which countless accusations were leveled at radio and television.

What position should we take in the face of this quasi-identical condemnation of each new communication medium over and over again down through the centuries? There are two pitfalls to avoid. For one thing, we clearly need to get away from the prevailing naïve notion that the world is coming to an end every time new technologies emerge to transmit affectivity between people. So, first of all, let’s step back from these invariably a bit exaggerated and reactionary attacks on the evils of emerging media. New media change the makeup of the public, the flow of funding, the balance of power... So the established powers that be are often ready and willing to draw on superficial observations they can use to condemn innovations.

It might shed some light on the dominant discourse to situate it in terms of the three phases analyzed by Mireille Berton and other media archaeologists: the first

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<sup>1</sup> Jeffrey Sconce. *Haunted Media* (Duke University Press, 2000).

<sup>2</sup> Mireille Berton. *Le corps nerveux des spectateurs* (L’âge d’homme, 2016).

phase is one of optimistic, utopian enthusiasm sparked by a new medium that fires up the public imagination; the second is one of doom-mongering, fueled by imaginary menaces and competing interests, stressing the apocalyptic dangers of the new medium; the third phase involves a more serene understanding of the actual pros and cons, the advantages and disadvantages that can be observed through more informed methods of inquiry. As for digital media – among which one should, naturally, differentiate between lots of sub-domains, each of which has its own timeline (mailing lists, video games, Facebook, Twitter, virtual assistants) – it seems to me that we're just starting to enter the third phase, and by far the bulk of current discourse about digital media (including mine, of course) will elicit an indulgent smile from future generations...

But there's another pitfall to avoid, one that's rarely brought up but is nonetheless important, in my eyes. It's far too easy to look down condescendingly or contemptuously on those who decried the end of the world when they saw moving pictures spreading throughout Europe at the beginning of the 20<sup>th</sup> century. It seems to me much more interesting to consider how right they were! Yes, it was the end of the world as we knew it several times in the 20<sup>th</sup> century: World War I, World War II, totalitarian persecution, colonial massacres, genocides in Rwanda and Burma, the loss of cultural diversity and, above all, our headlong dash towards ecological collapse. Who can say what part motion pictures have played (Griffith's racist *Birth of a Nation*), radio broadcasts (the "voice of the Führer", Rwanda's Radio Mille Collines), the dumbing-down effects of television (the simplistic authority of newscasts, the vindictiveness of reality TV, commercial colonialism), the viral nature of online networks (Trump's electoral victory, Facebook lynchings)? It would be terribly naïve to imagine that new media don't (re)condition the way we live and think.

The crucial thing is to gauge, in each case, their fundamental dual nature – what Bernard Stiegler calls their "pharmacological" dimension – as well as to precisely analyze which are their alienating and which are their empowering aspects.

Questions about media images and haunted media need to be placed in an "archaeological" framework of this kind that is sensitive to such dualities. Then it becomes very hard to generalize about them. We need to delve into the particularities of each type of content (text, stills, moving pictures, audiovisual content, the pacing of the shots, the lineup of programs or scenes, contextualization etc.) before we can even hope to understand what images do to us, before we can judge what's good and bad about them. What makes it all the more difficult is that it's not enough to decide whether a particular image is harmful or salutary in and of itself: the same image viewed by two different people, or even by the same person at different times in his or her life, can have radically different effects.

In your work on "content moderators" who clean up the web, you ask some fascinating questions, which I think raise another question: Is there such a thing as "cursed images" that are destructive to any human nervous system, regardless of the person's culture, personal history or state of mind. Aside from this particular case, are there any images or image sequences whose "media influence" on the population concerned can be said to be generally harmful? Intuitively, I can't help feeling there are.

