Rocket Science, Joy Garnett at Debs & Co., New York, NY

PANSPECTRON

Manuel De Landa New York, 2001

"The camp was to the rather shameful art of surveillance what the dark room was to the great science of optics". [1]
Michel Foucault.

The science of optics and the art of surveillance developed for a while following separate paths. As with most branches of physics the former developed through the interaction of theory and experiment, of mathematical models of the behavior of light and technological devices for the production of images. The latter, on the other hand, evolved in the more concrete realm of military practice as a means to recruit light and press it into service as a key component of a system of discipline through observation. First the military camp, then a series of more permanent architectural structures, prisons, schools, factories, barracks and hospitals, became veritable "behavioral microscopes", where a precise use of light, and an analytical disposition of bodies, allowed the behavior of human beings to be studied and controlled. Foucault uses the name of a famous prison project, the Panopticon, as a general term to refer to these behavioral microscopes, stressing the fact that it has multiple applications: "it serves to reform prisoners, but also to treat patients, to instruct schoolchildren, to confine the insane, to supervise workers, to put beggars and idlers to work." [2]

The different embodiments of the Panopticon were meant to produce images only in the phenomenal field of the observers, whether these were drill sergeants, shop foreman, teachers or doctors. In this regard, with the exception of the recently added video surveillance cameras, these buildings did not contribute much to the ever expanding increase in the population of permanent images. Military practice, however, had another dimension which did intensify this proliferation. This other dimension involved not the need to control the behavior of soldiers in peace time but the need to study the behavior of enemy forces during war time, and affected the evolution not of architectural structures but of flying platforms and imaging devices.

This other evolutionary line of development may be said to have begun in the late eighteenth century with the use of balloons to position sketch artists above the battlefield, as was performed by Napoleonic armies at the siege of Mantua, and continued later on in the American Civil War and the Franco-Prussian War of 1870-1871. During World War I, the use of airplanes and of photographic cameras became standard practice, and techniques for the comparative analysis of the resulting images opened up a new chapter in the development of the art of surveillance. As one author puts it, these techniques "involved comparing pictures of the same target that were taken on successive days or weeks in order to spot such changes as troop buildups, the laying of railroad tracks, and other indications of enemy intentions…Aerial reconnaissance had assumed mammoth proportions by the autumn of 1918. During the Meuse-Argonne offensive that September, for example, fifty six thousand aerial reconnaissance prints were delivered to various U.S. army units within a four-day period. The total number of prints produced between July 1, 1918, and Armistice Day the following November 11 came to 1.3 million." [3]

This proliferation of images became even more intense during World War II, the first armed conflict in which science became directly connected to the war machine, and then during the

Cold War as the flying platform evolved into the spy satellite and imaging devices broke away from their traditional confinement to the optical region of the electromagnetic spectrum. Some imaging devices, X-Ray machines, had already taken advantage of the nineteenth century discovery that visible light constitutes but a small portion of this spectrum. Unlike visible light, X-Rays have a very short wavelength (the distance between the peaks of successive waves) a property which allows them to penetrate most objects, and thus, to create images of their interior structure. At the opposite end of the spectrum, radio waves can reach wavelengths of one kilometer, a property that is exploited by radio telescopes to image distant objects.

But for the purposes of military imaging spectral regions close to the optical one, particularly infrared radiation, are particularly valuable. Unlike ordinary cameras, which capture visible radiation which is *bounced* off objects, infrared cameras can detect radiation which is *emitted* by objects in the form of heat, converting thermal differences into a visual representation of a scene. This allows the production of images at night, as objects "illuminate" themselves by their own emitted heat. Furthermore, using several sensors, each picking a different portion of the spectrum (in a technique called "multi-spectral scanning"), infrared data may be combined with other data to defeat camouflage, in effect, imaging the very materials an object is made of by the way each of them interacts with radiation: "Plywood painted green might look like grass in a standard color photograph shot from high altitude, but multi-spectral scanning imagery would show it to be what it was: a coat of paint. By the same token [it can] differentiate between aluminum, steel and titanium so that analysts can determine the composition of Soviet aircraft…". [4]

A different use of the wider spectrum is to convert one type of radiation into another in which certain operations may be performed. For example, visible light may be converted into electricity, intensified and multiplied in this electrical form, then reconverted back to greatly amplified light. In this way a small number of particles of light bouncing off an object at night, a number which by itself would be unable to produce an image, may be used to create a much larger number and generate the characteristic green images of night-vision goggles. Both night-vision devices as well as infrared imaging devices are now used in a civilian context by law enforcement agents, despite the fact that the legitimacy of this usage is still controversial, as shown by a recent Supreme Court debate on the constitutionality of using infrared sensor to detect indoor drug-growing. Whatever the outcome of this debate it seems clear that today the devices developed for war time are starting to influence the art of surveillance as applied in peace time. To this extent, we may be moving from the old Panopticon to a wider Panspectron.

It is this rapidly expanding world of panspectral images that Joy Garnett has made her home. Whether one considers her oil paintings of night vision images, her renderings of the images which smart weapons themselves "see", or merely her portrayals of atomic bomb explosions or brightly lit military accidents, she seems to have an intense relation with radiation itself, no matter what portion of the spectrum it comes from. In a world witnessing a veritable population explosion of imagery it is reassuring that some of our most talented artists have decided to immerse themselves in this new jungle, bringing a critical gaze to bear on its contents.

References:
1) Michel Foucault. Discipline and Punish. (New York: Vintage Books, 1979). Page 172.
2) Ibid. Page 205.
3) William E. Burrows. Deep Black: Space Espionage and National Security. (New York: Random House, 1986). Pages 34-36.
4) Ibid. Page 233.