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The Exhibition as an Experiment: An Analogy and Its Implications

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Abstract
The analogy of the exhibition as an experiment suggests innovative curatorial approaches that challenge institutional practices. This analogy has however a historical precedence in modernism when it became paradigmatic of the exhibitions at the Museum of Modern Art in New York in the 1940s, defining the curatorial approach of its founding director Alfred J Barr. This article considers this early use of the analogy of the exhibition as an experiment and further reflects on its redefinition at the turn of the 20th century by examining how both the notions of the exhibition and of the experiment have changed over time. In particular, the article examines the different meanings and practices inferred by the concepts of the exhibition and the experiment in the first decades of the 20th century and in the present. It outlines how correspondences between cultural and scientific paradigms can be deployed to tease unacknowledged synergies between two modes of knowledge production (i.e. the art exhibition and the experiment) and address questions of presentness, authority and legitimacy that they imply.

Keywords
art • exhibition • experiment • knowledge production • science

In 2002, Bruno Latour collaborated with curator Peter Weibel on the exhibition ‘Iconoclash: Beyond the Image War in Science, Religion, and Art’ at the Zetrum für Kunst und Medientechnologie in Karlsruhe (Figure 1). The exhibition dealt with the notion of iconoclasm by questioning the supposed inviolability, truthfulness or danger of images. It considered the meaning

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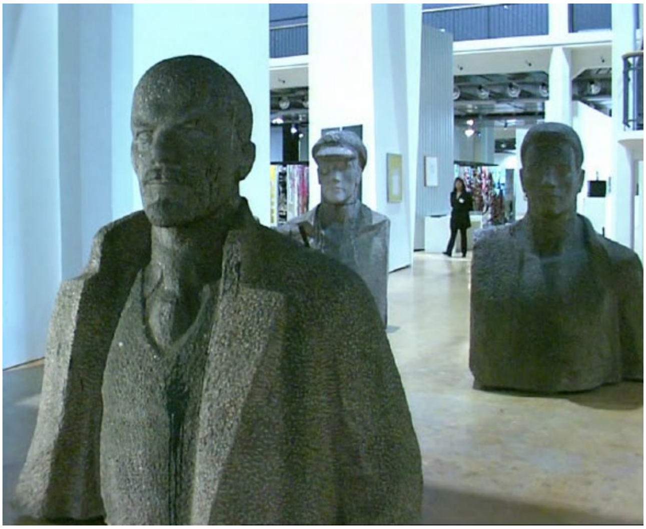


Figure 1 View of the exhibition 'Iconoclash. Beyond the Image Wars in Science, Religion and Art', May 4, 2002–September 01, 2002, ZKM | Center for Art and Media Karlsruhe, © ZKM | Center for Art and Media Karlsruhe, photo: ONUK.

of the material destruction of images and the challenge of the beliefs with which they are invested (Latour, 2002: 14–16). To answer such theoretical questions, Latour and Weibel conceived the exhibition as an experiment with images by bringing together 'three sources of icono*clashes*: religion, science and contemporary art', and displaying the features that denote images related to these three subjects and the attitudes that they engender in the viewer (pp. 18–19, emphasis in original). 'It is only because each of us, visitors, curators, and readers' – maintains Latour – 'harbors such a different pattern of belief, rage, enthusiasm, admiration, difference, fascination, suspicion, and spite for *each of the three* types of images that we bring them to bear on one another. What interests us is the even more complex pattern created by their *interference*' (p. 18, emphases in original). The inclusion of scientific images in 'Iconoclash' is telling of the experimentation of the exhibition as a reflection on the social and cultural fabrication of science, and on the ways in which an act of deconstruction (perhaps more than destruction) could bring a different critical appraisal and understanding, whether in the case of medical illustrations, models of biological structures or digital imaging on a micro and macro scale. Art added a further reflection on the constructiveness of images through the work of artists as diverse as Sigmar Polke, Luc Boltanski, Candice Breitz, Ecke Bonk and Richard Hamilton. The exhibition also drew attention to the ways in which artists have challenged assumptions about what an artwork is from Marcel Duchamp's readymades, Kazimir Malevich's abstractions, Lucio Fontana's slashes, or Joseph Beuys' actions, to the contemporary use of digital technologies. As an experiment aimed at understanding the complex set of premises that inform the production and reception of representation across belief systems and forms of knowledge production, 'Iconoclash' put forward an examination of images through images as a hypothesis designed for the audience to probe (Weibel and Latour, 2007: 94–95). In so doing, it also instigated a reflection on its own process and the analogy which underscored it: that of the exhibition as an experiment.

