

## ***Artistic Experimentation in Music***

### ***An Anthology***

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# Artistic Experimentation in Music

INSTITUTE

Darla Crispin and Bob Gilmore (eds.)

## An Anthology

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ARTISTIC EXPERIMENTATION IN MUSIC:

AN ANTHOLOGY







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Darla Crispin and  
Bob Gilmore

Leuven University Press







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# Artistic Research and Experimental Systems

## The Rheinberger Questionnaire and Study Day - A Report

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### 1. INTRODUCTION

When discussing experimentation in artistic research, one could simply relate it to experimental art practices of the twentieth century, pointing out that this is a well-established paradigm in the history of art. However, the problem of epistemology remains: how does experimentation—in particular when it comes to art, music, or design—contribute to knowledge and understanding?

This is particularly difficult in light of the work of Karl Popper, who, in *The Logic of Scientific Discovery* ([1959] 2002), claims that there is no logical basis to induction, that is, the formation of universal statements based on singular observations. In short, Popper's theory suggests that knowledge does not somehow emerge from experimentation, but rather that it can only be achieved through the empirical testing of universal statements. While it is possible to falsify any such statement through a single test, it is impossible to verify universal statements once and for all, since it cannot be guaranteed that future tests may not falsify those statements that were believed to be true. Falsification thus delivers a degree of certainty that verification does not.

As a consequence, for Popper, “the logic of scientific discovery” starts with the making of universal statements (i.e., the formulation of a proposition or theory), while their empirical testing (i.e., experimentation or practice), important as it may be, can only happen after this. Popper suggests a theory-first approach, giving experimental practice a secondary role in the development of knowledge. Although this position is quite persuasive, it is unclear whether it reflects even the way in which scientific discoveries are made—that is, are empirical scientists really simply thinking up statements that they then aim to falsify, or is there some other dimension to their practice?

Indeed, one may argue that because Popper narrowed empirical science to a problem of logic, a counter movement has become possible, which since then has been called “the practice turn in contemporary theory” (Schatzki, Knorr Cetina, and von Savigny 2001). In this context, Andrew Pickering (2008, vii), for example, suggests that a theory of the development of knowledge is needed that “has a truly evolutionary character, rather than a causal one.” Hans-Jörg Rheinberger adds an important voice to this context through notions such as “experimental system,” “epistemic thing,” and “technical object,” all of which he developed in the context of his major case study on the “discovery” of transfer RNA and the development of the new field of molecular genetics (Rheinberger 1997).

For Rheinberger, however, a notion such as “discovery” must be put into inverted commas or even totally omitted, since it suggests that something such as transfer RNA existed before it was made manifest in the experimental system (*ibid.*, 133). Following Jacques Derrida, he believes that this process is more complex. According to this position, when knowledge is produced, its origin is co-produced along with it. This necessarily makes us believe that what is made has been there all along. Derrida spent much of his professional life deconstructing such origins in the field of philosophy. With this in mind, Rheinberger is careful not to suggest origins of knowledge outside knowledge-generating experimental systems, since these origins could, in turn, be deconstructed. It would also mean turning a blind eye to the way in which, in his opinion, experimental systems actually work and produce knowledge. This means that the complex artificial settings of experimental systems tend to naturalise their findings. As Steven Shapin (1984) suggests, following Robert Boyle, experiments produce “matters of fact,” that is, self-evident realities in the material itself rather than simply statements about reality.

As Henk Borgdorff (2012) proposes, artistic practice may produce works that have similarly self-evident and material meanings, which—following Rheinberger’s proposal—he takes as yet unknown entities that are instrumental for future knowledge. The suggestion is that within what is not (yet) known, artistic or aesthetic operations may be in place that can be called “research,” not because they deliver findings but because they allow future knowledge to be anticipated.

