

Orbis Pictus, Copy and Paste.

This paper is informed by my work as an artist using maps, ground-plans and anatomical images, and associatively mapping the relations between parts via installations, a process of embodying the diagrammatic. Experience of running the print programme at the RCA for almost 10 years informs my sense of the ways digitisation has shifted and expanded the field of print. Universities are investing in vast management databases, and digitising archives, often clearing out older technologies and documents to make way for them. But as the myths of the freedom of the web collapse around us, with the exposure of the narrow interests served, is our perpetual state of distraction and information-gathering distancing us from the world at large even as it connects us?

Vilém Flusser (1920-1991), at the advent of digital sharing, spoke of the need for artists and technologists to be interrupters of the flow of media.ⁱ It is this process of interruption, a slowing down and reshaping of attention, which particularly interests me. For this reason, I feel it is worth looking at a very early material database made by John Amos Comenius (1592-1670), a Moravian educator. I suggest that we now neglect the particular attention which he was trying to stimulate in 1657, even whilst aiming to advance it.

Orbis Sensualium Pictus was first published in Nuremberg in 1658. It took Comenius the last fourteen years of his life to prepare the 'whole for the pansophicall worke',ⁱⁱ and two years alone to assemble the 150 woodcut illustrations. The book is subtitled *a World of Things Obvious to the Senses Drawn in Pictures*, and it is a call to study the world as a whole system, preferably through direct contact with things observed or, where this is not possible, through the printed compendium as a substitute. Perhaps the first picture encyclopaedia,

'This same little book will serve to *stir up the Attention, which is to be fastened upon things, and ever to be sharpened more and more*; which is also a great matter: for the Senses (being the main guides of childhood, because therein the mind doth not as yet raise up it-self to an abstracted contemplation of things) every more seek their own objects, and if they be away, thy grow dull, and wry themselves hither and thither, out of weariness of themselves: but when their objects are present they grow merry, wax lively, and and willingly suffer themselves to be fastened upon them, till the thing be sufficiently discerned. This Book then will do a good piece of service in taking (especially flickering) Wits, and preparing them for deeper studies.'ⁱⁱⁱ

For Comenius the pictures were intended to train memory and act as a pleasurable lure, reinventing the tedious methods of teaching Latin in his time. His radical idea, that understanding and the acquisition of language comes best through an engagement with images and material processes, is key to my motivation to be an artist and to teach. Of course the complexity of that task and the problematics of any totalising classification system are very evident to us today.^{iv}

Comenius's work aimed to show the world as fashioned by nature, technology, play, faith, language and war. The senses are near the start, as it is through them we acquire knowledge. Between dials and looking-glasses comes the picture. Writing, paper, printing, the bookseller's shop, the book-binder, a book, a school, and the study follow, showing the making and distribution of the object held in the hand of the reader.^v

I am lucky to have an early copy of this hand-sized book: ink-stained and browning, with a protective spine of leather and a marbled paper cover, it has survived over 291 years. As I hold it in my ageing hands, I am aware that this book will outlast me if it finds a home, unlike the computer I type on which will be landfill in 10 years' time. The energy needed to access the book's information is the kinetic energy of my fingers turning pages, not the electrical energy needed to scan the images in order to share them with you. Reflections of light and dark, ink on paper, enter my eyes to be interpreted by the electrochemical energy of my brain's synapses and the understanding of my mind and experience. Despite our technologies we remain remarkably ignorant of how such

understanding is arrived at and increasingly distanced from the production of the things we consume. Each book page was printed twice: first with letterpress, and then a woodcut or engraved image was added. Early editions had many mismatched pages, ^{vi} unintentionally evidencing the constructed relation of names to things, a conundrum central to diagrams and much conceptual art. ^{vii} In its many re-printings and translations the elements were adapted and images freely updated according to local conditions.

In Jonathan Crary's *The Techniques of the Observer* (1990) ^{viii} he dissects the ways optical instruments of the early nineteenth century created the social conditions by which 'vision itself became a kind of discipline or mode of work'^{ix} key to the construction of modernity and Modernism. His most recent work proposes that our attention is increasingly co-opted by networked cultures,^x *24/7: Late Capitalism and the Ends of Sleep* explores how new tools and patterns of work further disrupt an already disembodied spectator. He describes Google CEO Dr. Eric Schmidt declaring that the 21st century would be the 'attention economy', and that the dominant global corporations would be those that succeed in maximising the number of 'eyeballs' they consistently engage and control.^{xi}

In this horrific scenario these disembodied eyes are trained as the body collapses into obesity and mania. What place has art in this accelerated visual economy? What place the temporality and frailty of the living body? Googling 'Head and Hand' (one of Comenius's titles), reveals a plethora of photographic images, of people clutching their heads in parodies of despair.

Linda Dalrymple Henderson's book *Duchamp in Context* ^{xii} exposes the relationship between scientific discoveries such as x-rays and tungsten light and the imagery and imagination in Duchamp's work, especially *The Large Glass* (1915-23). What is clear is the impact of printed diagrams of industrial processes and science experiments on the development of the work of Duchamp and his contemporaries. I speculate that the double framing of *The Large Glass* may be influenced by encounters with Diderot's Encyclopaedia (1751-17), where this device is common. Certainly one image of eye surgery, where a hand draws a blade across an eye, reads as a storyboard for the most famous frame of Luis Buñuel's film *Un Chien Andalou* (1929)^{xiii}. The technical prints of the eighteenth and nineteenth centuries become the collage and dream material for the twentieth. ^{xiv}

Contemporary artists such as Walid Raad, Ulrike Grosshardt, Pedro Reyes, Anne-Mie van Kerckhoven, Fred Wilson, Julie Mehretu, and Eva Kot'átková all engage critically with systems of education, mapping, framing and the diagram, drawing on archives and documents born of nineteenth-century models of visual thinking. The writings and visual work of Hito Steyerl have helped me in thinking about subjectivity and data bodies. Her essays '*In Free Fall*' and '*A Thing Like You and Me*'^{xv} refuse the split between virtual and material so often invoked and refuse the replacing of one thing by another as an inevitability or advance.

