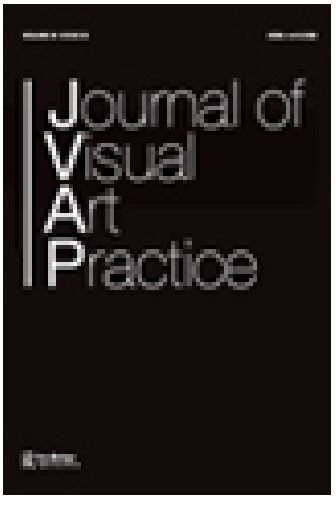

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Experiment! Towards an artistic epistemology

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On the basis of a notion of experimentation derived from Hans-Jörg Rheinberger's concept of 'experimental system', which he developed in the context of twentieth-century experimental science, this paper sketches a possible route into a genuine artistic epistemology. While experimental systems are highly conceptual in nature, they are actually meant to produce material, epistemic excess – epistemic things – that enter the world first as unknowns. Given this initial lack of knowledge, the article argues that it is less helpful to decide whether any concrete epistemic thing is fact or fiction; rather, an artistic epistemology is suggested that focuses on the radical individuality of such a thing and the way in which artistic research practice may need to protect its individuality as a site for particular knowledges. This implies a critique of Rheinberger's emphasis on historicity in experimental systems, a critique which is explained with reference to two works by Marcel Duchamp: *Fountain* and *Three Standard Stoppages*. While the former arguably changed the history of art, the latter is said to have had a much greater effect on Duchamp's practice and understanding.

Keywords: artistic research; experimental systems; experimentation; artistic epistemology

From mirror to lamp

The production of knowledge and the communication of knowledge are not distinct activities. Rather, as Steven Shapin (1984, 481) says, 'speech about natural reality is a means of generating knowledge about reality'. Knowledge does not exists before communication, nor is this communication first private and then public. To illustrate this point, Shapin introduces the case of Robert Boyle, whose experiments in pneumatics 'not only produced new knowledge of the behaviour of air, [but also] exhibited the proper experimental means by which legitimate knowledge was to be generated and evaluated' (1984, 482). Thus, according to Shapin, Boyle invented two things: the air pump and experimental science.

Although Boyle built his air pump and conducted his experiments in the early 1660s, in 1767 when Wright of Derby painted his picture *An Experiment on a Bird in the Air Pump,* air pumps were comparatively commonplace; despite this, such experiments were still conducted in front of a (often paying) public (Stewart 2004). It is, however, not sufficient to interpret *An Experiment on a Bird* as a mere representation of an experiment, since this would not account for the opening of art itself towards experimentation that the painting also conveys.

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In Wright of Derby's case, science's appearance in art does not follow our current stylistic expectations of a more or less clinical setting. Two of his related candlelight scenes might help situating *An Experiment on a Bird*. His 1765 *Three Persons Viewing the Gladiator by Candlelight* uses the painted light of the candle to bring out the contours of the sculpture, while his 1766 painting *Philosopher Giving a Lecture on the Orrery, in which a Lamp is put in place of the Sun* not only substitutes the art object in the centre of the painting with a scientific demonstration but also incorporates the light functionally, that is, the lamp as active player standing in for the sun. *An Experiment on a Bird*, while remaining structurally similar, moves on from the depiction of a demonstration to that of an experiment and, in so doing, fills the scene with even more drama. Emotions seem to increase from one painting to another as science and experimentation appear.