In what may be called a small “pilot study,”<sup>1</sup> I interviewed a number of ORCiM researchers to understand better how Rheinberger’s notions might be employed productively in the context of music research. At the same time, limitations have also become apparent, which need further investigation to shed new light on the practice shared by experimental artists and scientists and the

<sup>1</sup> This “pilot study” and its interviews constitute a simple reflexive tool that allowed me to open up and illustrate questions; there was no serious methodological ground to this study, since the sample size was very small, knowledge about Rheinberger’s theory was limited, and the disciplinary and personal background of the researchers was neglected. Thus, what follows has to be taken as a rhetorical device rather than a scientific claim. Because of this, interviewees have been made anonymous. Thank you, though, to K, P, S, and V (and also G, whose contribution, coming from a different perspective, is not quoted in this chapter).

difference that discipline makes to the type of knowledge that is produced and the processes that are employed.

## 2. THE QUESTIONNAIRE: DEFINITIONS

### 2.1 *Experimental systems*

Experiments require a context, which needs to be coherent and finely calibrated to lead to original results. Despite the high level of control, these results can surprise the experimenter, because a successful experimental system becomes increasingly independent of the “researcher’s wishes” (Rheinberger 1997, 24). Experimental systems “are systems of manipulation designed to give unknown answers to questions that the experimenters themselves are not yet able clearly to ask” (ibid., 28).

The experimental system is set up materially (e.g., through the kinds of instruments that are used) and also socially, institutionally, financially, geographically, etc.—in short, in dimensions that are usually overlooked when the focus is placed on individual experiments. At the same time, experimental systems are “the smallest functional units of research” (Rheinberger 2012, 92) and as such need to be as coherent as possible to produce a surprising difference.

### 2.2 *Technical objects*

Technical objects are key operators in an experimental system and are brought into a particular constellation in order to conduct experiments. Technical objects often result from previous experimentation and “embody the knowledge of a given research field at a given time” (Rheinberger 1997, 245). In an experimental system, these objects are ready-to-hand and function to conduct and control the experiments. The fixity that comes with technical objects limits the variables in an experimental system, but technical objects may again be put into jeopardy.

### 2.3 *Unpredicted events and epistemic things*

An epistemic thing is the research object that emerges from an experimental system. Epistemic things “present themselves in a characteristic, irreducible vagueness. This vagueness is inevitable because, paradoxically, epistemic things embody what one does not yet know” (ibid., 28). Thus, before having “discovered” “new knowledge,” the experimenter is presented with phenomena that are unknown, unpredicted, and still unexplained.

According to Rheinberger, the knowledge of an epistemic thing lies in its future. The term “epistemic thing” is used to indicate the unknown as it arrives in a knowledge domain, in the experimental system, or in science as a whole. Rheinberger seems to suggest that research is a process separate from science, whose products—epistemic things—science transforms into knowledge, allowing for new technical objects that are in turn used to further develop existing experimental systems.

#### 2.4 Expositions

Due to the scientific bias toward text, Rheinberger (2010, chapter 13) sees within science an “economy of the scribble” that plays a part in the transformation of epistemic things into proper scientific pieces of writing via laboratory notes, posters, conference papers, etc. Although this might be the case in the arts, there may also be other modes of recording, transformation, and presentation that settle epistemic things in a discursive context.

The notion of “exposition” is not used by Rheinberger. It is meant to indicate all possible forms of transformation that bring out (“expose”) knowledge from the experimental system and the unpredictable events it produces. Without exposition, one may argue, there might be unexpected events, but we may fail to form them into epistemic things. The “writing systems” that are used are thus crucial to the formation of knowledge.<sup>2</sup>

### 3. THE QUESTIONNAIRE: FINDINGS

From the questionnaire and the interviews I conducted, it is not possible to make any claims regarding the existence (or not) of experimental systems in artistic research practice. First, we would have to be certain that we are indeed dealing with artistic research, which is not easy given the still on-going debates regarding its definition. In comparison, by investigating a historic case, Rheinberger may have been less troubled by an assessment of the validity of the source material for his study. Second, one would need a deeper investigation into the detailed workings of those projects: what people think about them may be different from how those projects actually operate. More complex, multi-layered research needs to be conducted, which relies on historic data rather than simply the memory of individual researchers.

I can thus report only on statements about a selection of research projects in relation to Rheinberger’s thinking, rather than assess those projects.