In their own analysis of such an analogy, Sharon MacDonald and Paul Basu (2007) draw attention to the historical 17th-century definition of the experiment 'as a knowledge-generating procedure' that is achieved 'via the assembly of a particular apparatus and methods performed in a context that was at least theoretically open to the public', since originally experiments were carried out in front of an audience, and entailed 'systematic production of novelty' (p. 2). This early definition resonates with today's emphasis on performance, apparatus, audience and generation of knowledge. An experiment is currently thought of in terms of *doing* within defined parameters (Hacking, 1983: 173), entailing a *performative* production of knowledge attained through the use of methods and apparatus for a potential audience.[1] According to MacDonald and Pasu, these features also characterize the exhibition and its procedures of generating knowledge. Today, the analogy of the exhibition as an experiment designates innovative curatorial approaches that challenge canons, institutional confines or ideological conditioning. The exhibition, in other words, becomes experimental when it engages with its own contingency and potential to generate forms of knowledge, whether in terms of collaborative transdisciplinary practices or through provocation and innovation.[2] Plurality, contemporaneity, diversity of spatial and temporal regimes and environments, strategies of inclusion are among the features that define curatorial experimentation, as a 'move away' – in Charles Esche's words – from the reflexive forms of art toward something unstable and propositional' capable of fostering new perspectives (Thea, 2009: 83; see also Esche, 2011).

The analogy of the exhibition as an experiment, however, has an historical precedent. First used in the early 20th century by the European avant-garde and the Bauhaus to denote their own innovative curatorial approaches, the analogy was further deployed by the founding director of the New York's Museum of Modern Art, Alfred J Barr, to legitimate its endeavor. In conceiving the exhibition as a 'scientific experiment', Barr rendered the analogy paradigmatic of innovation in ways that are still pertinent today. He also inferred complex and often unacknowledged associations between the two concepts and the related modes of knowledge production that, in Barr's time, aspired to claims of autonomy and universality both in the case of the exhibition and of the experiment. The discourses of art and science on which the two notions of the exhibition and the experiment are culturally constructed have, however, changed since Barr's time. In art, since the late 1960s, the analogy of the exhibition as an experiment has become synonymous with a critique and renewal, if not subversion, of institutional practices towards curatorial approaches that are more or less in antagonism with Barr's notion of modern art and the modern exhibition leading to the current definition of exhibitions that challenge institutional approaches and set-ups. Such a change has coincided with a reappraisal in the scientific discourse of the notion of the experiment itself. This article examines the meaning of the analogy of the exhibition as an experiment both in its historical and contemporary iteration – in the case of Barr's use meant to designate the exhibitions of the Museum of Modern Art in the 1940s and, in today's utterance, such as Latour's and Weibel's example of 'Iconoclash'. The article contextualizes the use of the analogy of the exhibition as an experiment within the artistic and scientific discourses to which it refers (Albano, 2014: 536–537) in the 1940s and today. Barr's programmatic appropriation of the analogy is analysed in terms of the authority and autonomy ascribed to the experiment in the first decades of the 20th century. The article further brings the historical meaning of the analogy of the exhibition as an experiment to bear to today's use, underlying changes in its implications in terms of performativity in both the case of the exhibition and the experiment, and further outlines how correspondences between art/curatorial and scientific paradigms can be used to tease unacknowledged synergies on modes of knowledge production and questions of presentness, authority and legitimacy. The focus is on the analogy of the exhibition as an experiment as generally used in relation to curatorial practices in order to point to its expansive cultural resonances in ways that may include but are not limited or specific to art/science projects and their display.