In all these paintings, the artificial illumination is of importance. In his book *The Mirror and the Lamp: Romantic Theory and the Critical Tradition*, M.H. Abrams makes the point that Romantic artists, in shifting from mirror to lamp metaphors, expressed a changed function of art. Within the 'mirror' or representational stage, art truthfully depicts or imitates what is at hand, making likeness a point of reference for the work of art; in its 'lamp' stage, art on the other hand radiates a light, which it does not passively receive. Such illumination is associated with imagination and genius and with a shift of the kind of truth art can tell and how it can tell it. To illustrate the 'mirror' stage, Abrams (1953, 57) quotes John Locke:

> For, methinks, the *understanding* is not much unlike a closet wholly shut from light, with only some little openings left, to let in external visible resemblances, or *ideas* of things without; would the pictures coming into such a dark room but stay there, and lie so orderly as to be found upon occasion, it would very much resemble the understanding of a man, in reference to all objects of sight, and the *ideas* of them. (Locke [1689] 1996, chap.11, p. 65)

Abrams (1953, 60) contrasts this with Wordsworth who says in *The Prelude*, Book II:

> An auxiliary light
> Came from my mind, which on the setting sun
> Bestowed new splendour
> (Wordsworth 1951, 507)

Epistemic matters

Before discussing art in greater detail, I would like to focus a little longer on Boyle's experiments with the air pump or, rather, how his experiments with the air pump occasioned *matters of fact*, which 'without owing it to our reasoning faculty, we either acquire by the immediate testimony of our senses, and other faculties, or, it accrues to us by the communicated testimony of others' (Boyle 1725, 249). Following Boyle and according to Shapin (1984), a piece of understanding that is produced in an experiment is only a matter of fact if it is material (i.e., not due to an overarching system of knowledge) and not private, as which the knowledge of alchemists, for example, might be seen. Only the combination of matter *and* discourse gives experimentation its own distinct identity in the field of knowledge.

This makes experimentation not only an epistemic project but also, as Shapin argues, deeply social.

Hans-Jörg Rheinberger (1997) calls such a combination of matter and discourse 'experimental system'. Experimental systems are complex apparatuses for the production of knowledge. As Shapin (1984, 486) says, once set up, '[t]he machine [in this case the experimental system "air pump"] was then ready to produce matters of fact'. Crucially, an experimental system 'plays out its own intrinsic capacities' the more the experimenter 'learns to handle his or her experimental system' (Rheinberger 1997, 24) until it is able to surprise the experimenter with its own characteristics, unanticipated by the system's creator, in what Rheinberger calls 'unprecedented events' (Rheinberger 1997, 133). By this, we should understand that experimental systems are designed to be open, so that the deployed knowledge results in ruptures from which unexpected new objects relevant to knowledge emerge, which Rheinberger calls 'epistemic things'. Since they are organised around the unknown, experimental systems are very different to closed systems of, for example, industrial production, where specific outcomes are anticipated and controlled (Rheinberger 2013, 201).

As Shapin suggests, epistemic things have a matter-of-fact character, but for Rheinberger, despite being matter of fact, an epistemic thing is essentially vague. 'This vagueness is inevitable because, paradoxically, epistemic things embody what one does not yet know' (Rheinberger 1997, 28). Being conceptually underdetermined represents a strength rather than a weakness, because epistemic things are first of all questions that promise a future (of possible knowledge). The practice of experimentation thus also repositions theory: theory emerges from experimentation rather than being tested by it. Rheinberger calls the experimental mode by which epistemic things emerge 'thinking' (Rheinberger 1997, 31). However, the moment epistemic things become conceptually stable, they move into the technological fabric of the experimental system – they become 'technical objects' ready to be used in the same or future experimental systems or turned into commodities for the benefit of those with investment in the experimental system.

An understanding of experimentation along the lines of Shapin and Rheinberger is only possible after a deconstructive operation has taken place, which puts into question the origin of knowledge in a 'preconstituted' world (Merleau-Ponty 1968, 34) that either awaits discovery or fabricates it. Through experimental systems, we have the ability to create matters of fact, which we paradoxically believe have been there all along. In other words, it appears as if my knowledge of the world is a reflection of the world as it is and not an elaborate coproduction. Suggesting this kind of agency, however, does not mean that the knowledge we end up with is a cultural construct; it only means that epistemic things lacking identity are strange natural/cultural 'hybrids' (Latour 1993) or 'proto-objects' (Schwab 2012), which, once they 'decay' into knowledge, become associated with either nature or culture as something 'found' or 'made'. Consequently, if we attend to the *practice* of experimentation, we loose our bearings as to who the actual maker of knowledge is while we discover non-identified yet materially specific *things* that make an epistemic difference.

