

Chapter 2

The Disclosure of the World

2.1 Techné

All experimentation is technically implemented

—Hans Jörg Rheinberger 1997, p. 141

“[W]hereof one cannot speak, thereof one must be silent” (Wittgenstein 1922, p. 23) and instead speak of something other. What exactly is spoken about when talking of *Bildung* remains subject to disagreement. However, according to Koller, the fact that educational processes are not simple to observe, must surely “be a matter of agreement in the debate in the theory of *Bildung*”, despite “the many differing concepts of education” (1999, p. 161). If the subject here is not observable, then the question as to the strategy through which one can nevertheless disclose it becomes the all decisive factor.

One of the common strategies in quantitative research is to talk about training instead of *Bildung*. One of the common strategies in qualitative research consists of talking about narratives about educational processes instead of educational processes themselves. And a common strategy in theories of *Bildung* is to talk about texts about *Bildung* instead of *Bildung* itself. The strategy followed here consists of talking about the history of protein synthesis in a test tube instead of about *Bildung*.

Put a little less pointedly: on the basis of already well researched processes of world disclosure organized according to the division of labour, especially in the natural sciences and with special attention to Rheinberger’s work, an attempt will be undertaken to gather the general characteristics of the processes of world disclosure

Translators’s note: *Erschließung*—I follow Macquarrie and Robinson in their translation of Heidegger’s usage of the term *Erschließung* which is being referred to here. Cf. their footnote: “In ordinary German usage, the verb ‘erschließen’ may mean not only to ‘disclose’ but also—in certain constructions—to ‘infer’ or ‘conclude’ in the sense in which one ‘infers’ a conclusion from premises. Heidegger is deliberately ruling out this latter interpretation, though on a very few occasions he may use the word in this sense. He explains his own meaning by the cognate verb ‘aufschließen’, to ‘lay open’. To say that something has been ‘disclosed’ or ‘laid open’ in Heidegger’s sense, does not mean that one has any detailed awareness of the contents which are thus ‘disclosed’, but rather that they have been ‘laid open’ to us as implicit in what is given, so that they may be made explicit to our awareness by further analysis or discrimination of the given, rather than by any inference from it. (Heidegger 1962, pp. 105–106)

and, with respect to certain individual processes of world disclosure, their re-specification will be attempted or, at the very least, the possibility of their re-specification will be made clear.

Therefore, the strategy chosen here to deal with the impossibility of directly observing educational processes does not consist in nevertheless attempting to do so in a direct fashion, nor does it consist in reconstructing them on the basis of their narrative traces, but rather consists in following a detour of abstraction and re-specification.

Here, two forms of the processes of world disclosure will be distinguished: the explorative, which, when applied to the individual, will be termed learning, and the experimental, which, when applied to the individual, will be termed *Bildung*. It remains to be demonstrated that this distinction is legitimate.

If, in the following, *Bildung* is not always talked about, then this is not because the talk is of something else, but rather that the detour holds out the hope that, in the end, it can be legitimately said that the whole time it was *Bildung* that was being talked about—not because experimental science and *Bildung* are the same (which is not the case), but rather that both are concerned with experimental forms of the disclosure of the world.

This strategy is guided by the speculation that *Bildung* will be less misrepresented this way than if one approaches the subject in an apparently direct manner. Although it has not yet been elucidated that the abstract analysis of the characteristics of experimental research is guided from the outset by the educational-theoretical focus on the possibility of the re-specification as applied to the individual, it should nonetheless be apparent.

An alternative strategy of this kind must be, singularly and exclusively, legitimated on the basis of its outcome; and also, in this outcome, not as to whether a correspondence between theory and object is evident, but rather in that something becomes recognizable with which one can make use of in the future.