#### 3.1 On experimental systems

It is difficult clearly to delineate experimental systems because historical distance is lacking. It is obvious, however, that references are made across “projects” and that one project often leads to another. It is also obvious, though, that a simple notion such as “my practice” is too wide. One researcher (P), for instance, made a clear distinction between learning to play an instrument (learning a practice) and responding to problems of practice. There is, however, a sense that something akin to experimental systems also exists in music and art, and that this “something” is equally complex, involving, for example, material, social, monetary, geographical, and institutional dimensions.

Despite problems of definition, all participants made it very clear that their experimental system was set up in response to problems inherent in performance practice:

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<sup>2</sup> For a further debate on expositions and their relevance to artistic research in the context of experimentation, see my other chapter in this book, “The Exposition of Practice as Research as Experimental Systems.”

## Artistic Research and Experimental Systems

P: [with reference to Gilles Deleuze (1968; see also Ott 2010)] I think we've greatly lost affectivity in the last two hundred years due to the excessive way of narrowing classical music down to the final text and the final performance and the final recording—we've reduced all these possibilities and we're not entering the sphere of the affect.

V: Finally, what I'm searching for is the form with which I'm also struggling, this form of concert or Liederabend, because I really find the form very bothering. I do feel it's dead.

K: I found the constraints in classical music so hard that classical music becomes very unexperimental in the end. Often these constraints are not only material but also ideological.

However, despite such a critical tone, the researchers whom I interviewed seem to be unwilling to suggest that traditional performances do not work. Rather, it seems that they are concerned by the comparative ease with which traditional performances can be produced and consumed without any further relevance to themselves and the audience.

This may be explained with reference to Gaston Bachelard, whom Rheinberger also references, and who, in his *The Formation of the Scientific Mind*, lists a number of obstacles to science, most importantly the "first obstacle: primary experience," which is "the experience we place before and above that criticism which is necessarily an integral part of the scientific mind" (Bachelard 2002, 31). Intensified production of primary experience through performance practice can be seen as such an obstacle for a researcher, while, at the same time, also being a prerequisite. As one researcher says:

P: This is a little bit strange, but we need this common opinion in order to show that we're able to fight it and that we want to create perforations for other possible worlds.

### 3.2 On technical objects

Initially, "technical objects" seemed a suitable name for all the types of materials brought into a performance setting, including scores, musical instruments, computer equipment, habits, and institutional parameters such as location or funding. It seems that, depending on the desired accuracy, researchers will be able to produce virtually infinite lists of "stuff" that they use or rely upon within their experimental systems. In turn, this begs the question of whether such lists will actually contribute to the understanding of an experimental system if one does not foreground those technical objects that are crucial for the performance in a specific setting, since otherwise the results could not have been achieved. In effect, the more important a technical object is for the experimental setting, the more detailed its description needs to be to understand its particular relevance.

In doing so, one may be able to trace what one researcher (V) called "the point of convergence" at which new solutions and/or experiences may emerge. For this to happen, two aspects seem to be particularly important. First, inti-

mate knowledge of the key technical objects is assumed. As was pointed out again and again, for the researchers an experimental situation was not one of “free” play and association but of tight control:

V: My performances are not experimental in [the sense] that I have no idea what’s going to happen, which could be the case . . . But that’s not exactly what I’m doing. I have a lot of spontaneous action related to text and related to movement or gesture but there’s a pretty rigid frame of pieces we know we’re going to perform in such and such way.

S: That’s one of the suggestions that I would make: the unknown is much less unknown than you think . . . when we get into it, it doesn’t have the sense of walking into the unknown. I think when we start playing what you . . . hear sounds like three people knowing what to do.

Second, the setting up of those “specific time and space conditions” (K) include degrees of distortions and misappropriations where the function of an element can fluctuate during a performance, which in turn requires a description of technical objects in not only stable but also unstable states. A distinction between technical object and epistemic thing may thus be difficult to make, as Rheinberger also suggests when he says that between them there is only a functional and no structural difference (Rheinberger 2010, 30), since the one may slip into the other. Furthermore, when a score, for example, is performed as part of an experimental system, it is unclear whether this score can ever only be a technical object, since as artwork it may escape a reduction to technology. In turn, this may mean that the building blocks of artistic research are actually open, which makes a distinction between technical objects and epistemic things potentially impossible.