The modern exhibition as an experiment

In explaining the grounding principles of the Museum of Modern Art in New York, its director, Glenn Lowry, states that in re-evaluating the goals of the collections,

> … as the nature of the art it collects and the public it serves has constantly changed sometimes in small ways, and at other times in larger ways. In this context The Museum of Modern Art can be considered a disruptive institution, a term loosely borrowed from Clayton Christensen to describe how certain kinds of enterprises alter established paradigms by pioneering new processes or reaching new audiences that are otherwise being ignored. (Lowry, 2004: 7)

Lowry refers back to Barr's idea of the institution when, at the time of the relocation of the Museum of Modern Art in Goodwin and Stone's building, he envisaged the museum as a laboratory and its exhibitions as experiments. Experimentation for Barr meant ongoing renewal whereby the museum's program of exhibitions 'was conceived as a series of hypotheses about how modern art can be read at any given moment, subject to renewal and modification as the art itself changes, and as we gain greater insight into a tradition that is still unfolding' (pp. 24–25), by adhering to the forms and ways of perceiving reality brought about by scientific and technological advancements. At the same time, Barr's use of the analogy of the exhibition as an experiment was also prompted by the necessity to legitimize 'modern art' in a period when as an artistic movement it still lacked recognition by turning to that other sphere of knowledge that, in the first decades of the 20th century, was believed to designate modernity: science.

Barr's designation of the New York Museum of Modern Art's exhibitions as experiments and of the museum itself as a laboratory was inspired by and resonated with those of the European avant-gardes, the Bauhaus and the displays at the Landesmuseum in Hanover from 1925 to 1937 when Alexander Dorner was the museum's director. Dorner had attempted to create 'a new visual language' for exhibiting modernist art and design at the Landesmuseum by commissioning Russian constructivist artist El Lissitzky to create a room for the display of modernist abstract art, the so-called 'Abstract Cabinet', and to László Moholy-Nagy the never completed 'Gallery of Our Time'. The two galleries, which were in their own right experimental, are notable since they brought the artistic and design innovation of the modernist avant-gardes and Bauhaus together within the context of a museum. In the 'Abstract Cabinet', unframed works by major representatives of the movement, including Pablo Picasso, Fernand Léger, Naum Gabo, Piet Mondrian, Willi Baumeister, Kazimir Malevich, Moholy-Nagy and Lissitzky himself, were shown unframed on metal strips aligned on sliding panels behind which other pictures were hung, thus creating a three-dimensional effect. The panels were painted in white, black and gray stripes which 'produced cool shimmer that changed with the slightest movement of a visitor's head' (Cauman, 1958: 100–104; see also Lueddeckens, 1971; Germundson, 2005). The 'Abstract Cabinet' – as the related booklet suggested – implied 'the effects of abstract art on the features of daily life' soliciting connections in the viewer between art and experience and the concurrent fields of image production that for Dorner also included film, photography and artifacts from science and technology (Cauman, 1958: 104). This was also evident in the 'Gallery of Our Time' intended to epitomize the modernist aspiration of a synthesis of art, design, science and technology. The gallery directly drew on the Bauhaus's integration of these different spheres of knowledge and its aspiration to convey an impression of the real that was eminently *modern*. The gallery showed photography, film and reproductions of architectural models, design (including photographic documentation of industrial design) and slide projections of theatrical scenography by Walter Gropius and Oskar Schlemmer. With the exception of Moholy-Nagy's 'Light Machine', which projected patterns of abstract light when mechanically activated, the display did not include 'any original work of art. Everything was a reproduction, a model, or documentation' (Staniszewski, 1998: 22–23).

From a curatorial point of view, the 'Abstract Cabinet' and the 'Gallery of Our Time' epitomized Dorner's idea of a *living museum*, characterized by flexible and variable exhibition display features. Underpinning his curatorial approach was an understanding of art history influenced by evolutionary psychology. Dorner acknowledged the centrality of time and transformation in the development of artistic movements and aimed to integrate them into a dynamic understanding of the history of art and of the museum as relative constructs, liable to revision and redefinition. In his words, 'Only by seeing in history an open growth freed from immutability – a view familiar to modern biology, physics and psychology – can we hope to judge adequately the evolution of art and, particularly, the most recent movements in art' (Dorner, 1958: 35). In a note to this statement, Dorner further adds that 'this modern attitude of the Sciences accounts for the gap that has developed between the Sciences and the Humanities in as far as they preserve the traditional belief in a basic immutability of reality' as it manifests itself in the tendency to conceive historical movements as timeless. In order to counteract such a tendency, Dorner's approach was to conceive the museum's displays as an hypothesis on the real, a curatorial experiment to be experienced by the audience, which reflected the contingency of ideas and practices in both art and experience.

