

Glossary

Apparatus

Apparatus is conceptualised along the lines of physicist Karen Barad's understanding, which exceeds the common understanding of apparatus as devices and instruments. Barad suggests an apparatus as a material-discursive practice that also takes its entanglement with its environment, the conditions for its production, and the epistemological context into account. This understanding resonates with Hans-Jörg Rheinberger's analysis² of scientific tools (or apparatuses) as things that are the result of a priori knowledge processes. Rheinberger understands these processes as the (material) stabilisation of knowledge.³

Design

The term 'design' creates biases, particularly in the German-speaking environment. It is often associated with the production of *designed* goods, coming from industrial design, communication design, or interface design. Design, however, when focused on the process, makes thinking-in-the-making visible, based on practice with tools and media. Thus, I propose understanding design rather as a drafting process that engages with sensory and aesthetic practices, following a formal-aesthetic approach that takes function into account. In this sense, design then could be defined as practices of drafting.

Drafting (Entwerfen)

There is no direct translation of the German term *Entwurf* into English. The closest words are 'drafting' or 'designing'. *Entwerfen* is a drafting and thinking process that requires a defined framework, and techniques, instruments (e.g. tools and media), and methods. It is defined by the use of recordings, writing and drawing systems, techniques of representation and visualisation, and a speculative and experimental procedure. The thinking can take place with, through, and in dealing with media.

Enskilment

The process of learning a specific practice and the required set of skills.

Inscription (systems)

The representations in which references circulate. It follows (within a thought collective) a pre-defined set of rules and signs to create consistency.

Intra-action

A term coined by Barad to describe the entangled nature of what is usually termed *interaction*. According to Barad, phenomena co-constitute each other only in their *intra*-actions and thus should not be looked at as separate entities (which the prefix *inter* suggests), but rather as a continuum of becoming with one another. Applied to natural scientific practices, this may mean that researcher and research object are interdependent

¹ 'Barad's Feminist Naturalism', *Hypatia* 19, no. 1 (2004): 142–61, <https://doi.org/10.1353/hyp.2004.0012>.

² 'Experimentalsysteme: Differenz, Graphematizität, Konjunktur', in *Experiment, Differenz, Schrift: Zur Geschichte Epistemischer Dinge* (Bergisch Gladbach: Basilisken-Presse, 1992), 21–32.

³ *Ibid.*, 28.

- and that one would not exist in this specific constitution without the other (as researcher and research object).
- Media**
Part of a technology. The form of and carriers on which recordings, references, and inscriptions are stored based on the employment of tools.
- Mediation**
The intra-activity of discourse, technology, research object, and the scientist (in short: apparatus) in processes of knowledge production.
- Novice**
Describes a person who is new to a specific work and first has to be trained and go through situated enskillment.
- Objectivity**
In the sciences, objectivity is a key requirement to ensure valid scientific statements and findings. Within the natural sciences, objectivity most commonly indicates that scientific truth is derived from an external referent, free from subjective biases such as emotions or a priori commitments. It emphasises the testability and reproducibility of research conducted by a neutral and impartial observer. In the humanities, however, this concept is contested. Science historian Lorraine Daston and art historian Peter Galison⁴ suggest that objectivity is always a specific form of subjectivity. It is created through a specific thought style, which defines how the scientist must act to create objectivity. Objectivity, thus, is culturally and socially determined. Ecofeminist Donna Haraway⁵ stresses that objectivity can come only from a situated position that takes the conditions of research and the potential biases of the scientists into account and makes them transparent.
- Performative**
This refers to a focus on the processual understanding of actions and their causal relations, for example, *science-in-the-making* as a continuous process rather than a fixed/stabilised entity.
- Recording**
The notation of any observations and thoughts that are transferred from an ephemeral state into a physical item and thus serve as storage, here referred to as reference.
- Reference**
The semiotic (often visual) representation of objects, often text or image-based in the natural sciences. Since the sensory turn of the 1980s,⁶ increasing attention has been paid to senses beyond the visual – which had previously been privileged – and their representational capacities.
- Referent**
That which references refer to; in the sciences, this is often the research object.
- Representation**
The cultural practice of mirroring nature (in the case of the natural sciences) or culture (in the case of the cultural sciences), thus making it accessible to an audience. Recently, ecofeminists have been advocating for a shift from representation, which they correlate with reflection, to diffraction.⁷ Representation has been accused of creating invisibilities, binaries, and affirming power relations, while a diffractive approach makes the hidden visible.
- Situated/situatedness**
The circumstance in which there is no *outside* perspective with universal knowledge or the capacity to produce the same.
- 4
Lorraine Daston and Peter Galison, *Objectivity* (New York: Zone Books, 2010).
- 5
Donna Haraway, 'Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective', *Feminist Studies* 14, no. 3 (1988): 575–99.
- 6
David Howes, *Sensual Relations: Engaging the Senses in Culture and Social Theory* (Ann Arbor: University of Michigan Press, 2003).
- 7
Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham, NC: Duke University Press, 2007); Donna Haraway, 'The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others', in *The Haraway Reader* (New York: Routledge, 1992), 63–124.

Rather, knowledge and its production are always interdependent with the situatedness of its producers. This may be the epistemological situatedness in a discourse and the respective knowledge (see *thought collective*). It also encompasses institutional conditions, questions of funding, accessibility, and gender, class, and race. In short, a situated perspective takes the (hegemonic) power relations that facilitate or prevent knowledge production and may privilege certain fields over others into account. Situatedness aims at making these conditions visible and taking them into account.

Tool

Part of a technology. Any item that supports and facilitates the production of recordings, references, and inscriptions.

Situated enskillment

The (epistemological, bodily, and sensory) enskillment of practices that are specific (situated) to a context.

Situated mediations

The entanglement between the conditions of knowledge production (as described in the term *situated*) and the relevant mediations.

Technology

The overarching term that also encompasses tools and media to describe the use of the relevant means and their meaning for knowledge production.

Thought collective

A term defined by Ludwik Fleck⁸ to describe the social group that follows a specific style of thinking; a thought style.

Thought style

A term defined by Ludwik Fleck⁹ to describe '[the readiness for] directed perception, with corresponding mental and objective assimilation of what has been so perceived. It is characterised by common features in the problems of interest to a thought collective, by the judgment which the thought collective considers evident, and by the methods which it applies as a means of cognition. The thought style may also be accompanied by a technical and literary style characteristic of the given system of knowledge'.¹⁰

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Ludwik Fleck, *Genesis and Development of a Scientific Fact* (Chicago: University of Chicago Press, 1979).

9

Ibid.

10

Ibid., 99.