V: I feel it [a particular way of performing] is not a technical object in the sense of Rheinberger because within the arts we’ll never know whether it works exactly the way we want it to work. If I have three or four performances in a row of the same piece and I have the feeling . . . after the first one, “Oh, I found this epistemic thing and I’m going to think about it and I’m going to use it as a technical object in the second one,” it might not work at all.

However, it seems that at the “point of convergence” the researchers insert precisely those technical objects that represent the historical problems alluded to in section 3.1 (a score, a particular performance form, a cultural setting, etc.) to give them potential for transformation. In other words, the “historical problems” can only be seen as problems from a particular epistemic horizon that does not require solutions so much as the ability to “wrap” those problems into quasi-functional technical objects that may in time disintegrate and open up new possible futures.



3.3 *On epistemic things*

There is substantial evidence that the researchers believe their practice to be epistemically motivated. When compared to Henk Borgdorff's analysis (2012), there is, however, less emphasis on the artwork as epistemic thing, while a performance of a work seems to be sought that exposes the work's epistemic potential.

S: If you look at epistemic things in the development of the music you find them in those moments when you decide "This is how this ten-minute piece should go" or "This is the way it should progress from here to there."

P: For me, it's not a question of playing the piece better or worse. It's a question of opening up more horizons. In this specific concert situation, things become in a way self-evident. It's a gain situation for everybody. The cultivated listener recognises this and the not-so-informed listener has this experience of something happening there that he wants to listen to.

V: I believe that in a successful, authentic performance the score and the performer and the audience come together in one moment, which gives the audience the possibility to grasp an idea of how this piece, which is a historic piece, is relevant to this person living today.

K: This project allowed me to merge something which maybe I didn't do before—at least not at that level—to merge private and public life. It's a kind of exploration of possible worlds and of an experience that I haven't had.

At least two things have to be said here. First, when discussing epistemic things during the interviews, the participants generally referred to particular types of intense experiences rather than an initial lack of understanding that would lead to future knowledge. One may conclude that Rheinberger over-emphasises a negative experience regarding knowledge (the not-yet knowing) against a positive experience regarding aesthetics. This bias may be explained in at least two ways: the personal experience might be lacking from the documents Rheinberger analysed, and the scientists themselves, by focusing exclusively on the knowledge-outcomes, may have disregarded aesthetic implications.

Thus, while the researchers clearly report forms of epistemic gain, there seems to be less lag or deferral, that is, phases of not knowing. As one researcher put it:

S: In the lower level of the development, these cycles are perhaps very quick, in a sense, so an epistemic thing turns into a technical object even before you've finished the process of making a piece.

Or to put it positively, there may be artistic solutions that operate before propositional knowledge is reached, which may even make that knowledge less desirable.

This ties in with the second point. In Rheinberger's understanding, history is projected by research insofar as the unexpected event has to be caught up and realised as scientific knowledge. While some researchers whom I interviewed were also looking for new artistic forms, there is also a sense that a potential experienced in the material through performance may need to be protected as potential rather than converted into a reality of knowledge. One researcher (P) referred to Nietzsche's term *Unzeitgemäss* (untimely), which not only has the potential for a future but also has the potential to transgress the historic order of past, present, and future and thus the need to *make history*.<sup>3</sup>

#### 3.4 On expositions

In comparison to the other questions, the section on "expositions" raised very few concerns and a limited debate, which seems to be because expositions are what performers actually make when they perform. The primary site for the exposition of research is thus the performance, which may also be made available on CD or DVD as a derivative. All researchers report that they are comfortable with the production of performance-lectures, conference papers, and academic texts. It is striking, however, that despite questions of form as reported above, there seems to be a desire to solve problems of form *within* the form rather than by breaking it.

However, two aspects deserve further attention. First, the role of documentation as an instrument for reflection seems to be of particular importance, signalling a change in the function of the performance and, moreover, to the very way in which it is constructed—with additional equipment to be taken care of and considered. How documentation may affect a performance is a question that deserves more detailed attention. Regardless of this, however, it seems that as performance moves into experimentation it becomes a generator of data as well as of experience. This, in turn, raises questions of data management and analysis, and of how such analysis may be (re)presented.

