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Experimental Systems Future Knowledge in Artistic Research

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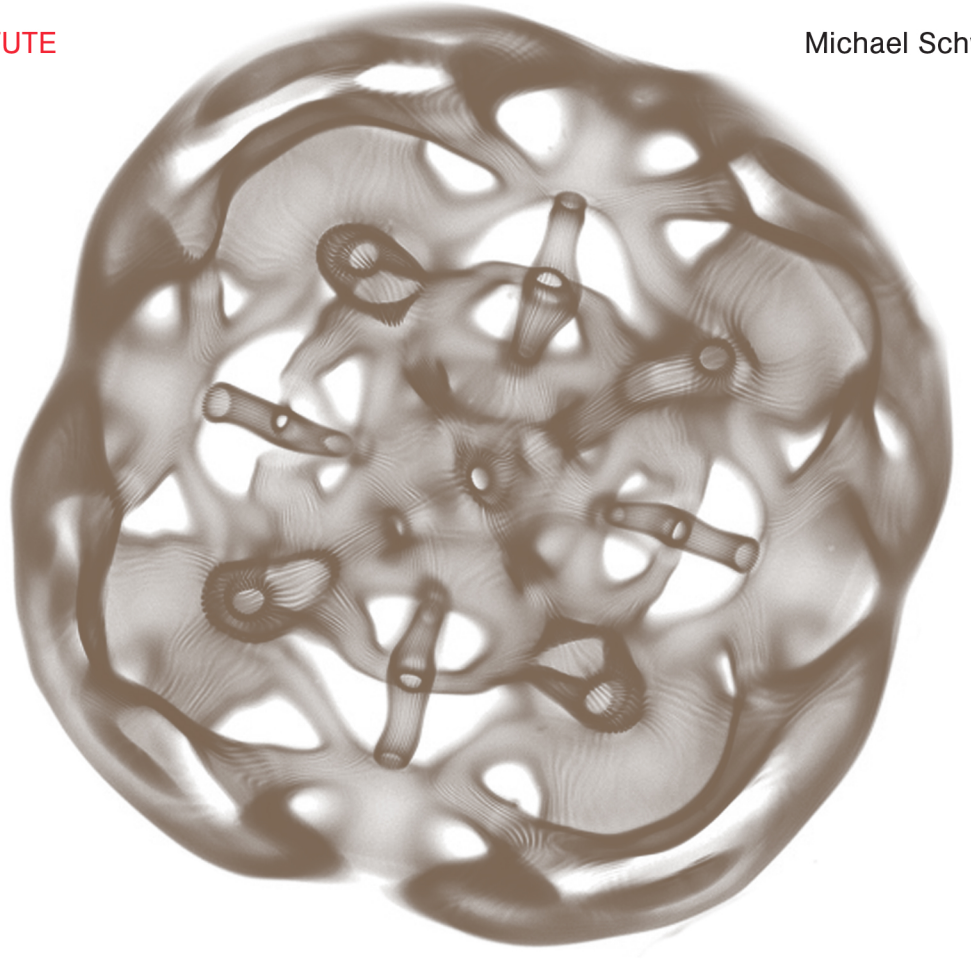

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Experimental Systems

Future Knowledge in Artistic Research

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Introduction

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According to Stephen Shapin's explanation of Robert Boyle's experiments with an air pump, a "matter of fact" is a manufactured piece of knowledge that exists on its own account and is, as such, a concept upon which a new empirical science could be built (Shapin 1984; Shapin and Schaffer 1985). When, for example, Boyle demonstrated in experiment twenty-seven that the ticking of a watch could no longer be heard after the air had been removed from the pump, this new and surprising matter of fact existed from that moment onwards, calling for scientific investigation and theoretical explanation.