Writing

The social dimension of experimentation stems from the agreement that has to be reached whereby a particular *something* resulting from the experimental system is, in fact, matter-of-fact. This something as matter-of-fact does not strictly speaking exist before such (public) negotiation, making an epistemic thing not only a piece of knowledge but also an 'artefact of communication' (Shapin 1984, 484). The status of the artefact, however, is different to other artefacts, insofar as this artefact is not human- but system-made.

To be counted as matter-of-fact, what the experimental system produces must be witnessed by a public as large as possible – making the demonstrations depicted by Wright of Derby epistemically more important than they may otherwise appear. Another form of witness comes into play when a matter of fact is reproduced in a different, perhaps, remote location, whereby, through using a different apparatus and under different conditions, what a previous experiment has demonstrated is proved as matter of fact to an extended public. Both the communicative and the material role of replication allow for a slippage from concrete experiment to universal theory: if a large and diverse group of people believes something to be a matter of fact in a number of different experiments, can we not assume it to be a matter of fact in all possible cases and for all possible witnesses?

In addition, perhaps the most radical extension of a witnessing public happens when a matter of fact is accepted on the basis of mere description and not direct observation, which Shapin calls 'virtual witnessing' (Shapin 1984, 490). To witness, it is claimed, does not require presence, since according to Shapin (1984, 491) 'we should also appreciate that the text itself constitutes a visual source'. On the most basic level, the insertion of illustrations into the text provides visuality, in particular if images are naturalistic, creating the impression of seeing a document and thus a trace of the actual experiment. Moreover, visuality can also be part of the language itself since it can allow an experiment to be 'seen' in one's imagination. Thus, visuality can be scattered across all the different building blocks of a text. This turns the mind into a form of laboratory where understanding what to do can replace actually doing it, apparently without much epistemic loss.

If there is not first a theory (or hypothesis), then an apparatus (or experimental system) and finally a report (or publication), as if one was the source for the others, we can with Shapin claim that technology does not stop where witnessing and writing begins, but that material, social and literary technologies are all deployed in 'the mechanics of fact-making' (Shapin 1984, 483).

As in everything *practice-based*, we tend to think writing is secondary while the primary activity is the making (of art, for example). At the same time, if one gives credibility to deconstruction, we might also conclude that this backward projection of an origin is a necessary product of a writing process; that is, without an originary writing we would never *know* (art) making as primary activity. Writing is then always already at play in the making of a work, as it is in the literal writing of a dissertation, catalogue essay or review. Thus, technologies that very productively make matters of fact make these matters of fact only by disappearing within them: the invisible side of visibility producing visuality.

Realism and reality

Shapin's description of Boyle's 'literary technology' can be linked to what Walker Evans referred to as 'documentary style' photography. In an interview with Karl Katz in 1971, Evans said concerning 'documentary photography':

> When you say 'documentary', you have to have a sophisticated ear to receive that word. It should be documentary style, because documentary is police photography of a scene and a murder … That's a real document. You see art is really useless, and a document has use. And therefore art is never a document, but it can adopt that style. I do it. I'm called a documentary photographer. But that presupposes a quite subtle knowledge of this distinction. (Evans 1983, 216)

As a 'documentary style' photographer, Evans created images that looked like documents and appeared to have a use, when in fact, according to Evans' own definition, the opposite was the case. Documentary style, then, is a mode that gives the impression that an image is a document (i.e., matter-of-fact) when it is, strictly speaking, not. With the shift from the photograph as a document to the photograph as an artwork, the point of reference has also shifted. The police photographer references the murder that has taken place, while the artist references the image's appearance as document that allows for an image to pass as reality. Its appearance might in turn reference a reality, but this is not the primary concern of a documentary-style photographer, who acts more like a virtual witness than a real one. What guarantees the reality of a documentary-style photograph (or its matter-of-fact-ness) is that it looks like a document and not the actual authenticity of the depiction.