The second important aspect is a consequence of this shift to data. Once data is available, events may—through editing—be traced and/or reconstructed in the data itself, which in turn may lead to changes to the experimental system and thus future performances. According to Rheinberger, rather than speaking of data, one should thus speak of "facta in the sense of primary products of the research process. They acquire the horizon of their possible meaning within spaces of representation in which material traces and inscriptions—graphemes in a very general sense—become recorded, articulated, dislocated, reinforced, marginalized, and substituted. Researchers 'think' within the confines of such spaces of representation, within the opportunistic and hybrid context of the representational machinery at hand making up the technical conditions of an experimental system" (Rheinberger 2004, 6).

<sup>3</sup> For a more extended discussion of the problem "history" see my introduction to *Experimental Systems: Future Knowledge in Artistic Research* (Schwab 2013).

From the few interviews that I conducted, however, no general picture emerges that supports such a position. There may be many reasons for this. In part, it may be because documentation was not at the centre of my investigation; or, it may be because clear distinctions between performance and research practice do not (yet) exist and that, as a consequence, the latter are not (yet) sufficiently developed; there may, however, also be the distinct possibility that Rheinberger's thinking is less relevant to this context.

Despite such doubts, working with "data" has proved productive, as this quotation indicates:

P: I needed a visualisation of the written information I'd generated—written reflections, written articles, written essays—but I didn't come to the visual representations that I came to years later . . . And this was the moment when I realised what I'd produced.

While this quotation does not explicitly consider documentation on the same informational level as written texts (and thus may contradict the point made above), it nevertheless makes clear that for P, despite being a music performer, his research is very much dependent on information, and more specifically the editing ("visualisation") of information in ways that produce "facta," that is, matters-of-fact that are considered to pre-date the moment of realisation.

Situating expositiveness within the paradigm of information does not, however, say much about the possibility that it may also be traced within performance itself. Unfortunately, I did not gather enough evidence—nor did I ask the right questions—to address this issue, which must be left for a future study.

#### 4. DISCUSSION

During a study day at the Orpheus Institute in June 2012, ORCiM researchers had the chance to discuss with Hans-Jörg Rheinberger their understanding of his work. It was also an opportunity to invite him to consider some of the issues that arose from the questionnaire and the responses that were given. Needless to say, while we were able to narrow the gap between scientific and artistic understandings of "experimentation," it was not possible ultimately to decide whether a theory of experimental systems can actually be applied to artistic experimentation.

This may also be because, as Rheinberger explained, his theory and the notions he uses (in particular "experimental system," "epistemic thing" and "technical object") are explicitly situated in a particular historical (predominantly twentieth century) as well as disciplinary context (molecular biology), and that even within the sciences, they may not be applicable to other contexts. It is thus important to look through the particular, situated elements of the theory and the notions that Rheinberger uses and try to trace what scientific experimentation might be when it is transposed into art. An attempt to do so by using his notions may necessarily challenge artists to use a language that is not theirs to explain what they do. At the same time, the questionnaire has

shown that it is possible, in principle, for artists to enter this challenge and that, moreover, a more considered understanding of artistic experimental research practice can be achieved.

P: Rheinberger's ideas seemed to me to be very effective. They have the potential to effectively help me to be more precise . . . So my first goal with the idea of experimental system was to use it in a pragmatic way and to use the terminology of Rheinberger in [my] project.

We may thus characterise the "Rheinberger Questionnaire" as a conceptual "technical object" that was introduced into on-going artistic research practice to trace epistemic processes. So, what may have been traced?

Until more conclusive research on the role of experimentation in artistic research has been carried out, I suggest that we work with the hypothesis that a theory of "experimental systems" may be applicable to artistic practice if one focuses on processes around the unknown (research), while, in regard to processes of the known (science), there seems to be only limited usefulness. In other words, a notion such as "epistemic thing," which refers to what one does not yet know, is much less problematic than a notion such as "technical object," which suggests not only functional neutrality but, with technology, also a particular form that knowledge is supposed to take as it emerges.