To some extent, works of art may also exhibit such matter-of-factness. While works of art are produced through culturally and sometimes technically complex processes, they often appear self-determined and *just there*, as if they were natural objects. In aesthetic philosophy, this aspect has historically been discussed as the autonomy of aesthetic judgement (Kant 1987) or the work of art (Adorno 1984), while in more recent accounts, such as in Jacques Ranciére's (2004, 23) definition of the "aesthetic regime of art," an artwork is "a product identical with something not produced." Traditionally, artists have achieved matter-of-factness through "*complete* familiarity" with the style, as Igor Stravinsky ([1942] 1970, 128, my emphasis) demands of the performer, or, more recently, through what has been called "deskilling" (Buchloh 2004), a process of unlearning artistic habits, which may, indeed, imply a "reskilling" (David Joselit in Baker et al. 2000, 208) precisely in support of artworks as matters of fact. For example, Helmut Lachenmann (2004, 64) demands that performers of his "musique concrète instrumentale" re-learn their playing techniques in order to evoke "a mode of listening previously excluded from the musical medium ... which treats sound as a phenomenon of nature."

It is striking that in a matter of fact the difference between a culturally produced and a natural phenomenon disappears, which leads Bruno Latour (1993) to doubt whether "culture" and "nature" actually pre-exist such hybrid objects. Rather than drawing ontological conclusions, if we focus on the particular type of experience that matters-of-fact entail, links with artistic practice may be made that allow one to suggest how something like "artistic research" can be possible. These do not arise from setting art in contrast to science; rather, they constitute an attempt to understand what the "practice turn in contemporary theory" (Schatzki, Knorr Cetina, and Savigny 2001) might be when it includes artistic modes of investigation.

The chapters collected in this book trace some links between experimentation and artistic practice—by comparing the laboratory and the studio, by focusing on material practice, by describing systems of creation, or by highlighting temporal or experiential dimensions. Across these—sometimes contradictory—approaches, shared ground may sometimes be difficult to see, perhaps appearing only on the horizon, as idealised pure research practice that is outside the historical constraints within which any one approach operates, be it artistic practice, history of science, art criticism, or science and technology studies. However, what may look like contradictions caused by the various approaches to the topic may also be due to differences in the research practices themselves, which are presented in the chapters and which remain materially situated and historically distinct.

Nevertheless, to create a conceptual neighbourhood of research practice, Hans-Jörg Rheinberger's research into what he calls "experimental systems" has been chosen here to provide some common concepts and to focus critical reflection. Rheinberger is particularly relevant because he has suggested some form of proximity-in-difference between artistic and scientific research (2012b, 13), an approach that is supported by a limited set of secondary literature in which reference to his work is made (such as Bexte 2012; Blättler 2010; Boulboullé 2007; Hensel 2009; Rickli 2011, 2012; Schenker and Rickli 2012; Schmieder 2010; Schwab 2012a).

Thus the question to be asked is not whether the artist is also a scientist or vice versa, but what material and practical ground can be suggested for experimental research of any kind and how this research is conditioned by and develops into the various epistemic contexts within which it is situated. Methodologically, the book assumes that for the empirical sciences, and molecular biology in particular, Rheinberger's work may already provide such a grounding; each chapter seeks to extend this to include limited selections of artistic projects, practices, or lines of thought that originate from contemporary art, art history, or criticism. This necessarily requires fresh interpretations of Rheinberger's work, which, as it is applied to art, may either be adapted and reconfigured or criticised. It would be fascinating to return to the history of science with these interpretations in mind in order to investigate whether an understanding of experimentation in artistic research may add dimensions to this concept that are relevant also to experimental science.

Rheinberger's thinking allows one to unpack some of the material implications of matters of fact that more anthropological or sociological approaches may miss. Rheinberger suggests that matters of fact are complex spatiotemporal entities that emerge not in individual experiments but rather in complex experimental settings—"experimental systems." A move from a single experiment to an experimental system is necessary since it is the system that provides the context *against which* an experiment carries meaning. When looking at the artistic examples that are provided in this book, it is not always easy to tell what kind of systems are set in motion, if the word "system" is indeed appropriate to describe a sense of experimental coherence within an artist's practice, a body of work, or even a school. The very specific understanding of experimentation through

experimental systems that Rheinberger suggests may thus limit the usefulness of his work in the context of artistic research and the criticism that may potentially be raised. At the same time, drawing the circle slightly wider—by including examples of artistic experimentation that do not dovetail into what is in the end a model derived from a subset of science—allows for modes of artistic thinking to come to the fore that may otherwise be missed. Thus, while the phrase "experimental system" in both the title of this book and in its chapters does refer directly to Rheinberger's work, it is generally applied in a slightly more elastic way.