Evans characterised the documentary style in various ways. He linked it to Gustave Flaubert's literary style, which is at once realistic and objective, permitting no space for subjectivity to appear (Evans 1983, 70). It is also lyrical (that is, expressive), in so far as the non-lyrical documentary photograph was likely to fail in its documentary function (Evans 1983, 238). Evans himself has, in a posthumously published introduction of 1961, compared his way of working to that of a historian: 'Evans was, and is, interested in what any present time will look like as the past' (Evans 1983, 151). The historian's or archaeologist's view allows for a disinterested distance as 'an *aesthetic ambition*', as Peter Galassi has pointed out (2000, 87, my emphasis).

In his book *Vision and Painting: The Logic of the Gaze*, Norman Bryson approaches visibility (gaze) as technology (logic) when he analyses realism as an elaborate construction that produces a second reality in a text or in a painting (that is, in an artefact) in which our eye (or imagination) can navigate just in the same way as it would in our material reality. Within the history of art, Bryson traces the construction of reality back to questions of perspective, though he is very clear that perspective is only one historical precursor for realism and is not identical with it. More important than perspective for realism is an abundance of 'stuff' that does not give away its human-made, intentional purpose. It is, in fact, what is unnecessary or superfluous for the representation of an idea that makes an image real. To illustrate this point, Bryson compares Duccio's *Betrayal* (*c*.1309–11) with Giotto's *The Betrayal of Christ* (*c*.1305).

> The realist image, considered from a formalist standpoint, achieves part of its persuasiveness by including within itself information not directly pertinent to the task of producing meaning; information that is then read 'at a distance' from the visible work of meaning where *distance from the patent side of meaning* is interpreted as *distance towards the real*. The Giotto *Betrayal* is marked by a dramatic excess of information over and beyond the quantity required for us to recognize the scene; the Duccio *Betrayal* is not. (Bryson 1983, 56)

Following such a position, by copying all those unimportant details, we see all around us photography can be considered the most real, not only because of its indexical character (traces of light on film), but because it can, in fact, also be analysed as conveying reality through an abundance of contingent information.

If we accept the scientific production of matters of fact as being similar to the production of reality in art, we can perhaps highlight a relationship between experimentation and realism that is based on two key operations:

(1) The process of production of reality as matter-of-fact disappears behind a (spontaneously) appearing reality, i.e., human influence in this production is removed and at a distance; the most natural is the most artificial.
(2) What appears is *in excess* of our knowledge; we accept it as real on the basis of the promise of possible knowledge and not on knowledge already had.

Bryson calls this construction of visuality the 'logic of the gaze', which removes both the artist's hand and the audience's embodied subjectivity from a painting, since it is neither the artist nor the audience that controls meaning. Both aspects are woven together in a particular kind of practice. As Bryson says:

> Technically, each stroke of the painting must align itself, as it is being made, according to the vertical orchestration of the Gaze; the stroke's temporality is there, in the aorist and the future of the Gaze, and never in the deictic present of practice, of the body: the body itself is that which our painting always erases. (Bryson 1983, 120)

From experimental to conceptual art

Following this line of thought, one may imagine that experimental science and art-making merged in the 'experimental art' of the mid-twentieth century. Looking at the history of music, for example, William Brooks (2012) reports that experimental composers of the 1950s, such as Lejaren Hiller, were directly influenced by scientific working methods. However, composers such as John Cage seem to have been more troubled by notions of 'experimentation'. As Cage says:

> Formerly, whenever anyone said the music I presented was experimental, I objected. … Now, on the other hand, times have changed; music has changed; and I no longer object to the word 'experimental.' I use it in fact to describe all the music that especially interests me and to which I am devoted, whether someone else wrote it or I myself did. What has happened is that I have become a listener and the music has become something to hear. (Cage 1961, 7)

In other words, *narrow* definitions of experimentation that at the beginning of the century followed the theory-driven emphasis of science – which for Brooks (2012, 38)

amount to 'tests' rather than 'observations' – needed to be kept at a (critical) distance by leading artists of the time while the notion of 'experimentation', when it became fruitful for art-making, needed to shed at least some of its scientific implications.