An either-or in the choice of empirical access is anyway absurd, given the absence of any comparative fundament. However, the strategy of a detour of abstraction and re-specification can only be taken on board if one accepts that the outcome of a work (in this case: *Bildung* and scientific experimentation can both be understood as different forms of the process of experimental disclosure of the world) can be used for its own legitimisation (*Bildung* and scientific experimentation are simply different forms of the process of experimental disclosure of the world). This is forbidden in classical logic.

Such a strategy is already opportunistic (in the sense of an orientation guided by given options), but, at its very opening, presents the initial problematic of this work in another light. Originally, the question was not: “what are the characteristics of an experimental disclosure of the world?”, but rather: “What is the relationship between *Bildung* and technology?” Therefore, this line of argument does not pose an intended processing of an initial problematic towards a solution, but rather the grasping of a particular opportunity on offer, in which an apparently unsolvable problem (“What is the relationship between *Bildung* and technology?”) is substituted *ex post* by an approachable problem (“What types of world disclosure are there and how are they characterized?”) after discovering what its solution is (experiment and exploration).

And still there exists a connection between the original problem and the unsought solution; now the relationship between *Bildung* and technology can be reformulated

in the light of the differentiation between experimentation and exploration. That this relationship no longer occupies a prominent space does not change the fact that technology, understood here in the sense of a ruse, a *techné*, in the analysis of *Bildung*, can no longer be ignored.

The answer to the question as to whether the approach sketched here can be seen to be a legitimate form of knowledge at all (or even as something conducive to the *Bildung* of the author) already depends on one conceding that *techné* has a place in science (and *Bildung*).

The arguments presented in this work aim to show that one should. It is thereby possible that the concept of *Bildung* will thus lose that dignity which, for many, renders it both attractive and exclusive as opposed to “mere accumulative learning”. Not simply because, as a consequence, learning experiences a re-evaluation over and against *Bildung*, but also, and above all, because *techné* in its pragmatic, evasive character is deeply profane, almost antiheroic. “May I never have a character like that, but walk in straightforward ways”, wrote Pindar accordingly, in view of Odysseus’ ruses (taken from Neiman 2008, p. 310).

I will begin again¹ in the laboratory. Just as Latour holds the results of scientific and technical research² in the philosophy of science to be the Archimedean pivot upon which it would be, or—if one is optimistic—upon which it has become possible to lever³ sociology from out of its forgetfulness of the material, I also assume that the results of contemporary scientific and technical research in the philosophy of science can be used in the same way as an Archimedean pivot for the theory of *Bildung*.

In the laboratory the meaning of technology for “fundamental changes in the figures of the relationships to the self and to the world” (this is at least undisputed with reference to relationships to the world) is so obvious, as well as being so well empirically researched—and, thanks to the laboratory scientist’s good documentation, is itself accessible to research—that it offers the possibility of testing theories for their ability to reflect processes of world disclosure together with technology in a fundamental manner.

The laboratory can thus, in a sense, serve as a laboratory for researching *Bildung*. This is because that which proves itself in a laboratory must also be transferable to those locations where the relevance of technology to fundamental changes in relationships to the self and the world is not so apparent and so theoretically easier to *pass over*. If one bears in mind that, in general, technology is developed as a means towards achieving a certain goal without the technology coming overly to the fore,

¹ In Ahrens 2005 I cursorily present the significance of contemporary scientific and technical research with respect to an educational-theoretical debate with the natural sciences and technology. I draw upon that work here, whereby the repetition of certain aspects is unavoidable where they are fundamental for the ensuing arguments. It should become clear in the following that such a new approach can also have a methodological-strategic significance. For formal reasons it is here noted that it is not a question, not even partially, of a simple repetition—namely insofar that these aspects, are now revised as recontextualised, decisive aspects of the former line of argumentation.

² For an overview cf. Biagioli 1999.

