Trevor Paglen, *From "Apple" to "Anomaly" (Pictures and Labels)*

In his essay *Art in the Age of Machine Intelligence* (2017), the leader of Google's Seattle AI group and founder of Artists and Machine Intelligence, Blaise Aguera y Arcas considers the complex and ever-evolving relationship between art and technological possibilities. It follows that a parallel is drawn between the advent of the photographic medium in the nineteenth century and the current revolution in machine intelligence as a means of profoundly impacting its reproduction and production.

For Aguera y Arcas the innovation afforded by artificial intelligence, as either a new medium or partner, is one that will no doubt affect our understanding and perception of external reality to the extent of transforming society in ways that are unimaginable from our current vantage point. As conceptual borders between humans and non-humans become increasingly blurred, he highlights the idea of art generated by 'hybrid beings' and how machines extend human thought and imagination: "In the case of the software, this processing relies on norms and aesthetic judgments on the part of software engineers, so they are also unacknowledged collaborators in the image-making. There's no such thing as a natural image; perhaps, too, there's nothing especially artificial about the camera."

This may serve as a useful coda to approach the latest body of work from Trevor Paglen, *From "Apple" to "Anomaly" (Pictures and Labels)*, now on display at Barbican Art Gallery in London from 26 September 2019 until 16 February 2020. Paglen has undertaken the 32nd commission for The Curve as part of a year-long programme entitled *Life Rewired*, which explores changing aspects of human identity in an age in which we are augmented by instruments and technologies. We have seen some surprising experiments from artists featured across the season harnessing and critiquing phenomena such as artificial intelligence, big data, algorithms and virtual reality.

For the exhibition, Paglen has centred his exploration on the manner artificial intelligence networks have been taught to see the world as a result of being fed vast amounts of visual information by engineers that are sorted into various groupings known as 'training sets'. Typically, supervised training sets are collections of known data made up of images, sound and video libraries that train computers to recognise objects or other domain-specific knowledge, such as what humans look like, for example. As the media and computational vision has developed in tandem, machines become autonomous systems that intervene and are coercive in the world, and thus inevitably elements of subjectivity and bias within the research community becomes particularly apparent within such statistical observations. An investigation into these secret agendas, politics, prejudices and epistemological assumptions, as well as their real-world implications, is precisely what Paglen is intent on probing.

"Machine-seeing-for-machines is a ubiquitous phenomenon," Paglen has commented, "encompassing everything from facial-recognition systems conducting automated biometric surveillance at airports to department stores intercepting customers' mobile phone pings to create intricate maps of

movements through the aisles. But all this seeing, all of these images, are essentially invisible to human eyes. These images aren't meant for us; they're meant to do things in the world; human eyes aren't in the loop."

Some 30,000 individually printed and delicately pinned photographs are installed across the entire surface of the curved wall in the Barbican, forming a complex mosaic organised according to more than 200 categories selected by the artist. While these are labelled so that gallery visitors can identify the respective classifications no further textual explanation as to the reasons for the individual choices have been given. To understand the lineage of this body of work it involves a brief outline of Paglen's source for the images – ImageNet, a publically available dataset consisting of annotated photographs intended for computer vision research and understanding algorithms. There are more than 14 million images in the dataset with over 21,000 categories or 'classes' and 1 million that have bounding box annotations that identify objects within the images. These were culled directly from the Internet by academics made up from a consortium of American universities, including Princeton and Stanford, and, curiously, the ImageNet project does not contain the copyright for the material.

The specific appeal to Paglen however lies in the politics and practices of categorisation. For the most part, these are benign, as is the case with 'strawberry' or 'orange', while other classifications take on more untoward implications such as those filed under 'debtors', 'alcoholics' or 'unusual person'. Evidently, the act of programming is also one of making judgments. And although the images may elude artistic signature – since it is the language that speaks and not the authors within this empirical mass of photographs – the groupings nonetheless reflect an inherent lack of impartiality towards their subjects. As Aguera y Arcas and countless others before have reminded us, technology is never neutral. These thoughts press harder even when we consider the significance of the two specific categories used with the exhibition's title; apple and anomaly – one, a strict noun, the other relational, thus its connotations are potentially open to misdirection. [image 1 - page x].

As a proposition *From "Apple" to "Anomaly" (Pictures and Labels)* invites the viewer to consider that the world of images has grown distanced from human eyes as machines have been trained to see without us. Paglen often refers to this new state of machine-to-machine image-making as 'invisible images', in light of the fact that this form of vision is "inherently inaccessible to the human eyes." The artist has also on occasion posited that we are perhaps operating within a surrealist moment for images, similar to the semiotics that come to bear in Rene Magritte's *Ceci n'est pas une pomme*. Hence, it's no surprise that the famed painting serves as the subject in one of Paglen's individual works, *The Treachery of Image Recognition*, 2019 [image 2 - page x].

Throughout his career, Paglen has developed a long-standing interest around issues of surveillance, CIA black sites, drone warfare, the essence and apparatus of America's security systems, and much more. His is a practice broadly underpinned by a querying of the coterminous relationship between vision, power and technology. Paglen's work has been widely-exhibited at

institutions internationally, ranging from The Metropolitan Museum of Art, New York, and Tate Modern, London, to Taipei Biennial 2008 and Istanbul Biennial 2009. Among the many awards and accolades, Paglen has been the recipient of the prestigious McCarthy Fellowship in 2017 and Deutsche Börse Photography Foundation Prize 2018. Now based in Berlin, he remains one of the most urgent and higher-order chroniclers of our times, seeing realities that lay beyond what is evident and the forces that are at play more clearly. This exhibition is testament to a highly-original artist, always on the move, always enquiring, re-inscribing what it means to learn to see, all while keeping a critical and more responsible relationship to the world, to what we understand of the world of images.