Behind the question of "cursed images" and "toxic media", we must never lose sight of what I call "the infrastructure" within which everything that is posted, everything that affects us, is conditioned. In my book about the *mediarchy* I try to address the problem in these terms: the dissemination of images and affect, as well as

their value, good or bad, is conditioned by the "accidental megastructure", to use Benjamin Bratton's beautiful expression in *The Stack*.<sup>3</sup>

LH : *In issue 70 of the journal Multitudes, Hamid Ekbia and Bonnie Nardi define human labor that is concealed under the guise of automation as "heteromation". We think algorithms are performing all the repetitive tasks that are important for the proper economic functioning of the Internet, while in fact a significant number of these tasks are carried out by underpaid humans – such as the people who filter all types of content on social networks. This is a grueling and unbearable job, which is deliberately kept out of sight by the companies that run all the social networks. To my mind, what makes this problematic heteromation possible is technological imaginaries that nurture illusions of total automation. How do you think it has come to this?*

YC: I see several factors at the root of the imaginary illusion of automation, whose tricks Ekbia and Nardi denounce by introducing the term "heteromation". First of all, there's something magical about most of the machines that humans create to make things easier for us. Anthropologist Alfred Gell has pointed up the feedback loop between a certain "enchantment of technology" and "technologies of enchantment"<sup>4</sup>. The magic lies in the fact that machines, a product of our power of collective action, enable us to accomplish feats that would be impossible for us to achieve individually. I *know* that interconnected technological systems enable me to communicate with someone thousands of miles away, or see dead people move, but I don't really, concretely, *understand* how it's done. So there is a certain magic at the core of all technical equipment (as long as it works).

Above all, however, heteromation can be regarded as the result of a long-term movement in industrialization that outsources, whitewashes and conceals the social conditions through which human labor is placed at the service of consumer desires. Colonization exploited faraway resources, brutalizing faraway populations to accumulate wealth in the vicinity of European consumers. Colonial (purportedly "post-colonial") globalization is now outsourcing industrial and clerical work to outlying regions whose workforce are paid lower wages and exploited at will.

The name Mechanical Turk that Amazon has cynically picked for its explicit heteromation system refers to a special attraction at late 18<sup>th</sup>-century funfairs. Spectators were (already!) invited to play chess against a machine to see whether artificial intelligence could compete with human intelligence. Actually, however, there was a man hidden inside the machine to operate it from within and play on the machine's behalf. Amazon now ironically harks back to this funfair attraction to brand a mode of production in which any of us (rich folks) can post jobs that will be carried out by self-employed workers somewhere on the planet, who have no job security and are often destitute, for rock-bottom wages that are driven down by putting everyone in competition with the most desperate bidders.

There is some black humor in Amazon's not even bothering to hide the head of the Turk slaving away inside the machine. Mechanical Turk users know that it's human beings toiling somewhere far away. But the same logic often lies concealed behind so-called "wonders of artificial intelligence". Thousands of hirelings around

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<sup>3</sup> Benjamin Bratton. *The Stack: On Software and Sovereignty* (MIT Press, 2016).

<sup>4</sup> Alfred Gell. "The Technology of Enchantment and the Enchantment of Technology". Jeremy Coote, Anthony Shelton (Eds.). *Anthropology, Art and Aesthetics* (Clarendon Press, 1993), 40–63.

the world are paid to perform tasks that are sold to us as automated services or to provide the data, the user names, the tags, that will enable the machines to carry out their "automatic" work.

Here, again, these realities cut both ways. It would be absurd to demonize automation processes or to deny that they exist and have obvious advantages. The important thing is not to remain oblivious to the realities of heteromation – in this case, the remote human labor concealed under the glossy guise of automation, which is touted for promotional purposes as a liberating new development.

“Content moderators” are a case in point. Most of us, in the dominant nations, tend to believe that our images as well as our spam are filtered by increasingly powerful algorithms. To bring to light the very existence and working conditions of the net scrubbers toiling behind the scenes, covert investigations need to be carried out in Manila and New Delhi, investigations which, however, are hampered by all the confidentiality requirements the companies impose on their employees. It’s not very hard to imagine a world in which this type of employment is not subject to any such law of secrecy. The mere fact that so many measures are taken to make sure the Turk is securely imprisoned inside his machine, gagged so he can’t answer journalists who come to look into his work, gives cause for the greatest concern.