³ Cf. especially Latour 2005, p. 98, where, in addition to this, he emphasises under the aptly coined title *The fortunate wreck of sociology of science*, that the laboratory studies are more than just an impulse, but rather constitute a field of sociological research of lasting value. Cf. also *ibid.*, p. 119.

i.e., it is developed in order to be forgotten, then this means as good as nearly everywhere. In Latour's words:

Scientific practice is the drosophila of social theory since it offers an exaggerated and scaled up version of what can later be studied in much more inaccessible domains. [...] Compared to other domains, science is easier because the debates about the detours of objectivity are much more traceable. (Latour 2005, p. 119)

According to Latour, it is thanks to the natural sciences themselves that the sociological research of science has not been able to conceptually ignore the participation of technological and epistemic things (see Sect. 3.6 for an account of these concepts) in the knowledge acquisition process in their work in the laboratory. The natural sciences have strongly protested against the classical sociological manner in which they have been described, and have so shown the sociologists where they have inexplicitly (or even explicitly—even that has actually happened) declared the *explanandum* “social” to be the *explanans*.⁴

The experiment of this work, which is prepared by returning to the laboratory to begin again, is bound to the risk of repetition. The danger of a mere repetition is the danger that one can never exclude when experimenting, because one can do nothing other than repeat when one experiments. However, the aim consists of avoiding *simple* repetition and, through the deviation from the ideality of a simple repetition, enabling the new to make a difference. This is an attempt at the strategic use of iterability, an approach which will be introduced as an important characteristic of the experimental itself (see Sect. 3.2). Nevertheless, nothing has been won yet, apart from the knowledge that there is a fissure between the repetition and the repeated, between the intention and the intended action⁵—even if intention means nothing other than that in an action that differentiates it from mere behaviour.⁶

⁴ “Chemist, rocket scientist, and physicists are used to seeing their laboratories explode, but it had been quite a while before the sociologist’s office could run an experiment risky enough even to have a chance to fail! And, this time, it did explode.” (Latour 2005, p. 99) What Latour so aptly describes is above all the debate in the scientific community regarding “social construction”. (Cf. Hacking 1999 for a summary of this).

⁵ The most consequent account of intention can be found in Husserl. According to Husserl, aiming for something non-intentional can only be described as a paradox. Insofar as consciousness for Husserl must always target something—that is exactly what intentionality describes—so consciousness is always a consciousness of something, or an act always deals with something, in this strict sense intentionality includes the non-intentional, it is the same as “a universal medium [...], that eventually carries within it all experience, even that which is not characterised as being intentional” (Husserl 1950/1913, p. 171 my trans.). For Husserl intentionality has a transcendental status of total comprehensiveness: “Intentionality is the name of the problem encompassed by the whole of phenomenology. The name precisely expresses the fundamental property of consciousness; all phenomenological problems, even the hyletic ones, find a place within it. As a consequence, phenomenology begins with problems of intentionality” (Husserl 1982/1913, p. 357). On the other hand, Adorno for example, refers to the inconsequent usage of the concept of intentionality by Husserl, which on the one hand admittedly “should include all cogitationes”, but, on the other hand, distinguishes itself from those “sensual” experiences or sensory content that he terms “primary content”. (Adorno 1973, p. 68). For the theoretical consequences of such a comprehensive concept shown in the example of “World” compare Chaps. 8 and 9 in this section.

⁶ This would correspond to Luhmann’s concept of intention. In contrast to Husserl’s transcendental solution for intentionality, Luhmann displaces intention within the immanence of the social

Thus, nothing is won by simply renaming repetition as iteration. More precisely, nothing will be gained until one not only insists upon the difference between a differentiation enabling repetition and a differentiation hindering repetition, but also makes the effort to enquire *what* the difference is between these two forms of repetition.

The difficulty lies in the fact that the difference around which this centres cannot be intentionally produced as the interesting point of an experiment, is that which reveals *itself*, and not that that *one* reveals, and certainly not that *at which* one points. However, the following should make clear that that does not mean not being able to do anything.