While Rheinberger may be right in noting the dominance of technology in the science that he studies, technology may not be as central to the knowledge-future that artistic research produces. In fact, if we were to generalise technological determinations of science and expect artistic practice to be explained likewise, we would potentially lose a critical angle against the dominance of technology that, for instance, Heidegger (e.g., 1977) detects within the very notion of (modern) science. This is not to say that art needs to be sketched in opposition to technology; rather, in the present context, it suffices to say that the development of technology cannot credibly be seen as artistic research's (sole) objective. If this is the case, the term "technical object" is misleading if used to indicate how outcomes reappear in research. Moreover, as suggested in section three, if outcomes were of such technical quality, it is questionable whether they would remain of artistic interest.

At the same time, the notion of "technical object" occupied an important place and point of reference in my "experiment" since it was neither impossible nor particularly difficult for the researchers to think of a score or presentation form, for example, as such an object. Rather than simply using those technical objects in an experimental setup, they all seem to want to suspend precisely the technical character of the object in question. This holds true even for their own output, which is conceptualised essentially not as a new object but as the giving of a future to existing objects that are deemed overdetermined, closed, or understood.

It is important to remember that Rheinberger's thinking particularly supports such functional fluctuations, where the epistemic horizon of technical objects may be reopened; the question, however, is how much determination

(i.e., technicity) artistic research can afford, and if there is not a proto-technical, epistemic stratum that is aesthetically rather than propositionally secured. Aesthetics here, however, needs to be understood as a complex interrelationship of sensation/perception (*aisthesis*) and artistic practice, while avoiding the post-Hegelian established meaning of aesthetics as philosophy of art, which proposes a philosophical (that is, a propositional) destiny for art.<sup>4</sup> One may argue that artistic research, in providing a producer's approach to knowledge, serves to stabilise such aesthetico-epistemic processes outside a philosophy of art.

In the comments of all researchers there is thus reference to what may be described as the aesthetic suspension of the epistemic *for epistemic reasons*, that is, to affect an audience's understanding of a piece of music and its relevance in the respective contemporary context (see quotations in section 3.3). It is because of this epistemic purpose that the term "epistemic thing" may have proved useful to the researchers, since being different to "work" or "composition," it allows the voicing of a concern that may be overlooked when artists "perform" a "score."

These scores (or artistic traditions in general) are the material that re-emerges as again epistemically open in a meaningful artistic experimental system. It is set against a perceived epistemic closure that happens when such scores or traditions are simply re-performed as if new negotiations need not be entered into. At the site of the performance and under the conditions of tradition, an artist continually experiences and even produces epistemic loss, which the researcher in him or her attempts to suspend in ever new iterations. As Rheinberger (2008) suggests, quoting Thomas Kuhn, artistic research is also very much driven from behind, that is, driven forwards by the material and not pulled into the future through intellectual projection or speculation. The artistic researcher—perhaps more than his or her scientific counterpart—makes the future with eyes cast back, like Benjamin's angel of history, caught in a storm that "irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress" (Benjamin [1968] 1999, 258).

4 One may want to construct a difference between Romanticism and Idealism along these lines. According to the latter approach, art requires philosophy as its ultimate reflection (Schelling [1806] 1985, 573; Hegel 1975, 1:1), while for an early Romantic approach art may be imbued with the ability to provide for such reflection directly (Benjamin 1996; Lacoue-Labarthe and Nancy 1988). Naturally, a *philosophical* description of this artistic option will run into difficulties. For a recent discussion of the question of aesthetics see Halsall, Jansen, and O'Conner (2008, particularly the chapter by Wolfgang Welsch). For my own attempt to link early Romanticism with artistic research see Schwab (2008).