LH : *I use the term "cursed" image to refer to this line of work because viewing such a violent image can "propel" us into inconceivable realities. An unbearable image carries a curse in the sense of "rotting" the soul. How do you see this metaphor, does it seem right to you?*

YC: The idea of this curse seems really important to me, but I would take a slightly different angle. In talking about media content I employ the term “affectivity”, which is more generic than "images", since content can just as well be texts or sounds rather than images proper. But I use “affectivity” primarily to stress that these media *affect* us in the double sense of *transforming* us and engendering *affect* in us (i.e. emotions, passions, desires, fears, fantasies etc.). It seems to me essential to start by denouncing the poverty of and the basic illusion underlying the vocabulary of "information" generally cultivated by the "information and communication sciences". Digital images on the web, like photographs printed in newspapers or modulated sounds transmitted by an antenna, can very well be characterized in terms of information. Shannon and Weaver, the fathers of information theory, sought to quantify the flow of materialized data through telephone wires – and, of course, it’s essential to understand communication in these narrowly materialistic, electrochemical terms of energy and infrastructures as well.

But we must always bear in mind that no "communication" takes place unless human attention is paid at the receiving end, a reception that does not merely involve a simple passive process of mechanical impression (like paper that receives ink printouts or pixels on a screen that receive information about color), but is a form of animate activity. Hardware and software are by no means sufficient to produce a communication circuit: what gives value to the whole process is the presence of what’s known as *wetware* (i.e. our nervous, animate and animating systems).

That said, it’s important to distinguish three things that are closely interrelated, but conceptually irreducible to one another. On the one hand, there is *information*, which is what circulates in mechanical, chemical, electronic form through communication channels. Before and after the passage through the media channel, there is *signification* ("meaning"), which is what humans feel the need to

communicate regarding their existential experiences. While an engineer or computer scientist may see pixels on a screen, the vast majority of us see images. These images convey meaning to us insofar as they "represent" something we have experienced in our off-screen lives. The same goes for words, in which coders and linguists see letters or phonemes, whereas the rest of us understand messages therein.

However, these meanings can never be "neutral", decoded abstractly with no relation to the world. Viewing an image or reading a text involves actively constructing (existential) meaning out of (material) information – and this construction always involves "affect". It is always based on a certain "sensibility", which is at least minimally different (unique) for each of us, though always structured by shared (cultural) frames of reference. As beings sensitive to pleasure and pain, we cannot sensorially perceive images, sounds or words without feeling certain emotions, according to the pleasure or pain we associate with these images, sounds or words based on our past experiences or expectations for the future. (This is, incidentally, the fundamental difference between our animate intelligence and what is mistakenly termed "artificial intelligence"). In other words: meanings are always accompanied by, enveloped in, packed with affect. Which is why I insist on describing what circulates on communication media as *vectors of affect*: things that affect us (sensorially) while altering us by arousing certain affects in us.

Which brings us back to your question. Cursed images are images which convey affect that has destructive effects on subjectivities that are exposed to them. We could use the word "violence" to describe these destructive effects, but that wouldn't really get us anywhere. After all, what might deeply affect one person who is sensitive to the representation of certain experiences might, at least in theory, leave another person cold. The degree of perceived violence is a function of the degree of the perceiver's sensitivity, which can vary widely. Still, it seems reasonable to assume that very few of us can fail to be shocked by viewing a rape, torture or execution scene contextualized as a documentary recording.

When considering the work of content moderators, what we're talking about is being exposed – eight hours a day, six days a week – to cursed images, a considerable proportion of which are likely to produce traumatic effects. So these *cursed* images are actually *cursing* images, images that put a curse on those exposed to them. Our subjectivities are indeed unequally, but fundamentally, fragile. They feed on what affects them. It's hard to imagine a person exposed to a constant barrage of traumatic impressions without their "rotting his or her soul", as you put it so well. The question is: who are these sacrificed souls? To what common good are they sacrificed? And what are the ways to spare them this sacrifice?