In the visual arts, Anne Collins Goodyear (2004) traces a similar tension when she compares Gyorgy Kepes's work at the Center for Advanced Visual Studies (CAVS) at MIT with Billy Klüver's work for Experiments in Art and Technology (E.A.T.). In agreement with a comment by John Chandler and Lucy Lippard, Goodyear (2004, 621) associates Kepes with a top-down approach that was out of touch with contemporary artistic practice at the time while it idealised a bridge between art and science. On the other hand, Goodyear associates Klüver with a hands-on and bottom-up transformation of artistic practice that engages with technology and scientific working processes. However, in contradiction to art's possible epistemic relevance, according to Klüver, 'art cannot contribute anything to science' (quoted in Goodyear 2004, 626) although despite this, according to Goodyear, 'Klüver argued that art could redefine the goals of engineering' (Goodyear 2004, 627).

Edward A. Shanken (2002), analysing the work of Jack Burnham and his 1970 exhibition 'Software' at the Jewish Museum in New York, makes the point that at the end of the 1960s art-and-technology and with it the term 'experimentation' had lost out to the rise of conceptual art. By focusing on 'software', conceptual art refused to be determined by the application of any particular technology while challenging the role art was supposed to play in relation to either science or technology in what Shanken calls a 'meta-critical process' (2002, 432).

However, while there was certainly a development from experimental art to conceptual art during the 1960s, that the term 'experimentation' was dropped should not suggest that with it the very idea behind it became irrelevant. In fact, Rheinberger's theory of experimental systems can help explain both the relevance and the limitation of conceptual art: a move away from notions of 'experimentation' was necessary to overcome early twentieth-century scientific paradigms while extending the field to include the conceptual frameworks that have supported, amongst other things, precisely those paradigms. Thus, a post-conceptual return to experimentation – now as a bottom-up *and* epistemic process – may promise to do justice to engagements with material practice that have remained important to many artists despite the shift towards conceptualism.

Artistic experimental practice

Marcel Duchamp's 1917 work *Fountain* may be seen as the first work of art that treated 'art' as an experimental system, insofar as Duchamp manipulated the conditions (a set of objects called 'art' that defined what was deemed possible: Rheinberger's 'technical objects') in such a way that *Fountain* (an object initially seen as outside art: Rheinberger's 'epistemic thing') required the whole system ('art') to change should its existence as art object be acknowledged. While the ready-made before its 'discovery' as art object did not strictly speaking exist (and was thus for good reasons rejected for exhibition by the Society of Independent Artists in New York), after the event, it became one of the quintessential works of twentieth-century art, through which Duchamp transformed art's history giving art, as it were, a whole

new future, a process that Thierry de Duve in *Kant after Duchamp* (1996) analyses in great detail.

Particularly important for the present argument are two aspects. First, the making process of *Fountain* approaches art as a set of functional relations, that is, art is only functionally and not materially determined, rendering inconsequential the subsequent loss of the original material object. Second, with *Fountain*, art's point of reference shifts from the present to the future, since it is not the experience of a given material reality that matters but the speculation about the possible future of art that extends our understanding of what art can be and, as a consequence, is. While the latter aspect fits very well with Rheinberger's emphasis on historicity and the importance of a future knowledge-to-come, linking the former aspect to his thinking seems more problematic because in *Fountain* material practice seems to have very little value.

By focusing on Duchamp's *Three Standard Stoppages* (1913–1914), Herbert Molderings in his book *Duchamp and the Aesthetics of Chance: Art as Experiment* (2010) proposes a different route into Duchamp's work, which places greater emphasis on the development of his practice and his intellectual concerns during a crucial transitional phase in his career.