Such an approach proved influential for Barr who made his own notion of the exhibition as an hypothesis that could be experientially put forward in the museum's display, though not in terms of historical relativity but rather of timelessness. Barr was preoccupied with creating a museum space that was conducive to the appreciation of new art for American audiences. This in turn entailed the creation of exhibitions that could be seen as evolving along the line of novel and emerging artistic trends on which the very idea of *the modern* was articulated – whether in terms of modern art, the modern museum and/or the modern individual. For these reasons, although conceptually in debt to Dorner's vision and the Bauhaus synthesis of art, design, science and technology, Barr took the analogy of the exhibition as an experiment towards directions that contradicted Dorner's evolutionary approach. Formally, Barr drew on and adapted the displays developed by the modernist avant-gardes and the Bauhaus, as exemplified by the Landesmuseum's 'Abstract Cabinet' and the 'Gallery of Our Time', in the pristine and spare galleries of the Museum of Modern Art, establishing the defining features of the 'white cube' as a self-enclosed and timeless space for art (O'Doherty, 1999: 7–8). Neutral wall colours, careful spotlighting and use of graphics were all intended to produce a powerful and reproducible experience of autonomy and independence for the viewer (Duncan, 1995: 19-20; Staniszewski, 1998: 66). Conceptually, Barr was not concerned with an evolving experience of time and space, but rather with the quest for an autonomous aesthetics for both modern art and its display. This in turn endorsed the museum's endeavor for an appreciation of modern art and design in the United States (as well as internationally) and the legitimization of a space that expressed the modernist ethos for independence, internationality and democracy – ideals that matched the economics and politics of early 20th-century's capitalism and the promotion of 'scientific naturalism' as a concurrent epistemology (Marshall, 2012: xx–xxi). The spatial and conceptual adaptability that Barr envisaged for the Museum of Modern Art was only partially akin to Dorner's idea of a museum capable of reflecting the dynamic changes of modern living and artistic innovation, since it was primarily meant as a validation of what was modern. 'By demonstrating the vast variety of styles and concepts' – Barr (1977: 638) observed – 'so characteristic of modern art in the recent past, it makes for an open mind and helps keep the institution receptive to new trends.' This was supposedly actualized in exhibitions that Barr and his colleagues tuned to the *needs* of the time and the democratization of art (Wilson, 2009: 11; see also Grunenberg, 1999).

Characteristically, the exhibitions at the Museum of Modern Art paired a scholarly art historical approach (and didactic intention) with 'experimental' displays. This is evident, for instance, in the juxtaposition of primitive and modern art in exhibitions such as 'Cubism and Abstract Art' (1936) curated by Barr and 'Timeless Aspects of Modern Art' (1948) curated by René D'Harnocourt. On the one hand, 'Cubism and Abstract Art' (1936) suggested an evolutionary framework which 'was time-bound in the sense that it was founded on self-reflexive development. On the other hand, there were aspects of Barr's installation that presented modern art as a timeless and universal language' (Staniszewski, 1998: 81). The exhibition included modernist artworks alongside 'primitive' and pre-modern artifacts, for instance Pablo Picasso's *Dancer* (1907–1908) was shown next to a figure from Gabon. A direct reference to avant-garde exhibitions, the juxtaposition relied on the assumption of the abiding continuity across cultures of the defining motifs of modernity. The careful groupings of works were presented through theatrical vistas across rooms and the spotlighting of artworks in darkened galleries with the intent of individualizing and abstracting their features within the universalizing context of the gallery space which was thought of as autonomous and self-contained (Marshall, 2012; Staniszewski, 1998: 78–79; Wilson, 2009: 100–111) (see Figure 2).

D'Harnocourt used a similar approach for 'Timeless Aspects of Modern Art' (1948) which was part of a series of special exhibitions organized to celebrate the 20th anniversary of the Museum of Modern Art and meant to 'relate modern art to the arts of other epochs and to clarify its place in our century' (Museum of Modern Art, press release, 1948).[3] As the title suggests, the exhibition aimed to establish the defining features of modern art as an all-encompassing concept by establishing relationships between what was thought to be modern in terms of 20th-century art and artworks of other periods. This entailed a demonstration of the initial premise or hypothesis underpinning the exhibition itself, that of tracing affinities among artworks belonging to different historical periods and places, since they could all be considered as instances of *the modern* in their own right. Accordingly, 'Timeless Aspects of Modern Art' methodologically identified and grouped works by way of affinities of form and content to evidence that modern art 'is not an isolated phenomenon in history but is … an integral part of art in all ages' (Museum of Modern Art, press release, 1948). Stylistically, this meant a consideration of features, including exaggeration, distortion, and abstraction (Staniszewski, 1998: 84). A 13th-century Chinese painting, a landscape by Cézanne, an artwork by Picasso and one by Piranesi were displayed side by side to show that they shared similar preoccupations with rhythmic movements, mathematical order, and internal structure (Museum of Modern Art, press release, 1948). In another instance, to point