A more open approach to experimental systems seems permissible because they intrinsically require wider experimental cultures as well as an "experimental spirit" [*experimentellen Geist*] (Rheinberger 2012b, 13). During my conversation with Rheinberger (chapter 15 of this book), it became clear that a particular type of work ethic, experience, and sensibility is required in experimental systems that can also be found in artistic practice: dedication to a limited sets of materials, attention to detail, continuous iterations, and the inclusion of contingent events and traces in the artistic process, allowing the material substrata to come to the fore as a site where traces are assembled.

To unpack experimental systems, Rheinberger (1997, 102–13; 1998) distinguishes between two distinct but interdependent types of spaces: the graphematic and the representational space. The graphematic space may be defined as a space constituted by material practice that transforms what is initially at hand ("stuff") into an object of investigation (an "epistemic thing"). At the same time, this object of investigation is also an element in spaces of representation within which it carries signification. In other words, an epistemic thing *is* a particular point of contact between those two types of space, where the one pierces or folds into the other. As Rheinberger (1997, 28) writes, experimental systems "inextricably cogenerate the phenomena or material entities and the concepts they come to embody." In what follows, I offer a more detailed discussion of the relationship between the graphematic and the representational space to suggest an approach that makes room for options that artistic research brings to the table, such as those discussed in this book.

Initially, the epistemic thing may be conceived as nothing but an empty point of contact between the graphematic and the representational space. It is first of all an unknown that enters representation as a question: *what is this that I suddenly have in front of me?* In its most basic form, one may conceive of research as the ability to register a question with an unknown answer in a space of representation. The initial question, however, cannot strictly speaking represent anything; it only provides a site where the two spaces touch and where future knowledge can be inscribed and has, in fact, already been inscribed from the moment of contact. This is to say that even when we have gained representational content by having learned more about the epistemic thing, we continue this initial inscription, shaping and re-shaping the epistemic thing "as a traceable conformation" (Rheinberger 1997, 111, punctuation adjusted).

While this shorthand description may plausibly summarise how experimental research contributes to scientific knowledge, it is by no means clear if such a theory can be transposed to the arts. Three major problems deserve particu-

lar attention. First, there is an inner relationship between artistic practice and experimentation that makes it difficult to identify what kinds of (credible) contemporary art may *not* rely heavily on experimentation either in the production or reception stage. As a consequence, differentiating between artistic practice in general and artistic research practice in particular is problematic; both seem to be doing similar things, such as applying paint to a canvas or operating keys on a piano driven by the idea of creating or re-creating something "original."

Second, the way in which something can be "original" has become complicated in the course of the twentieth century, making ideas of "progress" or "future" in art a thing of the past. As I have discussed elsewhere (Schwab 2009), there is a difference between a practical and a theoretical approach to artistic research, which could be mapped onto Rheinberger's distinction between graphematic and representational space. While the relevance of artistic research that can be associated with the graphematic space—that is, with materially and socially bound practice—has increased over the last decades, and while processes of inscription dominate artistic practice, there is a widespread reluctance, if not refusal, to partake openly in the knowledge society. There are very good artistic reasons to hesitate, given that an engagement with such epistemic spaces completely transforms the work; but there are also less good reasons—for example, when the exquisite status of the art object that developed in the later part of the nineteenth century is, consciously or not, maintained to maximise profits (Graw 2009).

Third, we still live in a "so-called crisis of representation, in which an essentially realistic epistemology, which conceives of representation as the reproduction, for subjectivity, of an objectivity that lies outside it[,] projects a mirror theory of knowledge and art" (Jameson 1984, viii). While this may be less so today, in terms of artistic research, it remains unclear what kinds of representational spaces could allow for more moderate and perhaps local versions of "objectivity," in particular in the context of academia. For instance, outputs from artistic research remain torn between practice and theory components; alternative models for the academic publication of artistic research, such as the notion of "exposition" (Schwab 2011; 2012b; 2012c), with which the *Journal for Artistic Research* (*JAR*) operates, have not yet been sufficiently developed.