LH : *The possibility of accessing problematic images thanks to the open medium of the Internet and this sacrificial function of content moderators who keep it working raises questions for me about the Internet and the utter naïveté of "sharing" online. How do you view the Internet, its workings and evolution, from its beginnings up to the present day?*

YC: Let's get back to what I've been trying to establish since the beginning of our conversation. Companies that market the circulation of affect on the Internet have a vested interest in affecting us as compellingly as possible to make sure of attracting our attention to their platform. But they also have a contrary interest in sparing us the sight of images that would be too distressing to us, or that would lay them open to legal action by the institutions responsible for shielding us from certain forms of

violence. So these companies have to clean up the web if they're to continue financially profiting from it.

This web cleansing is generally presented as being carried out by algorithms, which have indeed become very effective at ridding our mailboxes of millions of spams constantly besieging them. So it is by no means absurd for Internet users to believe that all this work is done automatically. As revealed by the small number of inquiries to address this issue, starting with yours, we are by and large misled by the mirage of heteromation. Behind the algorithms, there are actually hundreds of thousands of workers condemned by economic necessity to subjecting their subjectivity to the traumatic shock of viewing millions of cursed and cursing images.

The most interesting thing about this whole horrible reality is that algorithms cannot – or at least not yet – filter images discerningly enough to automatically eliminate cursed images. And this may well be the crux of their deepest curse. In the terms I employed earlier, it may be said that although hardware and software can do a terrific job of processing *information*, they still have a hard time predicting its *signification*, what that information might *mean* to humans, so they are (for the time being) by and large helpless when it comes to anticipating its *affective* impact. In other words, in our current state of machinization, it is still necessary to expose wetware to traumatizing images to find out what affects these images will engender in wetware. Hundreds of thousands of workers in Manila and New Delhi are reduced to this: serving as (post-)colonized wetware, who are paid low wages to absorb potential traumas that would be too costly to share with the wetware of the affluent world.

To understand the status and stakes of cursed images and content moderators, the most edifying analogy, in my opinion, is that of the "liquidators" tasked with containing radioactive emissions during accidents at nuclear power plants. Whether at Chernobyl or Fukushima, these human beings are sacrificed to the greater good of public safety by temporarily exposing them to near-lethal doses of radiation. Mutilating tasks are imposed on them by playing on their patriotism, on their moral or religious sense of sacrifice, or on the vulnerability of second-class populations. In any case, we are confronted with the collateral damage of human technology, and the only way we know of containing the damage is to condemn the life or health of a cursed segment of the world's population.

Images do indeed have a radioactivity of their own: some have the power to radiate a traumatizing energy that algorithmic filters fail to perceive, and that can only be established by effectively traumatizing human subjectivities. These images are indeed cursed, in that they seem to exact a toll of suffering and scarification. But what makes this scenario even more perverse than nuclear horrors is that it involves using individual subjectivities as human Geiger counters, as detectors called upon to feel – and *suffer* – the traumatizing radiation of cursed images.

Should the existence of such images, which reveal the potentially radioactive nature of what circulates on the web, make us question the ease with which Internet content is shared, as you suggest? Not necessarily. At the time of the Fukushima disaster, we published in *Multitudes* an appeal by a Japanese artist and intellectual to set up a "nuclear service", modelled on the universal military service that some countries like Switzerland still have. Every citizen would be required to spend six months of their lives decontaminating a site cursed by radiation. For one thing, this would be an egalitarian way of sharing the risk of radiation-induced disease rather than concentrating that risk among the poor and disadvantaged members of society. For another thing, and as a direct consequence, this would in all likelihood rapidly reduce the number of voters who support the construction of new nuclear reactors.

Something similar might be imagined for the processing of cursed images: to call on each and every one of us, in rich and poor countries alike, to spend a few weeks exposed to the affective impact of potentially radioactive images – with medical monitoring to help contain the psychological effects of such exposure. This would involve introducing a certain form of online "sharing": namely, sharing the radioactivity of cursed images, in the double sense of all of us collectively sharing it and dividing up the total mass of radioactivity into smaller portions, which become less harmful the less time we spend exposed to them. The real curse on irradiated content moderators may have less to do with the traumatizing nature of the images themselves than with the inequality of a set-up in which all the harm is foisted on a tiny part of the world's population.