Failure and the Power of Wonder

While scientific, economic, and architectural optimism seem to go hand in hand at the Holmdel laboratories, history has shown that in none of these areas things went according to plan. At Holmdel the problems still remained large and, despite its size and considerable staff, few important inventions emerged from the laboratory. From a sociology of science perspective, this is only natural, as scientific progress does not move along straight lines. But instead of continuing on that sociological path, for example with Thomas Kuhn (cf. Kuhn 2012), it is worthwhile for the scope of a book that is concerned with the independence of material actors to start at the material basis of research. This will also prove to be instructive for the architectural discourse.

Philosophical materialism has had a significant influence on science and technology studies; in particular *new materialism*, which emerged at the beginning of the 21st century and "positions itself as a new paradigm in social and cultural studies" (Folkers 2013, p. 16). In its application to the study of scientific progress, new materialism makes us attentive to the fact that science and technology studies have for a long time regarded matter mostly as something that can be appropriated, that is readily at hand for the scientific process, and that can ultimately be dominated through the instruments of science and technology. What is lost here is not just the disturbing potential of matter but also the "power of wonder" (Stengers 2011). The new materialism movement, e.g. speculative constructivism, brings this power of wonder to the discussion in science and technology studies in that it does not just look at the current state of the world, what has been made, but also at what could happen in the future. The speculative constructivists' main argument is that matter is not passive but de-

veloping. They start with the "immanent, ontogenetic, self-organizing potentials" (Folkers 2013, p. 24) of matter.

With the aforementioned Martin Heidegger and his etymological reconstruction of the word "thing" we have to take into account another aspect of the material world, namely that things do not appear in isolation, or on the scientist's workbench. Heidegger spent a great deal of etymological effort on introducing the term "Ding," thing, in order to make his point, namely that thing – stemming from the Old-Norse – is not a mere object but an assembly. A thing, according to Heidegger, assembles earth and heaven, the gods and the mortals in what he calls the "Geviert", the fourfold, i.e. a (metaphorical) space with four sides.

Jane Bennett, a new materialist, likewise argues for the perception of things as assemblages. In her book *Vibrant Matter*, she particularly looks at collections of things she finds in trash and debris. There she argues, the individual character of things, which refuses human intention, shines through (cf. ibid., p. 27). Her ideas, while resonating with the philosophies of Theodor W. Adorno and Bruno Latour, challenge modern conceptions of the subject. "The philosophical project of naming where subjectivity begins and ends is too often bound up with fantasies of a human uniqueness in the eyes of God, of escape from materiality, or of mastery of nature" (Bennett 2010, p. ix). But Bennet's book is also a political endeavour in that the idea of matter as animated might potentially change how humans respond to issues:

> [h]ow, for example, would patterns of consumption change if we faced not litter, rubbish, trash, or "the recycling," but an accumulating pile of lively and potentially dangerous matter? […] What difference would it make to the course of energy policy were electricity to be figured not simply as a resource, commodity, or instrumentality but also and more radically as an "actant"? (ibid., p. viii)

Her aim is clear in this respect. A more rich description of life and a more sensitive approach towards the world as "the image of dead or thoroughly instrumentalized matter feeds human hubris and our earth-destroying fantasies of conquest and consumption" (ibid., p. ix). If humans understand themselves as part of a network or "flow" of materialities, then they would also refrain from fantasies of omnipotence or at least replace the sense of boldness that

was prevalent during the last century with a more modest assessment of their capabilities.

Figure 12: Cornelia Parker, Neither From nor Towards (1992)[1]

> Cornelia Parker's artwork can be found in the *Arts Council Collection*. It was also used as the cover for Jane Bennett's *Vibrant Matter*.

One problem, however, remains both for Jane Bennett and for others attempting to get to the heart of things: It is an endeavour by humans, who, while cultivating a "patient, sensory attentiveness to nonhuman forces operating outside and inside the human body," (ibid., p. xiv) still speak and write in a human voice. But scientific writing can only begin to grasp the concept of a richly networked world. It seems then that the understanding for the material world lies on the threshold of language.

The Unspeakable in the Philosophy and Poetry of Jean Wahl

In his article for the *Encyclopédie Française* the French philosopher Jean Wahl tries to grasp the transcendental potential of materiality. Three aspects from Wahl's text are taken here as attempts to introduce a more rich way to talk about materiality than classical empiricism, which "presents us with flat things that are exterior to one another and exterior to ourselves" (Wahl 2016, pp. 255–256), offers and which also holds up to be as "rigorous [difficile]" as other philosophical strands, e.g. modern rationalism.

