Abbott's absolutes

Berenice Abbott was fascinated by the challenge of capturing on film motion too rapid for the human eye. Her scientific photography has given a new meaning to the term 'portraiture'.

Martin Kemp

The 'objective eye' of the camera and the impersonal traces of light on a photographic emulsion were hailed as powerful tools in scientific recording virtually from the public announcements of the new medium in France and England in 1839. In that very year William Henry Fox Talbot wrote to the astronomer and physicist Sir John Herschel that he had "great hopes" for photographs taken with his "Solar Microscope... as for instance in copying the minute forms of crystallisation which are so complicated as almost to defy the pencil".

Not the least of the potentialities of the artificial eye has been the capturing of motion too rapid for human sight, most famously as in the revelations of a horse's gait by Eadweard Muybridge in 1878. No one has explored these potentialities more potently than the American photographer Berenice Abbott (1898–1991).

In the 1930s Abbott was associated with a group of 'objectivist' photographers who looked to the philosopher Alfred North Whitehead's *Science and the Modern World* (1925) and *Process and Reality* (1929) in their attempt to define a remorseless form of impersonal realism which revealed the 'absolute' as manifested in the appearance of things.

The tone of the endeavour is conveyed by her remarks in 1929 on Eugène Atget, the devoted photographer of a depopled Paris: "As an artist, he saw abstractly, and I believe he succeeded in making us see what he saw." Best known for her portraits and cityscapes, Abbott's most innovative work involved the reform of the techniques, communicative values and aesthetics of the photography of scientific phenomena.

She served as photographic editor of *Science Illustrated* and collaborated on two high-school science books, *Physics* and *Physics: Laboratory Guide*. Using a projection system she christened 'Supersight', she at first concentrated on the kinds of traditional subjects that directly revealed their structure to the lens, such as insects' wings and soap bubbles.

During the 1940s and 1950s she invented devices that could capture invisible motions, not least the behaviour of waves and the paths of fast-moving bodies, which were so engaging contemporary physicists.

She was particularly drawn to some of the classic problems of Galilean dynamics, such

Abbott's *Transformation of Energy*, 1958–60 (top) and *Wave Interference Pattern*, 1950s.

as the path of a projectile fired upwards from a moving platform and the response of a pendulum to gravitation. Her exploitation of high-speed flash and dark backgrounds allowed the phenomena to 'draw' their own diagrams in a way that surpassed in vividness and beauty any conventional diagrammatic representation.

Her aim was neither to act as a mere documenter of phenomena nor to exploit scientific photography for its decorative potential. Rather, she sought to use those properties of photography as a visual medium that distinguished it from painting

and hand-made graphics to speak eloquently of the transformation of energy in terms of invariable structures embedded in phenomena.

The spirit of her endeavour is nicely captured by the heading to a two-page spread about her work in the *New York Times Magazine* in 1959, "Portraits of Natural Laws". Like any good portraitist, Abbott knew that a good likeness makes huge technical and aesthetic demands on the artist. □

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