Although it could be concluded that for these and other reasons more preparatory work on the part of artistic research methodology and epistemology is required before historically tested concepts such as "experimental systems" can properly be debated, it can also be argued that provisional discussions such as those collected in this book may have an important part to play while the field is still in development. Indeed, despite such difficulties, such discussions can serve to acknowledge that limited sets of materials and unique practices, brought together as part of longstanding engagements with meaning that has not yet been achieved, bring about occasional surprises and a sense of movement that is beyond one's control.

Quoting François Jacob's assertion that experimental systems are "machines for making the future," Rheinberger (1997, 28) is quite clear that such movement—uncontrolled and unpredictable—has consequences for the future. For

a historian, a link between past experimental events and the knowledge that they produced—also in the past, but after the event—seems natural and also applicable to the arts. For example, Marcel Duchamp's readymades, created at the beginning of the twentieth century, seem to have led to the conceptual art of the 1960s. However, an artist immersed in experimentation and lacking (yet) the advantage of historical hindsight may well ask, "which future?" Such an artist, after all, does not know how the future will unfold, which parts of the work may develop or, for that matter, if there is a real future to be had. In other words, "future knowledge" cannot be known as future knowledge when it is made; only a sense of potentiality can guide the researcher.

This brings one back to the connection between graphematic and representational space. It seems more than likely that "history" is one of those representational spaces and that "future" is the historical representation of material potentiality that one has, makes, or experiences in the graphematic space. While there is nothing wrong with "future" *per se*, aspects of representation in Rheinberger's concept of "future" render that concept problematic in contemporary art for the reason discussed above. It thus seems necessary to suggest that for artistic research the link between potentiality and future needs to be relaxed, and to ask how else research can register in a representational space.

Referring to Herman Melville's *Bartleby, the Scrivener*, both Gilles Deleuze and Giorgio Agamben suggest that potentiality can be indicated by a refusal to represent that in itself escapes representation. Such potentiality, in Deleuze's words, must "remain enigmatic yet nonarbitrary; in short, a new logic, definitely a logic, but one that grasps the innermost depths of life and death without leading us back to reason" (Deleuze 1997, 82). For Agamben, "the experiment that Melville entrusts to Bartleby" results in an "experience that has thus retreated from all relations to truth, to the subsistence and nonsubsistence of things" (Agamben 1999, 260–61). Although it may not be necessary to link this "new logic" to "the innermost depths of life and death," a more complex connection between the graphematic and the representational space can be conceived that, in artistic research, may escape futures in which the potentiality of epistemic things is reduced to facts of (propositional) knowledge. In other words, artistic research may produce futures that do not function primarily as (future) handles on a past.

A reconsideration of "future" leads back to Derrida, according to whom *différance*, which motivates the graphematic space, is also deferral. *Another, future* representation is required, which puts into (epistemic) perspective what the graphematic space delivers to representation; this, in turn, fixes an epistemic thing as a past that projects a future. However, could epistemic things also be fixed in alternative representational spaces that are not those of history? Could other representations in other representational spaces be found that operate ahistorically, that is, simultaneously or in different temporal spaces, to the same epistemic end as history does? In research, could one be deferred to another space rather than into historical time?

There is insufficient space in this introduction to attempt to answer such questions; I offer them only to suggest that epistemic things may not always only unfold historically and that the "future knowledge in artistic research" that

the subtitle of this book announces may signal modes of representation, some of which still need to be invented, as alternative spaces within which artistic research can be registered. While many texts in this book accept Rheinberger's notions of "experimental system" and "epistemic thing," the production of a "future" is not always deemed as fundamental to the arts as Rheinberger suggests that it is to the sciences.