As is well known, *Three Standard Stoppages* is a work of art based on three experiments, in which Duchamp, according to his own account, let a 'thread a meter long' fall 'from the height of one meter onto a horizontal plane, making its own deformation' (quoted in Molderings 2010, 2). While it can be argued that *Three Standard Stoppages* represents the beginning of Duchamp's work with ready-mades, of which *Fountain* with the implication discussed above was a consequence, following Linda Dalrymple Henderson's argument from her 1983 book *The Fourth Dimension and Non-Euclidean Geometry in Modern Art* (2013, chap. 3), Molderings suggests that the work engages less with the history of art – although it also does – than with an artistic approach to the science of his time, in particular, higher-dimensional and non-Euclidian geometry. In other words, Duchamp used artistic practice to think through a problem of mathematics popular at the time that was implied already in his famous *Nude Descending a Staircase No. 2* (1912) and which he now developed much more radically.

To unpack the work, Molderings argues that *Three Standard Stoppages* needs to be seen more in the context of painting and less in that of 'art'. The work remains materially bound, with regard both to the particular shapes the threads took as they landed on a plane and to the choice, for example, of background colour and mounting. With reference to the *Large Glass* (1915–1923), Henderson suggests that the importance of materiality may have also been supported by the cubists' reading of Henri Poincaré, according to which 'tactile and motor sensations might have more than three dimensions' (Henderson 2013, 258). Thus, Henderson believes that Duchamp was working on more experiential solutions, before he 'was forced to give up this more concrete method in favor of a visual illusion of the fourth dimension based on mirrors and virtual images' (Henderson 2013, 259).

Nevertheless, ultimately Molderings disagrees with Henderson over Duchamp's artistic project and the role experimentation plays within it, since he believes that Duchamp kept a critical distance from more productive understandings of the term. This is most markedly apparent in Molderings' repeated use of the notion of 'pseudo-experiment' to characterise *Three Standard Stoppages* as a way to keep open

the epistemic question in Duchamp's work. As Molderings' book makes it clear, the extent to which Duchamp retrofitted notions of chance and experimentation to *Three Standard Stoppages* is striking. To take one example, the threads that Duchamp used cannot have been the ones he later claimed to have dropped, being longer than one metre and stitched through the canvas to hold them in place. What looks like a direct trace of an experiment is, in fact, an image set up precisely to look like such a trace, suggesting that Duchamp staged modes of virtual witnessing as discussed above. Duchamp's work on the level of image makes it difficult if not impossible to assess whether threads have actually been dropped and whether the shapes that we encounter in *Three Standard Stoppages* have been arrived at by chance alone.

From the vantage point of a developing practice, whether *Three Standard Stoppages* counts as experiment or pseudo-experiment is of less relevance than Duchamp's experimental system, which identifies an original site of experimentation and signification (the dropping of the threads) precisely as it moves away from that presumed origin (during the long phase between 1913 and 1936 in which Duchamp exhibited the work for the first time). This process results in *Three Standard Stoppages* as a matter of fact.

The effect is comparable to *Fountain*, with the difference that *Fountain* is overdetermined by its historical function, which seems in comparison to be able more credibly to contract the work to a moment of choice and the event of its non-exhibition. *Three Standard Stoppages*, on the other hand, having required years to develop, gives greater access to material working processes within conceptual practice, which seem to resist the formation of a coherent notion of work (Molderings 2010, 64). Since this working process creates the experimental event as it charges it with meaning, it is epistemically more relevant than a set of presumed initial experiments.

Experimental systems and artistic research practice

As Rheinberger (1997, 28) says, '[e]xperimental systems are to be seen as the smallest integral working unit of research'. That is, individual experiments are situated within an experimental system, through which they are conditioned and in relation to which they carry meaning. At the same time, experimental events are of epistemic value only if they move the system beyond those conditions. Given that it is these 'unprecedented events' that the experimental system is set up to deliver, they move into the foreground and take centre stage. However, while it seems that these events enter the experimental system from the outside through the material on which the system operates, this 'outside' is inextricably woven to the 'inside' of the experimental system, making it impossible to decide whether an epistemic thing is fact or fiction.

