

## "I have seen my death" by Paul Wombell

They are moments in life when you become more aware and sensitive to the world around you. That moment came to the photographer Reiner Riedler on seeing his newborn son in hospital for the first-time. He became acutely aware of the human life that he was now responsible for, but also of the array of machines that are now part of the hospital experience. This was the motivation to make this photographic project - The Lifesaving Machines - that portrays the appliances, instruments and devices that are now central to modern medicine.

The exploration of the human body by technological instruments started at the beginning of the nineteenth century with the invention of the endoscopy to look inside the canals and cavities of the body. Later would come the stethoscope to listen to the sounds of the body and then the ophthalmoscope to look inside the retina of the eye. From these instruments more sophisticated instruments were developed that used a wider range of the electromagnetic spectrum rather than visible light. By the end of the 19<sup>th</sup> century Wilhelm Röntgen had accidentally discovered X-rays and made the first X-ray image on a photographic plate that depicted the bones in the hand of his wife Anna Bertha Ludwig. It is reported that when she saw the photograph Anna said, "I have seen my death." Now at the beginning of the 21<sup>st</sup> century X-rays have been joined with other machines that can see even further into the interior of the body, that can predict death, but also machines that externalize the organs of a living body and assist in prolonging life.

Riedler's chosen pictorial style, using a dark background to isolate each medical machine from their usual environment of the hospital ward and the operating theatre emphasizes the materiality of each machine. We see displayed computed tomography scanners, heart valves, kidney dialysis machines, pacemakers and ventilators each with their unique persona. Some of these machines are in many respects cameras, they look, they monitor and they investigate into places that are impossible to see without the aid of technological devices. They really can see into the soul and seek out the secrets hidden within our bodies. This examination of the interior of the human body is comparable to the exploration of outer space; both extend human vision with the use of 'seeing machines' that travel to inhospitable places. And that these medical machines look similar to space probes should not be surprising as their job is to orbit the planet human.

For the novice who has little knowledge of medicine these machines look slightly sinister and uncanny. This is emphasized even more in Riedler's photographs by the absent of any recognizable living human presence, we see no doctors, nurses or patients. This leave a space for our imagination, how does the body connect to these machines, do we fully understand what these machines do and do we have control over their operations? But at the same time they are strangely wonderful objects, not only wonderful in the sense that they save human lives, but also aesthetically, with the shapes of the tubes, wires, pumps and the integrated circuits. They feel like they have a life of their own.

Though at times some of these machines seem to have recognizable human characteristics such as faces, arms and legs. This anthropomorphism - of attributing human characteristics to inanimate objects - is easy to perform because these objects made of plastic and metal are intimately connected to fleshy bodily parts of human muscle, blood and tissues and are in many respects replicates of human life. When they are turned on they also have a voice. They speak in short sentences of electronic blips that are graphically displayed on monitors that can be read as a face. From these sounds and signs the doctors and nurses interact with the body by the way of the machine as the patient moves along the pathway of care.

The differences between the human and the inanimate virtually collapse altogether with the appearance of anatomical models and humanoid robots. These forms of human representation perform the role of the patient are used for medical training and research. The anatomical models are a form of mapping of the human body; this can be called ontography, the exploration of how different parts interact together in the study of the physiology and different systems of the human body. Some of these models can be taken apart, or what is described in product design as 'teardown', the dismantling of complex objects to see how they function and interconnect together. Humanoid robots take human representation further; they can simulate breathing, pulse rates, emotion, heartbeats and comas. They can switch roles; from aiding care they can also administer care. More complex computational based humanoid robots can take blood tests, collect diagnostic data and perform surgical operations. NASA has The Robonaut 2, a humanoid robot working on International Space Station that is being tested to perform medical tasks in space. Robots have become doctors and nurses.

The photographs in this book speak to something quite profound taking place in advanced western societies, the desire to manage pain and to prolong life. This is creating a distance between the doctor and patient relationship that is mediated by technology that can collect data on the unhealthy body for future research. The aim of this research is to control the nature of the human body and ultimately to deny death. This can be seen in two ways, extending the longevity of individual life beyond 100 years of age and the development of machine life.

Immortality once the prerogative of the Gods is now becoming the business of large corporations. Bill Maris the CEO of Google Ventures stated in 2015 that, "If you ask me today, is it possible to live to be 500? The answer is yes," Google Ventures is the investments arm of Alphabet, the parent company of all the Google companies that also includes Calico (California Life Company). Formed in 2013, and supported with money from Google Ventures, Calico aims is to reverse engineer the biology that controls lifespan and enable people to lead longer and healthier lives. Time magazine put this more succinctly "Calico hopes to cure death." Larry Page the CEO of Alphabet and one of the key initiators of the Calico project predicts that by unitizing new advances in technology it will be possible to solve the problem of ageing in the future. Page has also appointed Ray Kurzweil the computer scientist and futurist to be an adviser to Calico and work as director of engineering for Google. Kurzweil predicts that we are only 15 years

away from a tipping point in longevity where we shall add more than a year every year to your life expectancy.

For someone born during the last ten years in any western society would expect to live until they are 100 years of age. With this predication Riedler's son - now named Viktor - could well live beyond 2110, however with further advances in medical technology and with the assistance of Calico it could be 2200 or even 2600, half way through this millennium! This development in the longevity of the human species due to medical technology is rarely discussed, never mind considering the wider implications for other forms of life on this planet and the resources required to support human life beyond 'three score years and ten'. Though this book is ostensibly about medical machines, it might be more appropriate to say that *The Lifesaving Machines* is about Viktor's future and humankind in general, wherever this might be, either on this planet or in outer space.

Reiner Riedler's photographic project laid out in this book implies that another form of life is emerging. From the wires, plastic and metal more recognizable prosthetics features are seen; vertebral columns, eyes, heads, hands, legs and arms come into view. From these different components a fully functioning mechanical life is being fabricated. Waiting in the shadows is a different notion of the body based on another concept of life, a body without pain.

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