This issue becomes most apparent with regard to technology, in particular to "technical objects," which, according to Rheinberger (1997, 245), "embody the knowledge of a given research field at a given time." Technical objects—in the form of apparatus, infrastructures, processes, etc.—can at the same time be characterised as consequences *of* experimental systems and investments *into* experimental systems. In the latter capacity, they make new epistemic things possible, which in time and in other functional contexts may be re-invested. Technology is presented as resource *and* destination for experimental systems, acting as past *and* future and thus as a historical horizon. Relationships between epistemic things and technical objects inside experimental systems are thus necessarily functional. Roles can shift in ways that depend on the practical development of the experimental system (Rheinberger 1997, 30).

There are problems with technology as a resource—for example, regarding access or economic constraints that may influence the course that an experimental system takes over time. But even more problematic for artistic research is the characterisation of experimental systems as producers of technology. Even if we interpret "technology" very broadly—for instance, including formal solutions to artistic problems of the kind that art historian George Kubler ([1962] 2008) organises in formal sequences, such as Greek vase painting—the implication remains that contemporary artistic output can be "black-boxed" to operate functionally in a new experimental setting (Rheinberger 1997, 30). In other words, only within a modernist (that is, a formalist) artistic context can artistic experimental systems feasibly produce results (that is, formal solutions) that have a utility in future research comparable to the enzymatic sequencing of DNA that Rheinberger (1997, 29) mentions as an example of an epistemic thing that developed over time into a technical object. From the vantage point of contemporary art, the dialectic between epistemic thing and technical object may simply not be transferable to experimentation within artistic research; to transfer it raises expectations of utility that are regressive and potentially detrimental to artistic practice.

To be sure, whenever the question of experimental systems in the arts is raised, Rheinberger (2009, 2012a, 2012b, chapter 15 of this book) is quick to add that art and science are not identical, nor need the types of activities that they represent be similar in any way. However, he also suggests that "the decisive task lies in finding a shared ground ... that makes it possible to characterise the relationship between science and art in a way that emphasises the recognition of the *unpredictable*, *without* ... refusing the right for a difference that potentially is irreducible" (Rheinberger 2012b, 13, my translation). In the same spirit, this book, despite the diversity of opinions and approaches that it presents, brings various understandings of "experimental system" into play in the context of artistic practice: some of them support and some of them question the

concept in the context of artistic research. All authors affirm, however, that the notion of an "experimental system," together with its conceptual framework, can effectively be employed to probe more deeply the experimental practices and epistemic dimensions that may be associated with artistic research.

This book follows what can be seen as a narrative trajectory across its fifteen chapters, closing with a conversation with Rheinberger entitled "Forming and Being Informed," in which I ask him about such ideas as "experimental spirit," "experimental space," and the heterogeneity and epistemic "thickness" that is associated with the latter. The way in which space is constituted raises questions concerning technology, and it becomes clear that, in Rheinberger's view, the graphematic research activity remains self-determining. Then follow some passages in which Rheinberger talks about his own experimental methodology and the possible relationships between science and art. The conversation does not refer in any direct way to the chapters; what Rheinberger says should not be read as commentary.

The narrative trajectory starts with "A Theory of Experimentation in Art? Reading Kubler's History of Art after Rheinberger's Experimental Systems," by Stefanie Stallschus, in which Kubler's theory of art—an important inspiration for Rheinberger—is read as a theory of experimentation while keeping in mind the concept of "experimental system." We then fast-forward to the work of a contemporary artist; in "Electrical Images: Snapshots of an Exploration," Hannes Rickli describes his recent research project, his collaboration with natural scientists, and the types of labour and choices that may be involved when an artist rethinks and artistically reworks experimental setups. In "Material Experiments: 'Phenomeno-Technology' in the Art of the New Materialists," Susanne Witzgall focuses on material and experience rather than form and technology in the work of artists such as Karla Black and Nina Canell, suggesting ways in which contemporary artistic practice, even if not explicitly experimental, may share some of the concerns that Rheinberger reflects in his notion of experimental system. Virginia Anderson demonstrates in "Whatever Remains, However Improbable: British Experimental Music and Experimental Systems" that music is particularly suited to expanding notions of material and to scrutinising the liberties that artists can take. Focusing on British experimental music and especially the approach to research within the Scratch Orchestra, Anderson argues that for artistic research, a distinction between real and fictional material may not matter even when a strict experimental methodology remains in place. In "Of Arnold Schoenberg's *Klavierstück* op. 33a, 'a Game of Chess,' and the Emergence of New Epistemic Things," Darla M. Crispin turns to the role of the performer, arguing that experimental approaches that focus on the realities of performance may result not only in better understandings of the works performed but, ultimately, in better performances.