When Molderings applies the notion of 'pseudo-experiment' to works such as *Three Standard Stoppages*, he runs the risk of undoing at least part of Duchamp's epistemic enterprise since he reduces the work to a critical commentary on scientific experimentation of the kind he sees Henderson as championing. However, this is not to say that this notion of experimentation does not deserve critique; rather, by focusing on the status of the experiment, both positions fail to perceive how the experimental system operates. By having retraced Duchamp's process of fabrication,

Molderings opts for a distance to the notion of experimentation as if the detection of fabrication was detrimental to the status of Duchamp's experimental activity. Likewise, to believe that the dropping of the three threads was an actual experiment in higher-dimensional space suggests the possibility of a 'finding' that Molderings (2010, 91) rightly rejects as 'entirely useless for scientific purposes'. Ultimately, what is lacking are notions of experimentation that give space to types of artistic epistemology.

Despite my criticism of the way Molderings limits notions of experimentation, the last two chapters of his book give an insight into what an artistic epistemology might be, in particular when looked at in combination with Rheinberger's notion of experimental system and the challenge against conceptualism that was highlighted above as both historicising artistic practice and disregarding materiality. In short, I am seeking to propose a post-conceptual understanding of experimental systems as the foundation for an artistic epistemology.

As Molderings says in the final pages of the book, summarising his analysis of Duchamp's stance:

> experimentation was henceforth to be the only decisive principle of the artist's work. No longer was art meant to serve a religious, scientific, or artistic 'truth' but was now to be understood as an open experiment aimed at exploring the world of the imaginable, the depictable and the undepictable. (Molderings 2010, 143)

However, other than stressing with Duchamp the desire not to 'give science the last word' in some form of existential or ethical battle (Duchamp quoted in Molderings 2010, 144), the mentioned experimental exploration of the world – although not delivering 'truth' – may produce understanding of 'the incomparable, the rare, the unique' (Molderings 2010, 122) rendering it 'impossible for criticism to derive new laws, axioms, and "clearly marked boundaries" from' the 'perceptual metaphors' the artist produces (Molderings 2010, 124). In the context of photography, Roland Barthes coined the phrase '*the impossible science of the unique being*' (Barthes [1982] 1993, 71, original emphasis), which makes it possible 'to express this truth' (Barthes [1982] 1993, 70) that *is* the Winter Garden Photograph.

Thus, an artistic epistemology needs to reject notions of 'truth' to which artistic practice is subservient. At the same time, it needs to support artistic modes of identifying certain unique, material things as true, in the sense that they can be witnessed as epistemically relevant despite their unknown status, in other words, as a matter of fact. This can only happen on a case-by-case basis where the experimental system both produces and protects its epistemic thing as a unique being. However, given the rejection of 'truth', such protection cannot displace the epistemic thing into either negativity or concealment; rather, meaning needs to remain materially accessible.

This position challenges the importance of historicity that Rheinberger detects in the science of the early twentieth century, which is important for his notion of experimental system (Schwab 2013). As illustrated above with reference to *Fountain*, historicity is challenged by an artistic epistemology since a speculation about art's future fails sufficiently to protect *Fountain* as material being, turning it instead into a conceptual gesture. *Three Standard Stoppages*, on the other hand, through the ongoing unfolding of the experimental system, which Duchamp provides across

– and in – multiple works and which creates both the experiment and its meaning, allows access to an experimental research project and a material surplus of thought even after its concept is explained.

Thus, the 'radical individualism' (Molderings 2010, chap. 8) with which Molderings ends his book is actually a consequence of the necessary protection of what is proposed as unique being. However, this individualism is neither solipsism nor nihilism, since the body of work that is *Three Standard Stoppages* remains experientially accessible, allowing it to be understood across the various permutations of the work and the layers and references it assembles. Conversely, *Three Standard Stoppages* can also prepare the understanding of other realities and possible worlds in a manner specific to a very particular practice, which is that of Duchamp. To establish artistic practice as research, an artistic epistemology is required.