Figure 2 Installation view of the exhibition 'Cubism and Abstract Art'. New York, MoMA, 2 March to 19 April 1936. New York, Museum of Modern Art (MoMA). Photographic Archive. The Museum of Modern Art Archives, New York. ©Photo SCALA, Florence. Photographer: Beaumont Newhall © The Museum of Modern Art, NY. Cat. no.: IN46.8B. © 2018. Digital image, The Museum of Modern Art, New York/Scala, Florence.

out different ways of conveying the emotional charge of an image, the stylization of Wilhelm Lehmbruck's sculpture, *Standing Youth* (1913), was shown alongside a Romanesque crucifix, Georges Rouault's painting of *Christ Mocked by Soldiers* (1932) and Ryman Bloom's *The Synagogue* (Figure 3). The exhibition design further emphasized the theoretical hypothesis of an encompassing notion of modern art across historical periods through the creation of spacious and darkened galleries where the works were spotlighted as if suspended in time.

> This dramatic lighting worked to decontextulize the art objects, evoking a crepuscular and 'timeless' sense of space, out of which individual pieces emerged. Approximately midway through the show, in the 'emotional content' section, a dramatically lit Romanesque crucifix served as a climax within the exhibition tour. (Staniszewski, 1998: 84)

The scientific hypothesis of the exhibition was thus methodologically elaborated both in the content – through the specific clustering of the selected artworks and artifacts – and formally – through the design features of the display. Like an experiment, the exhibition presupposed the production of demonstrable knowledge for the visitor to experience. It was indeed the experimental claim of exhibitions such as 'Timeless Aspects of Modern Art' in the museum laboratory that the curatorial approach and gallery's design exposed and foregrounded at the same time. The exhibitions thus

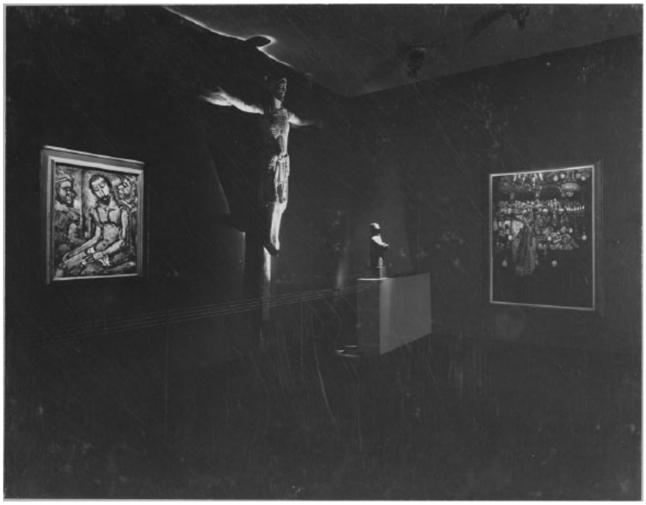


Figure 3 Installation view of the exhibition 'Timeless Aspects of Modern Art', MoMA, NY, 16 November 1948 to 23 January 1949. New York, Museum of Modern Art (MoMA). ©Photo SCALA, Florence. Photographic Archive. The Museum of Modern Art Archives, New York. Ref. no.: IN393.8. © 2018. Digital image, The Museum of Modern Art, New York/Scala, Florence.

framed the initial hypothesis on which they had been conceived (e.g. the timeless notion of modernity) into the experiential knowing produced by the experiment–exhibition by ways of controlling the *presentness* of what was on display. Curators exploited the transitional environment of the gallery for removing any temporal references (see Bal, 1996: 161–190), and creating an autonomous space in which the universality of modern art could be asserted. Such a space ideally shared the same supposed qualities of pristine order, neutrality and self-containment of the scientific laboratory. Informing Barr's experimental exhibitions, however, was an altogether different approach to science from that of Dorner, an approach that was not directly influenced by scientific ideas but rather by the ways in which the scientific discourse constructed itself as an autonomous sphere of knowledge. Put another way, in using the analogy of the exhibition as an experiment and of the museum as a laboratory, Barr invoked the same cultural authority for the Museum of Modern Art with which science was endowed at the turn of the 20th century when it was prized as a defining form of modernity and its influence was increasingly recognized (Shapin, 2010: 377). The analogy of the exhibition as an experiment was in fact meant to grant institutional autonomy and authority to the Museum of Modern Art and to endorse the kind of knowledge it produced in ways that confirmed both the Museum and the art it showed as epitomes of modernity. The function of the analogy was thus programmatic since it helped to endorse the exhibition with the cultural weight conferred on science as the field in which the experiment was most commonly recognized and defined.

