

Workshop

WHAT WORLD DO NANOIMAGES AFFORD?

The workshop opens with short presentations by collaborators to the project and co-organizers of this workshop, including Alfred Nordmann (Darmstadt), Rasmus Slaatelid (Bergen), Astrid Schwarz (Basel), Arie Rip (Twente), Colin Milburn (Davis). This workshop is part of a research project initiated at the Centre for the Study of the Sciences and the Humanities in Bergen, Norway.

Abstract

In recent years, visualization-practices in science and technology have attracted considerable attention not only by historians of science but also by cultural studies, art history, or *Bildwissenschaft*. Some of this attention is focused on the elusive ideal of representational veracity and the role of conventions, visual culture, and pictorial traditions. From the viewpoint of sociology and history of visualization, others have studied the practices that make something visible and representative, in short, the production of reality (Lynch 2006). Regarding the images obtained from scanning tunnelling microscopy and other popular as well as intra-scientific images of nanoscale phenomena, it is a kind of commonplace that these suggest a familiar world. Despite the rhetoric of strangeness and novelty that surrounds nanotechnology, these images affirm first and foremost that the nanocosm is a place where human engineering can take place – it is a world that awaits to be colonized and, in a sense, inhabited by humans.

The aim of the workshop is to go beyond this commonplace. It is not enough to note that visualizations conjure a familiar world but to ask what notions of familiarity are evoked by these visualizations. To make an obvious point: many nano-images present vaguely familiar depopulated landscapes, hardly any refer to the familiar experience of urban living. In other words, the workshop asks what is the world that nanoimages afford?

The notion of affordances was put forward by psychologist James J. Gibson in his book *The Ecological Approach to Visual Perception*: "The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill" (Gibson 1986: 127). On the one hand, the notion of affordance is directed against cognitivist accounts of perception. Perceptions are not the product of cognitive processes (construction, interpretation), but instead they are immediate and irresistible. On the other hand, this immediacy and irresistibility is a feature of the environment: "An important fact about the affordances of the environment is that they are in a sense objective, real, and physical, unlike values and meanings, which are often supposed to be subjective, phenomenal and mental. But, actually, an affordance is neither an objective property nor a subjective property; or it is both if you like. An affordance cuts across the dichotomy of subjective-objective and helps us to understand its inadequacy. It is equally a fact of the environment and a fact of behaviour. It is both physical and psychical, yet neither. An affordance points both ways, to the environment and to the observer" (ibid. 129).

By no means uncontroversial, Gibson's proposal was taken up by art historian Ernst Gombrich, by design theorist Don Norman, by the philosopher of chemistry and scientific experimentation Rom Harré. "Affordance" is therefore a promising explanatory concept for understanding the irresistible "pull" of many nanoimages that draw their viewers into a world that is subject to human design. For a range of images we can ask what they suggest in terms of action, interaction, immersion, or use. Do they evoke a habitable world and what would it take to work there, to exploit its resources, or even to live there?