2.2 The Concept of the Experiment

The experimenter will not be surprised by the result of his work

—Gunhild Berg⁷

It is said that there is a boom in the concept of the experiment. And this boom is by no means limited only to a certain scientific community. In a recently published volume on the history of science understood in terms of a history of ideas, Gunhild Berg speaks of a simultaneous “boom of the concept ‘experiment’ in the natural, social and humanistic sciences” (Berg 2009 my translation).

Berg holds this to be so extreme that “only the concept of ‘knowledge’, including its derivatives and composites” (ibid., p. 51) is able to compete with the vogue of the concept of the experiment. I share this view at least to the extent that I assume that the concept of the experiment has gained significance in a striking manner and appears to exude a certain attraction upon various authors.⁸

However, contrary to Berg, I also assume that there are good reasons for this. A conceptual-historical analysis is not necessary to gain an initial impression wherein its function—at least with respect to the theory of *Bildung*—could reside. A cursory glance in a few publications in the field of contemporary theory of *Bildung*, in which the experiment concept has found coinage, is sufficient.

and replaces the last level of allocation always with the last but one observer. Luhmann accounts for intention as a necessary transferral fiction with which one can accord acts to persons. Non-intentional acts are as such not possible, rather they are termed behaviour. (Luhmann 1992c).

⁷ This quotation is taken from a preliminary version of the 2009 essay, the final version of which will be discussed in the following. In the final version the formulation is slightly defused to “the experimenter will *seldom* be surprised by the result of his work” (Berg 2009 p. 57, my emphasis). However, this changes nothing in Berg’s argument that the experimenter tries to avoid surprises as this would mean “simply the failure of the attempt” (ibid.). The preliminary version can be found under: http://www.zfl.gwz-berlin.de/fileadmin/bilder/Projekte/Begriffsgeschichte/Berg_Konjunktur_Experimentbegriff.pdf.

⁸ For want of reliable research regarding the use of the concept this impression can only serve as circumstantial evidence, which is also why the following arguments do not build upon it, but rather conversely aim to clarify the concept’s attraction from that matter at hand and so render the (possibly) increased usage plausible. Berg himself refers to a quantitative study regarding the use of the concept by Jörg Armin Kranzhoff in 1965.

Even only a few examples already make clear that the concept of the experiment (sometimes in quotation marks, sometimes not), without it in each case being too deeply explicated, with respect to various authors and, in each case, with different theoretical contexts, is almost always used in a structurally comparable problem—admittedly mainly as a demarcation rather than a solution to that problem.

Thus the concept of the experiment is often used as a kind of limiting concept, which inhabits the margins of the possible and frequently finds itself exactly where paradox obtains a practical meaning and can be taken to be just as practical a challenge.

And so the concept of the experiment comes to play in Jenny Lüders' educational-theoretical reading of Foucault exactly there where the experience of one's boundaries approaches the boundaries of the very possibilities of one's experience. It comes into play in the practical impossibility of extending one's possibilities from outside of one's own possibilities (Lüders 2007).⁹

Starting with the question as to how critique in Foucault's sense can be thought practically, Lüders implements Foucault's concept of critique so consequently that its paradoxical nature becomes apparent. Contrary to what is still common in contemporary reception of Foucault, she refuses to defuse the challenge presented by Foucault's thought by playing down the concept of critique to a "we-know-better" knowledge about present power relations so that one can erroneously imagine oneself occupying an "enlightened" position in a manageable distance to them. Rather, she emphasises the inability to step out of the power relations constitutive of the subject as some kind of sovereign supra-subject in order to be able to change oneself from an external position.