The knowledge with which artists operate and the artistic research they conduct can be seen as intricately interwoven with different sets of knowledge and different research methodologies. Discussing a specific experimental system in "Research Organs as Experimental Systems: Constructivist Notions of Experimentation in Artistic Research," Peter Peters frames artistic con-

cerns in the context of an interdisciplinary research project by approaching artistic research through "STS"—the field of Science and Technology Studies. A comparable framework can be applied to artists' studios, as Gabriele Gramelsberger suggests in "A Laboratory View of Art"; this could allow a new field of "studio studies" to analyse concrete experimental processes that guide artists in their practice, replacing top-down definitions of artistic research. In "Artistic Practices and Epistemic Things," Henk Borgdorff suggests that one should identify artworks as epistemic things to highlight their essential incompleteness, the role they play in artistic research, and their capacity to enable knowledge to be differently "published" and experienced. In her chapter "Artistic Experiments as Research," Elke Bippus considers the relationship between contemporary art and experimental science, noting that both require intricate knowledge of the systems within which they operate and openness to departures from those systems in order to accommodate novel insights and experiences. Focusing on the importance of "surprise" that accompanies epistemic things as they emerge, Stephen A. R. Scrivener, in "Toward a Practice of Novel Epistemic Artefacts," argues that in design research in particular, approaches that focus on problem solving and reflective practice may limit a researcher's creative options, while a theory of experimental systems can be used to support outcomes that remain surprising. Paulo de Assis, in his chapter "Epistemic Complexity and Experimental Systems in Music Performance" proposes to open up the concept of "work" to show the complex relations that determine a work's meaning, thus allowing artists to manipulate these relations experimentally as a way to enhance our understanding in practical terms. By returning to Hume's conception of the critic, Paolo Giudici argues in "Criticism and Experimental Systems" that the epistemic role that experimental systems can play in art need not and perhaps cannot be restricted to artists and that they must involve modes of reception and judgement, which raises ethical questions regarding the autonomy of experimental systems. In the penultimate chapter, "Epistemic Events," Neal White makes the point that an extended understanding of experimental systems allows for a redefinition of the role of the artist within wider culture. Relating epistemic things to event-structures, a notion developed by the artist John Latham, White argues that artistic research can engage with the temporal forms that synchronise social and cultural life.

Beyond this, the order of the chapters is fairly loose, inviting connections to be made across and within the trajectory—for instance, regarding notions of material, artistic research, or options for contemporary practice. A consistent conviction of all chapters, however, is the *effectiveness* of Rheinberger's work when applied to current concerns in art.

The word "effectiveness" was used by Paulo de Assis, with whom initial ideas for a book on experimental systems were developed, during a conversation at the Orpheus Institute in Ghent. I am a researcher in his ERC-funded project "Experimentation Versus Interpretation: Exploring New Paths in Music Performance in the Twenty-First Century," in which I am contributing to the development of epistemological, methodological, and aesthetic frameworks for artistic research. This book is my initial output in this endeavour.

I would like to thank William Brooks, the series editor for Orpheus Institute publications, and Edward Crooks, the copy editor for this volume, with whose help and dedication the book was finished on time and to a standard that I really appreciate. I also would like to thank Peter Dejans (director of the Orpheus Institute), his team in the office, and all ORCiM research fellows for their ongoing support. Thank you also to the Institute for Contemporary Art Research (IFCAR), Zurich University of the Arts (ZHdK) for supporting the translation of Hannes Rickli's chapter. I am most grateful to Hans-Jörg Rheinberger for the time he invested in this book during a study day at the Orpheus Institute and for the interview that was conducted in his office at the Max Planck Institute for the History of Science in Berlin.

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