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References

Abrams, M. H. 1953. *The Mirror and the Lamp: Romantic Theory and the Critical Tradition*. Oxford: Oxford University Press.

Barthes, Roland. [1982] 1993. *Camera Lucida: Reflections on Photography*. Translated by Richard Howard. London: Vintage.

Boyle, Robert. 1725. *The Philosophical Works of the Honourable Robert Boyle Esq: Abridged, Methodized, and Disposed Under the General Heads of Physics, Statics, Pneumatics, Natural History, Chymistry, and Medicine*. London: W. and J. Innys.
Brooks, William. 2012. "In re: 'Experimental Music.'" *Contemporary Music Review* 31 (1): 37–62.
Bryson, Norman. 1983. *Vision and Painting: The Logic of the Gaze*. New Haven, CT: Yale University Press.
Cage, John. 1961. *Silence: Lectures and Writings*. Middletown, CT: Wesleyan University Press.
de Duve, Thierry. 1996. *Kant after Duchamp*. Cambridge, MA: MIT Press.
Evans, Walker. 1983. *Walker Evans at Work: 745 Photographs together with Documents Selected from Letters, Memoranda, Interviews, Notes*. London: Thames and Hudson.
Galassi, Peter. 2000. *Walker Evans & Company*. New York: Museum of Modern Art.
Goodyear, Anne Collins. 2004. "Gyorgy Kepes, Billy Klüver, and American Art of the 1960s: Defining Attitudes toward Science and Technology." *Science in Context* 17 (4): 611–635.
Henderson, Linda Dalrymple. 2013. *The Fourth Dimension and Non-Euclidean Geometry in Modern Art*. Rev. ed. Cambridge, MA: MIT Press.
Latour, Bruno. 1993. *We Have Never Been Modern*. Translated by Catherine Porter. Cambridge, MA: Harvard University Press.
Locke, John. [1689] 1996. *An Essay Concerning Human Understanding*. Edited by K. Winkler. Indianapolis, IN: Hackett.
Merleau-Ponty, Maurice. 1968. *The Visible and the Invisible*. Edited by Claude Lefort and Translated by Alphonso Lingis. Evanston, IL: Northwestern University Press.
Molderings, Herbert. 2010. *Duchamp and the Aesthetics of Chance: Art as Experiment*. Translated by John Brogden. New York: Columbia University Press.
Rheinberger, Hans-Jörg. 1997. *Toward a History of Epistemic Things: Synthesizing Proteins in the Test Tube*. Stanford, CA: Stanford University Press.
Rheinberger, Hans-Jörg. 2013. "Forming and Being Informed: Hans-Jörg Rheinberger in Conversation with Michael Schwab." In *Experimental Systems: Future Knowledge in Artistic Research*, edited by Michael Schwab, 198–219. Leuven: Leuven University Press.
Schwab, Michael. 2012. "Between a Rock and a Hard Place." In *Intellectual Birdhouse: Artistic Practice as Research*, edited by Florian Dombois, Ute Meta Bauer, Claudia Mareis, and Michael Schwab, 229–247. London: Koenig Books.
Schwab, Michael, ed. 2013. *Experimental Systems: Future Knowledge in Artistic Research*. Leuven: Leuven University Press.
Shanken, Edward A. 2002. "Art in the Information Age: Technology and Conceptual Art." *Leonardo* 35 (4): 433–438.
Shapin, Steven. 1984. "Pump and Circumstance: Robert Boyle's Literary Technology." *Social Studies of Science* 14 (4): 481–520.
Stewart, Larry. 2004. "Science and the Eighteenth-Century Public: Scientific Revolutions and the Changing Format of Scientific Investigation." In *The Enlightenment World*, edited by Martin Fitzpatrick, Peter Jones, Christa Knellwolf, and Iain McCalman, 234–246. Abingdon: Routledge.
Wordsworth, William. 1951. *The Poetical Works of Wordsworth*. Edited by Thomas Hutchinson. Rev. ed. London: Oxford University Press.