If a determined perspective is absent, and the conditions for changing the power relations constitutive of the subject can themselves only be situated within this, then, according to Lüders, following Foucault, one can do nothing other than attempt to change the boundaries of the possible *experimentally* (cf. Lüders 2007, p. 118). Here, she succeeds in salvaging the double meaning of the French *expérience* as experience and experiment¹⁰ in German: "It concerns the convergence of one's own being in its total conditionality. But, because I am unable to grasp these conditions in their totality I must experimentally test them, strategically approach them, and provisionally think them in another way in order to render them as contingently experiential within this 'other' thought. And it is precisely in this attempt to 'critically' grasp the borders and conditions of one's own being that they are possibly dislocated." (Ibid.).

As such, understood as it is here, as a characteristic of a critique that has turned practical, the experimental is not a concept that attracts greater attention in Lüders' argumentation, and also receives no closer determination either by her, or by Foucault himself. However, one can ascertain that *Bildung*, as determined by Lüders, is dependent upon experimentation.

⁹ We are not concerned here with discussing of the "concept of the experiment" in each and every author, but rather solely with collecting indices of its virulent function in educational theory.

¹⁰ Cf. also Stengers 2008.

Another example of the application of the concept of experiment in contemporary educational-theoretical publications can be found in two essays in the recent collection “Bildende Widerstände—widerständige Bildung”¹¹ (Thompson and Weiss 2008). Roswitha Lehmann-Rommel, who also refers to the connection between experience and experiment, holds that the “experimental thought” of both Kant and Dewey, which she differentiates from a “technical understanding of ‘experiment’” (Lehmann-Rommel 2008 p. 121), offers an alternative to the epistemological model of representation. The concept of experiment serves as a delimiting concept in her work too.

Starting with Kant’s demand for firstly creating “experimental schools”, and then “normal schools”, formulated in his lectures on pedagogy, she reconstructs the experimental moment in Kant as the interface between reason and practical knowledge. For him, experimentation marks “the point of contact between human conditionality as a being of sensory perception and rationally accordant freedom of creativity in each respectively discovered world” (ibid., p. 125). As reason alone is unable to overcome the limitations of the educator in his own development, at that time he conceives *Bildung* as an intra-generational project of the Enlightenment. And, since reason alone is also not able to “judge how reality can be formed according to principles” (ibid., p. 124), experimentation, as an “empirical business, open to the future” is necessary, which itself “can be obtained neither through the accumulation of practical knowledge nor through theoretical reasoning and planning” (ibid.).

Dewey’s “Logic of Inquiry” can be understood as being no less related to practical knowledge and no less oriented towards a transgression of the limitations delivered by one’s own access to the world within the simultaneous impossibility of external guidance. With Dewey, experimentation aims for the “emancipation from the rule of habit” (ibid., p. 135, emphasised). Interestingly, experimentation is not here associated with science itself, but is rather, on the contrary, understood as a philosophical praxis which has as its object the critique of the tendency of the natural and social sciences to continue treading their well worn paths.

Thus, Lehmann-Rommel sees the decisive characteristic of experimental thought in Dewey correspondingly:

That in an experimental operation nothing is fixed—neither the leading idea, the conclusions and judgements, nor the observed or supposed nature of the object. Ideas control only always on a trial basis; their acceptance strictly depends upon the results of the experimental operation. This is always specific to the situation and cannot fall back untested on any authority drawn from earlier findings. (Ibid., p. 130)

In the same volume, Gabriele Weiss is also concerned with working at the limits of one’s own possibilities: while, in relation to the paradoxically posed question: “How can one see otherwise than one sees?” she explicitly engages with Ludwik Fleck’s description of the experiment in natural science and his account of how that which is new originates, she reads Humboldt, without mentioning the concept of

¹¹ [Translator’s note] “Formational Resistances—resistant Education”—in the German the title plays on the double meanings of *Bildung* as formation, and as formal education.

the experiment itself, as a theorist who attempts to answer the equally paradoxical question: “How can one speak otherwise than one speaks?” (Weiss 2008).