## REFERENCES

- Bachelard, Gaston. 2002. *The Formation of the Scientific Mind: A Contribution to a Psychoanalysis of Objective Knowledge*. Translated by Mary McAllester Jones. Manchester: Clinamen. First published 1938 as *La Formation de l'esprit scientifique: Contribution à une psychanalyse de la connaissance objective* (Paris: Vrin).
- Benjamin, Walter. (1968) 1999. *Illuminations*. Translated by Harry Zorn. London: Pimlico. This translation first published 1968 (New York: Harcourt, Brace & World).
- . 1996. "The Concept of Criticism in German Romanticism." In *Selected Writings, Volume 1, 1913–1926*, edited by Marcus Bullock and Michael W. Jennings, 116–200. Cambridge, MA: Harvard University Press.
- Borgdorff, Henk. 2012. "Artistic Practices and Epistemic Things." In *The Conflict of the Faculties: Perspectives on Artistic Research and Academia, 184–98*. Leiden: Leiden University Press.
- Deleuze, Gilles. 1968. *Spinoza et le problème de l'expression*. Paris: Éditions de Minuit.
- Halsall, Francis, Julia Jansen, and Tony O'Connor, eds. 2008. *Rediscovering Aesthetics: Transdisciplinary Voices from Art History, Philosophy, and Art Practice*. Stanford, CA: Stanford University Press.
- Heidegger, Martin. 1977. "The Age of the World Picture." In *The Question Concerning Technology and Other Essays*, translated by William Lovitt, 115–54. New York: Harper & Row.
- Hegel, George Wilhelm Friedrich. 1975. *Aesthetics: Lectures on Fine Art*. Translated by T. M. Knox. 2 vols. Oxford: Oxford University Press / Clarendon Press.
- Lacoue-Labarthe, Philippe, and Jean-Luc Nancy. 1988. *The Literary Absolute: The Theory of Literature in German Romanticism*. Translated by Philip Barnard and Cheryl Lester. Albany: State University of New York Press. First published 1978 as *L'absolu littéraire: Théorie de la littérature du Romantisme allemand* (Paris: Éditions du Seuil).
- Ott, Michaela. 2010. *Affizierung: Zu einer ästhetisch-epistemischen Figur*. Munich: Edition Text + Kritik.
- Pickering, Andrew. 2008. Preface to *The Mangle in Practice: Science, Society, and Becoming*, edited by Andrew Pickering and Keith Guzik, vii–xiv. Durham, NC: Duke University Press.
- Popper, Karl. (1959) 2002. *The Logic of Scientific Discovery*. London: Routledge. First published 1935 as *Logik der Forschung* (Vienna: J. Springer). This translation first published 1959 (London: Hutchinson).
- Rheinberger, Hans-Jörg. 1997. *Toward a History of Epistemic Things: Synthesizing Proteins in the Test Tube*. Stanford: Stanford University Press.
- . 2004. "Experimental Systems: Entry Encyclopedia for the History of the Life Sciences." *The Virtual Laboratory: Essays and Resources on the Experimentalization of Life*, Max Planck Institute for the History of Science, Berlin. Accessed 12 January 2013. <http://vlp.mpiwg-berlin.mpg.de/essays/data/enc19?p=1>.
- . 2008. "Experimentelle Virtuosität." In *Interesse für bedingtes Wissen": Wechselbeziehungen zwischen den Wissenskulturen*, edited by Caroline Welsh and Stefan Willer, 331–42. Munich: Wilhelm Fink.
- . 2010. *An Epistemology of the Concrete: Twentieth-Century Histories of Life*. Durham, NC: Duke University Press. First published 2006 as *Epistemologie des Konkreten* (Frankfurt am Main: Suhrkamp).
- . 2012. "Experimental Systems: Difference, Graphematicity, Conjunction." In *Intellectual Birdhouse: Artistic Practice as Research*, edited by Florian Dombois, Ute Meta Bauer, Claudia Mareis, and Michael Schwab, 89–99. London: Koenig Books.
- Schatzki, Theodore R., Karin Knorr Cetina, and Eike von Savigny, eds. 2001. *The Practice Turn in Contemporary Theory*. London: Routledge.
- Schelling, Friedrich Wilhelm Joseph von. (1806) 1985. "Über Wissenschaft der Kunst, in Bezug auf das akademische Studium." In *Ausgewählte Schriften, Band 2, Schriften 1801–1803*, 567–77. Frankfurt am Main: Suhrkamp.



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- Schwab, Michael. 2008. "First, the Second: Walter Benjamin's Theory of Reflection and the Question of Artistic Research." *Journal of Visual Art Practice* 7 (3): 213-23.
- . 2013. Introduction to *Experimental Systems: Future Knowledge in Artistic Research*, 5-14. Leuven: Leuven University Press; Ghent: Orpheus Institute.
- Shapin, Steven. 1984. "Pump and Circumstance: Robert Boyle's Literary Technology." *Social Studies of Science* 14 (4): 481-520.