Contrasting Comenius's time with 2018, I turn to my own versions of 'head and hand'. These screen-captured scans exist as a flow of data interrupted by my curiosity and the clicking of a mouse so fast that images glitch, severing heads. I don't know how to classify or read them. They are an experiment, pitting scanner against body. The technical 'eye' of a 3D scanner is perhaps the ultimate world capture tool. ^{xvi} Artist and writer Chantal Faust describes making self-portraits on a flatbed scanner, a process whereby:

'The hand that operates the scanning machine supplants the ocular. It touches in order to see and in doing so captures a vision invisible to the human eye. In the case of scanned self-portraiture the eye is doubly defunct, blinded by the scanner and too close to gain any perspective on the scene'.^{xvii}

The scanner used to make my images was able to scan in 3D from a distance, I had no idea how it would capture an image. My colleague Hannah circled me with what looked like a large hairdryer. I entrusted the sweeping and capturing to her. The absolute indifference of the machine to difference, the way it treats flesh and light switch the same way intrigues and slightly scares me. Editing the images creates a dissociative sense of being turned into a hollow object constructed by a mesh of triangles.

With the advances in VR, fantasies of building and inhabiting parallel worlds are proliferating. In Steven Spielberg's film *Ready Player One* (2018)^{xviii} the meat-world has fallen into a state of dereliction. Only engagement through VR in the 'Oasis' offers any pleasure, echoing *Fahrenheit 451*, Ray Bradbury's dystopian novel about book burning and the control of populations through screens. What is a self in this uploaded world? As I work through my troubled relationship with the temporalities imposed by email and the datafication of imagination I savour Gilles Chatelet's work on diagrams. His phrase 'Diagrams are gestures inviting other gestures', gives a positive impetus to the idea of mathematical models fixing gestures in flight. Since they transcend time in their abstraction they 'avoid the dilemma of a substance'^{xix} and are open to endless reinterpretation. Having considered print as the first sharing platform, how does our contemporary excess of picture-like things (imagined as pixels, voxels and data clouds), and the speed with which we browse them, shape our understanding? What is the place for people and processes enriched by slower, more material ways of being and communicating evidenced in print studios? How do we make best use of our doubled worlds?

ⁱ Vilém Flusser, *Into the Universe of Technical Images* (Minneapolis, MN: Minnesota University Press, 2011), pp. 19-21 especially on the decoding of technical images.

ⁱⁱ John E Sadler, 'Introduction', in: *Orbis Sensualium Pictus [The Juvenile Library]*, (Oxford: Oxford University Press, 1968), p.61

ⁱⁱⁱ John Amos Comenius, *Orbis Sensualium Pictus*, ed. by J. Hoole (London, 1727), p.2-3

^{iv} see the abuse of pictures in intelligence testing in Stephen Jay Gould, *The Mismeasure of Man* (London: Pelican, 1984), p.211

^v Comenius also advocated encouraging children to draw the illustrations or from life 'to practise the nimbleness of the hand, which is good for many things'. For a contemporary description of hand/screen relations see Darian Leader, *Hands: What We Do with Them – and Why* (London: Penguin, 2016)

^{vi} Ibid.

^{vii} Ref artists such as Marcel Broodthaers and Susan Hiller in her Freud Museum Project. See also John Dixon Hunt, David Lomas, Michael Corris, *Art, Word and Image: 1000 Years of Visual/Textual Interaction* (London: Reaktion, 2009), for a visual and historically broad discussion of this relationship.

^{viii} Jonathan Crary, *Techniques of the Observer: on Vision and Modernity in the Nineteenth Century* (Cambridge, MA; London: The MIT Press, 1990)

^{ix} Ibid.

^x Jonathan Crary, *24/7: Late Capitalism and the Ends of Sleep* (London; Brooklyn, NY: Verso, 2013)

^{xi} *ibid* p.75

^{xii} Linda Dalrymple Thompson, *Duchamp in Context: Science and Technology in The Large Glass and Related Works* (Princeton, NJ: Princeton University Press, 1998)

^{xiii} *Un Chien Andalou*, dir. Luis Buñuel (1929)

^{xiv} For an in-depth look at scientific atlases and shifting parameters of veracity and truth, see Lorraine Daston and Peter Galison, *Objectivity* (New York, NY: Zone Books, 2010) and John Bender and Michael Marrinan, *The Culture of Diagram* (Stanford, CA: Stanford University Press, 2010).

^{xv} Hito Steyerl, 'A Thing Like You and Me', *e-flux journal* 15 (April 2010) Hito Steyerl, 'Free Fall', *e-flux journal* 24 (April 2011)

^{xvi} Artist Oliver Laric has made work opening up archives using file-shared scans of 19th-century, see at:

<https://www.newmuseum.org/exhibitions/view/oliver-laric-lincoln-3d-scans-1> (accessed 21.04.2018)

^{xvii} Chantal Faust, 'The Eye of the Scanner', in *The Negligent Eye*, ed. Bryan Biggs (Liverpool: Bluecoat Press, 2014) p3.

^{xviii} *Ready Steady Player*, dir. Steven Spielberg (2018)

^{xix} Gilles Chatelet, 'Figuring Space, Philosophy Mathematics and Physics', *Science and Philosophy*, vol 8, p.11.