Admittedly, she does not use the concept of the experiment here, but there is a structurally comparable problem that she sees addressed by Humboldt which allows her to draw him into a relationship with Fleck: for Humboldt too, the changes focussed upon here cannot be initiated externally (to language); it is rather much more a question of transforming and remodelling language.

Thus, despite the differences in the details of their respective approaches and the futility of determining the concept of the experiment beginning with their work, it is all the more clearer that the concept of the experiment cannot be awarded an arbitrary function in their respective works: it is characteristic of a praxis on the margins of one’s own possibilities, where paradox becomes practical.

The supposition that the concept of the experiment is a non-arbitrary function operating at the limits of possibility should be sufficient to distance ourselves from Berg’s speculation that the “conjuncture of the concept of the experiment” can be explained by the use of dubious means in a fight for recognition, which she describes in Bourdieu’s vocabulary as a symbolic struggle on the social field of the sciences.¹²

This is namely a struggle in which the social scientist attempts to win points through “the frequent use of a semantically diffuse concept of experimentation” (Berg 2009, p. 69 ff.) and so, in a certain way, parasitically profits from the dignity of the natural sciences. She writes: “It appears as if the social sciences [humanities], by taking a share in the concept (irrespective of whether via definition, use, methodology etc.) are fighting for their entitlement to participate in the socially respected and award winning (natural) scientific discourse.” (Ibid., p. 70).

Berg thinks that the concept of experiment used in the humanities and social sciences is semantically diffuse insofar as it concerns an inappropriate and basically purely metaphorical transfer of a specific concept belonging to the natural sciences. The suspicion that social scientists (and their humanities counterparts) would try to symbolically increase the value of the perceived deficit in their scientific scholarship through pilfering vocabulary from the natural sciences is, in its general culturalised form, nothing new; one is confronted with this phenomenon in various disciplines (and in various forms) but above all under the catchphrase “physics envy”. So Giddens, for example, already wrote in the seventies:

a sort of yearning for the arrival of a social scientific Newton remains common enough, even if today there are perhaps many more who are sceptical of such a possibility than those who still cherish the hope. But those who still wait for a Newton are not only waiting for a train that will not arrive, they are in the wrong station altogether. (Giddens 1976, p. 13; but also cf. Munger 1995)

According to Berg the particular problem with the concept of experimentation consists in its metaphoricity and its origin in the natural sciences, from which the concept cannot be easily transferred to less exact sciences. A multitude of usages additionally undermines its usefulness. Thus, on the whole, the concept gains in

¹² Cf. above all Bourdieu 1988.

popularity less from its usefulness as much more from the appearance of scientific scholarship that can still be maintained after its import from the natural sciences even as a semantic corona to some extent plays over its real lack of content.

And this suspicion of motives is not without its grounds: Berg relates various examples of highly inappropriate dealings with the concept of experimentation, dealings which really are based upon an inappropriate transfer of a concept of experimentation drawn from the natural sciences, so that these examples convey the impression that the concept of experimentation, as used in this way, is almost completely enveloped by its strategic significance.

However, this suspicion of motives disguises the more interesting and important question: whether there could be other, more objective reasons for the increasing attractiveness of the concept of experimentation. The speculation¹³ that this is indeed so guides this work. The view that there are good grounds is reason enough not only to use the concept of experimentation frequently, (thereby arousing the suspicion of questionable motives), but also, for purely humanistic reasons, to completely orientate oneself according to the experiments of the natural scientist.

Nevertheless: according to the experiments themselves and not the “definitions of the experiment put forward by natural science” or the natural scientist’s “concept of experimentation” upon which Berg concentrated, and then appeared to equivocate with the praxis of experimentation: this embraces “since early modernity, apart from its explorative function also its verificational, evidential and demonstrative functions.” (Berg 2009, p. 52).