The laboratory and the experiment: Two modern cultural constructs

Historically, such an authority relied on an independent code of practice (put forward by the Royal Academy in London in the 18th century and further consolidated in the early 20th century) that granted science an autonomous sphere of knowledge production. This had been developed around the two notions, those of the laboratory and of the experiment, and implied the institutionalization of science itself as an independent intellectual activity complying to its own regulation, such as the so-called scientific method. Within this context, the laboratory had emerged as the privileged space for the production of scientific knowledge as the pursuit of experts behind closed doors.[4] The historical development of the laboratory as *the space* for *making* experiments itself concealed an unresolved dichotomy between the private and public dimension of the production of scientific knowledge that has ever since dominated the evolution of science and its cultural positioning: although allegedly public, laboratories are not openly accessible and their validation resides on the 'visible display of the emblems of recognized experience' that experts perform and whose validity is vouched for by other experts (Shapin, 2010: 88). The laboratory is thus ambiguously positioned between the privacy of a self-contained space ruled by experts and the public demonstration of knowledge production which legitimates it (Bourdieu, 2001: 42). Experts, in other words, are both the producers and supporters of the validity of scientific knowledge that is publicly displayed and consumed.[5] It is within this context that the experiment acquires significance as a practice sanctioned by the use of a specific apparatus (i.e. instruments, techniques, methods of observation, description and analysis) that separate the professional scientist from the amateur, the expert from the audience (Bourdieu, 2001: 42).[6]

The ambiguity between the private production of scientific knowledge through practices that are the domain of experts and its public display complicates the assumption of the museum as a laboratory and of the exhibition as an experiment, suggesting a similar ambivalence for the arts. In comparing the New York Museum of Modern Art to a laboratory and its exhibitions to experiments, Barr invoked a defining form of modernity and claimed for modern art and the space of its display a sphere of autonomy, independence and legitimacy similar to that of science. Barr envisaged for the Museum of Modern Art the same prerogatives of the laboratory as a secular space of knowledge production, both physical and figurative, that was self-ruled and whose validation relied on expertise and practices of production, on the one hand, and public display or communication, on the other hand. The latter, as in the case of the laboratory, acted as the overt legitimization of a form of knowledge that was self-determined since it was generated and validated by experts. Although these claims betray concealed entanglements with politics and economics (as they did for science), relevant for our discussion are the ways in which the experiment could support the legitimization of modern art and the modern museum through the prerogatives of autonomy and self-containment that characterized the scientific sphere.

Underpinning the experiment is in fact the attainment of data whose interpretation helps the demonstration of a specific hypothesis in order for it to acquire general standing. This implies a transition from the particular to the universal that is helpful for understanding Barr's use of the analogy of the exhibition as an experiment since it enabled him to extend to the Museum of Modern Art the same prerogative of autonomy and legitimacy culturally ascribed to science. Barr in fact exploited the shift from the specific to the general implicit in the validation of experimental knowledge to underpin the claim for universality (despite its specificity) of modern art that the exhibitions–experiments at the Museum of Modern Art tried to attain. In order to grant legitimacy to modern art within the western art canon, Barr and his colleagues evinced through their experimental exhibitions the continuity and reappraisal of universal themes and forms in the art of the present, thus endorsing its validity in the now, but also in relation to the past and the future. The Museum's exhibitions were, in other words, experiments meant to experientially corroborate the hypothesis of universality of modern art which had been formulated and was further assessed by museum's experts (i.e. the curators). The specific topic examined by single exhibitions, such as 'Cubism and Abstract Art' or 'Timeless Aspects of Modern Art', was thus part of the evolving demonstration of the validity of modern art and the space that contained and endorsed it as universal. Within the context of the exhibition–experiment, the *presentness* of the knowledge put forward by the museum was framed within the autonomy and a-historicity of a discourse that construed itself as *universally valid*. This was not merely an intellectual endeavor, but rather one in which understanding also arose from the affective involvement of the visitor and his or her immersion in the rarified environment of the exhibition itself. The privacy that the laboratory ensured to the scientist was translated to the exhibition in the individual and yet communal experience of visiting. The exhibition generated a space of constructed visibility that granted autonomy and legitimacy not only to the knowledge that it displayed but also to the individual who shared such knowledge. It intimated a dialogic relation between the curator (expert) and the audience through the exhibition itself.