The first aspect refers to Heidegger's etymology of a thing as an assembly. Wahl is also strongly influenced by the philosophy of science of Léon Brunschvicg, who "had the merit of showing that in science there is an activity of relating; these relations become incessantly subtler; and the universe is but an always-incomplete ensemble of this network of relations" (ibid., p. 260). Wahl further radicalises this view in that he forbids himself even semantically to think of the world as consisting of discrete elements.

---

1 Parker's installation of suspended bricks from eroded houses that fell off the white cliffs of Dover was used as the cover image for Bennett's book.

> [W]hat is given to us primordially is an ensemble. There is in fact no word that could be satisfying here, since ideas like synthesis and even ensemble presuppose primordially separate elements that would then be gathered together (Wahl 2016, p. 259).

The second aspect which builds on this view of the world as a whole is the question of how we then perceive this world. Wahl here introduces the term "felt substances" to differentiate his view from the idealists' position and their concept of substances. Instead "we will have felt substances that can no longer be expressed in distinct attributes but rather gleam at the heart of appearances and are as ineffable as classical substances are effable" (ibid., p. 258). The concept of *feeling* also encompasses the idea of connectedness with the whole. The artistic experience hints at the fact that one is not simply surrounded by things one can abstractly *conceive* but that one *perceives* oneself as part of a world of things.

> A painting we are marveling at does not lie there before us like an external object; we are not merely in front of the painting. The communication between the painting and us is not simple presence of the one to the other. We are beyond the alternative between the "in front of" and the "in". […] The world as it is given to us is made not of ideas and sensations, but of things (ibid., p. 262).

To adequately describe this relation Wahl resorts not to the philosophical treatise but to the power of poetry. This is his third contribution, namely that by realising that "philosophy is undoubtedly almost always impotent when faced with the reality of the thing" (ibid., p. 262) Wahl yields the floor to poetry. Acknowledging that there is another form of knowledge "that lets us commune with the density, with the enormous torpor of things" (ibid., p. 273), he includes in his article several of his own poems.

> For too long have we wandered too far from things.
> Here is a wall and a ceiling, an inkwell and a parchment.
> We are prisoners of the works of our hands
> And this is not what I mean by things.
>
> For a true thing is a living soul
> Which yet dissolves in the bosom of the universe.

> The grass is. I no longer see but a world all green.
> Everywhere I see now but a pulsing unity.
>
> (ibid., p. 262)

Through poetry Wahl is able to express the profoundness of our relationship with the world of things and our entanglement in it. He thus puts forward an exhortation for the philosophers of tomorrow to once again – as the early philosophers such as Heraclitus did – affirm their connection with what surrounds them.

> I see dimly the philosophers of to-morrow
> Anxious to be amid the breath and depth of things,
> Feeling space, time, feeling dense existence,
> Abrupt nextness and fusion of souls.
>
> (ibid., p. 273)

This mode of thinking about materiality in a more expressive and networked way also enriches the analysis of Bell's laboratory complex at Holmdel. At the very least it shakes the fundamentals of architectural critique. Architecture is not an architect's plan cast in concrete, steel, and glass which readily follows the architect's vision. Rather, the materials of the building behave unexpectedly, they rust, break, bend, and crack. Both the building's inhabitants and the architects have to adapt to the constant change of their cocoon. Also, scientific research is not the exploitation of dead material according to well thought-out plans. The material assemblages on the workbenches react unexpectedly. They can even shatter scientific theories so that researchers have to learn from the material and adapt their thinking to its potential – the field of microscopic (subatomic) and macroscopic (cosmic) physics is particularly rich in such stories, cf. e.g. Georges Lemaître's discovery of the expanding universe (cf. Hüfner and Löhken 2016). With that the economic superpower and boundless optimism of big companies, researchers, and famous architects cannot overcome the unexpectedness of their material premises.

An Artistic Intervention: Richard Learoyd's Crashed, Burned, and Rolled

Figure 13: Richard Learoyd, Crashed, Burned, and Rolled, C-Print (2017)

> Richard Learoyd's "Crashed, Burned, and Rolled" series is best seen in person, as he uses large format prints. One image from the series is available online at the *Pace Gallery*.

Another way to describe the impact of materiality concludes this chapter. The series *Crashed, Burned, and Rolled* of the British photographer Richard Learoyd portraits wrecked cars. The photographs are exposed via a large camera obscura directly onto photographic paper. The result is a life-size image, which shows every detail of the deformation of steel, glass, and various other composite materials that happened during a severe car crash. While the black-and-white direct photography introduces a sense of abstraction, the impact on the viewer is nonetheless one of a direct and brutal physicality. Learoyd's images show both the abstract beauty of materiality and the deadly severity of the deformation and reconfiguration of matter. They make us aware, in the sense of Jane Bennett, that matter is not something that is in our hands, but sometimes a brutal force to be reckoned with.