An initial practical indication as to why the relation of the humanities and the social sciences to the concept of experimentation is almost always inadequate is thus given by Berg herself: namely, she refers to an equally common as inappropriate “natural scientific concept of experimentation”, that, as a matter of fact, (and this is to be shown in the following), can neither be understood as explorative nor correctly characterised in terms of the functions of verification, evidence or demonstration, and not once in terms of the function of falsification.

Just because many experimenters appear to believe in this definition does not make it true. One of the early findings of the philosophy of science was that there is a difference between that which the experimenter does, and that which they s/he believes him/herself to be doing when s/he reflects upon his/her work (a significant problem for propaedeutics, insofar as it also orientates itself according to a theoretically plausible, but nonetheless inaccurate, picture of science). Accordingly, the problem for the philosophy of science has always consisted in the fact there was no-one available whom one could, in a certain sense, by way of an expert interview, simply ask. Gaston Bachelard brought this to a head when he turned to natural scientific experimenters and demanded of them:

Tell us what you are thinking, not as you *leave* the laboratory, but during those hours when you quit ordinary life to *enter* scientific life. Give us, not the empiricisms of your evenings, but the vigorous rationalism of your mornings, the *a priori* of your mathematical dreaming, the urge behind your projects, your unadmitted intuitions. (Bachelard 1968, p. 11)

¹³ One could, with respect to Sect. 3.13, also talk of intuition.

Thus, in order to demonstrate the inappropriateness of the human sciences' dealings with the concept of experimentation Berg paints a picture of the natural scientific experiment which the human sciences indeed do not match and cannot match, but which is repeatedly striven for.

However, this picture *cannot* be matched by either side—neither that of the human sciences nor that of the natural sciences, which is why the problem of the increased usage of the concept of experimentation does not consist in its erroneous transfer from the natural sciences, but rather much more fundamentally in *a continuing lack of understanding of the experiment itself*.

The picture of the experiment drawn by Berg is equally widespread as it is inaccurate; but it is not simply inaccurate: rather, that attempt to empirically match each single characteristic of the concept of experimentation, which itself is not further problematised by her, introduced by her into the field, would render every natural (as well) scientific experimental research impossible (insofar as we are still dealing with research in the strict sense, namely the generation of new insights). She writes: Insofar as the “modern social sciences” define the “‘experiment’ under the explicit reference to the natural sciences as an instrument for the validation of previous theoretical formations, and as an instrument of knowledge propagation along the lines of a proto-theoretical experience” they orientate themselves according to “the paradigmatic conceptual understanding of the modern natural sciences” (Berg 2009, p. 53).

It is the concept of the experiment in natural science that “since early modernity, [has] apart from its explorative function also [embraced] its verificational, evidential and demonstrative functions.” Berg thinks that the literary and cultural studies have now confused the creative aspect of art production with the “explorative [aspect] in [the natural scientific] experiment” that “segments and isolates a slice of reality” which stands in opposition to “free formation” (ibid., p. 54 ff.). The fashion of understanding¹⁴ the essay as an experiment in writing suggests “a tendency toward open-endedness common to both forms” that, however, in the face of a necessary meeting of “assumptions about the course and results of experimentation” thwarts the very idea of open-endedness in the natural sciences and allows “in each case, uncertainty about the results of an experiment”, assumptions that the natural scientist would “express as experimental planning and ordering”. As a consequence, an “unexpected result [...] would simply mean a failed attempt for the natural scientist, namely the disappointment of his/her expectations” (ibid., p. 56).

If the experimenter is actually not, or only seldom, surprised by the results of his work in this sense (i.e. in the cases representing “simply a failed attempt”), then the experiment understood in its “strict” natural scientific form could not represent a strategy for gaining knowledge, at the most, it could be an aid toward testing the reality content of results already won.

And it is exactly as such an agent for the purposes of falsification that the natural scientific experiment is still understood, which is also why it has, until now, only been misunderstood, or could only “metaphorically” fertilize discussions about

¹⁴ A fashion, by the way, that I also follow: cf. Sect. 4.7.



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