

# Visualizing as Exorcism: Learning from Viruses

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## A growing phenomenon

The Web contains a great amount of pictures, simulations and other samples created thanks to the development of an increasingly variety of visualization technologies and methods.<sup>1</sup> Among others, websites such as Visual complexity,<sup>2</sup> (visualization of complex networks), companies such as ExVivo<sup>3</sup> or 3D Science<sup>4</sup> (scientific animation and medical imaging) or, finally, computer and security enterprises such as F-Secure<sup>5</sup> (visualization of malware and information flows) witnesses the diversity of techniques and methods, as well as technological devices used.

Thanks to these technologies, very small and subatomic particles, as well as dynamic agents, could now be displayed, shared and analyzed among colleagues or in a website. Computer and biological viruses constitute two important examples. While information visualization<sup>6</sup> is able to trace their trajectories and behaviors, scientific visualization<sup>7</sup> is able to provide them a concrete form.

Is visualization exclusively about providing better accuracy and efficiency of data collection and analysis? The above technologies should be definitely welcomed as a step forward in understanding and disseminating phenomena that normally come in the form of data only or that had previously defied visualization. However, could they not rather be read as forms of exorcism to the “unknown” and against the [real or constructed] hegemony of “fear”?

## Controlling the unknown

Virilio, quite explicitly, indicates how knowledge, in Western society, is perceived as the ultimate form of control. Knowing is the continuation and realization of the myth of the frontier, which he explodes beyond the boundaries of the humanly visible and the geographically defined territory of the physical (Virilio 2000). While reconfirming the centrality of sight as one of the major instruments of knowledge, the above comment establishes an indissoluble link between “not-knowing” and “fear”. If knowing is associated with control

and mastery over the unknown then, not-knowing is connected with uncertainty and evokes a sense of uneasiness and anxiety. As Robins, citing Canetti, claims: “...fear of being touched by the unknown, this is the fear that never goes away. It is with this fear that we must come properly to terms” (Canetti in Robins 1996: 12).

The sense of sight plays an important role: for Bauman, for instance, not-seeing or not being able to see far enough is one of the main factors that produce anxiety in human beings. In explaining why this could happen, Bauman recalls Lucien Febvre’s famous description of “the experience of living in the XVI century Europe” which he summarizes with just a few, telling, words: *peur toujours, peur partout* (Bauman 2006:2). Febvre had connected the ubiquitous presence of fear to darkness, “...which started just on the other side of the hut door and wrapped the world beyond the farm fence...”(4). While “...darkness is not the cause of danger, it is the natural habitat of uncertainty(5),” the place where anything could happen.

Seeing comes to the rescue of the absence of knowing and, as a result, becomes a necessary weapon against fear. It constitutes a reassuring materialization of a hypothetical threat that, before being visible, cannot be either concretely grasped or visually described. To use Virilio again, the condition of not knowing materializes as a continuously shifting horizon that causes fear, but, at the same time, can be conquered and turned into the known. Human explorations pushed the border of the unknown farther away, and increasingly powerful technological instruments such as microscopes and telescopes were devised to conquer the infinitely small and the extremely big or far away.

Given their subatomic size (which approximate invisibility), and their immaterial (a bundle of data) or aleatory nature (ungraspable dynamism and inseparability from host), viruses have deserved to be added to the category of the “unknown” and the “indeterminate”. In addition, the very companies and organizations that

produce and disseminate information about viruses seem to find it convenient to leave the above ideas unchanged and to even perpetuate them. However, to argue that this tendency is solely the product of a massively calculated and cynical operation of manipulation is to dismiss the very definition of fear and its causes.

For Massumi, fear is a reaction to a “quasi-cause” (Massumi 2005:35) that has not manifested yet. It corresponds to no concrete manifestation at all. Fear could be engendered from the memory of past events. However, past events do not provide any clue that would help tell what form the next threat will take or how it will materialize. One can only imagine the current threats as potential: sooner or later, in a time and space that is unknowable and impossible to predict (although hypotheses and predictions are countless), viruses, in the form of an emerging infectious disease, or as powerful and skillfully designed worms, will strike, with consequences that may (or may not) be disastrous.

Ultimately, different motivations and legitimate anxiety are equally weaved together to promote the same idea of viruses as dark entities, as unknown and mysterious agents. Thus, also the generation of fear all depends on the — purposely or not — constant maintenance and perpetuation of their indeterminacy and mystery.

## Imagining against fear

Despite being principally interpreted as threats and, as a result, being feared dearly, viruses represent a challenge to explore and to move the boundaries that delimit the frontier of the known. Paradoxically, the very difficulty to capture viruses in any static mode, to detect them under layers of coded material or to visualize them using the human eye, has unleashed an unprecedented urge to imagine them. The same elements that cause anxiety and fear have become the starting points for endless creative interventions, including newer interpretations, paradigms of representation, as well as new uses and applications.

Thus, the Visualization and mapping of all categories of viruses incorporate both the curiosity in imagining the unknown as well as the anxiety it engenders. On the one hand, “...image technologies are involved in the way we know, experience, feel about and respond to the world”(Robins 1996: 5). Seeking and finding new ways of knowing and seeing is “continuing the modern

struggle against the limitations of the actual world”(17). On the other hand, the technologies of visibility are also used as a protective screen that transcends, exorcises and separates humankind from the fearful chaos of the world, by making every object visible, yet maintaining it substantially virtual. In fact, objects are “made visible” through a process that gathers, interprets and represents information about them, thus “neutraliz(ing) and contain(ing) what provoked anxiety and distress”(20) and “transform(ing) the symbolic into the geometric” (McCormick at Al. 1987).

As a result, images, schemes and other visual representations of viruses cannot be merely interpreted as means of “explanation” and “illustration” as well as forms of “knowing,” and “controlling”. The considerable creative drive and variety that characterizes these practices suggests that we might interpret them as alternative means to both voice and liquidate a quite resilient demon of fear unleashed by their object of inquiry on the one hand, and by a particularly turbulent socio-political climate on the other.

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1 A periodic table of visualization methods [http://www.visual-literacy.org/periodic\\_table/periodic\\_table.html](http://www.visual-literacy.org/periodic_table/periodic_table.html)

2 <http://www.visualcomplexity.com>

3 <http://www.xvivo.net/>

4 <http://www.3dscience.com/>

5 This company is particularly interesting because it was the first to visualize information in computer viruses through a virological approach [http://www.f-secure.com/weblog/archives/f-secure\\_bagle-ag\\_visualization.mov](http://www.f-secure.com/weblog/archives/f-secure_bagle-ag_visualization.mov) as well as through an epidemiological approach <http://www.zdnet.com.au/video/soa/Antivirus-firm-gets-graphical-to-fight-malware/0,2000065477,22172991p,00.htm>

6 An easy definition can be found here <http://www.infovis.org/>

7 Definition <http://www.cc.gatech.edu/scvis/tutorial/tutorial.html>

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