Within this context, the Museum of Modern Art implied an alliance with its potential audience that was as important for modern art as for modern science. In Barr's (1977: 638) words:

> It is a Museum for 'modern art' – that is, for you and for me, a museum for art which reflects the inner problems of our generation and is created in the hope of meeting some of its basic needs.

In treading new and even controversial ground, challenging established notions, practices and worldviews, artists and scientists alike fostered a secular and democratic credo whose intended autonomy and independence could be shared, helping to fashion the modern individual. This was in line with the didactic role of the museum that, from its original institution at the turn of the 19th century, had been conceived with the aim of fostering the ‘fabrication of a modern citizen’ as ‘a new social subject’ by endowing ‘the ethical language of the self’ through its displays (Preziosi, 2004: 79). The Museum of Modern Art continued the definition of the modern subject by suggesting that the late Victorian self-fashioning bourgeois had turned into the aspiring dynamic urban citizen of 20th-century metropolises – the ‘you’ and ‘me’ whose needs and worldview the Museum tackled and reflected on. Such an ideal citizen was also the potential audience for the narratives that science was forging and rephrasing in the first half of the 20th century. Whilst science did not immediately call upon such a citizen as an audience maintaining a self-referential circuit of communication across experts, the spreading of its findings within the broader cultural and social arena and the political relevance of expert knowledge in public affairs during the second half of the 20th century increasingly brought to bear the significance of ‘fashioning’ an audience for science that was akin to the one of the modern art museum. The analogy of the exhibition as an experiment thus endorsed parallels and shared connotations for both the museum and science. These have acquired renewed relevance in our time when the premises on which the exhibition and the experiment were brought together have been questioned and critically reappraised.

The redefinition of the analogy of the exhibition as an experiment

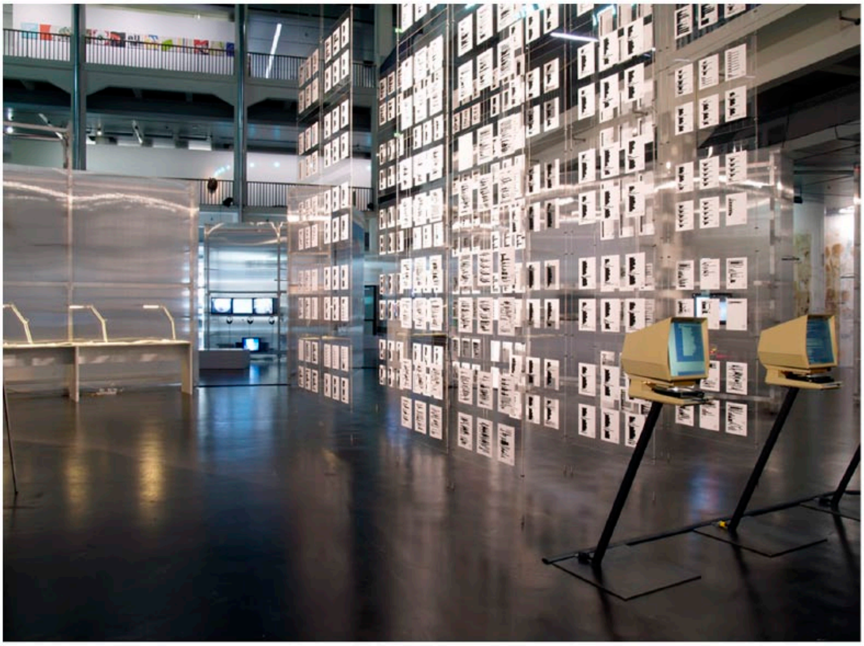
From the late 1960s onwards, Barr’s experimental exhibitions began to falter under the pressure of multilayered critique around the power relations, anachronisms and biases that the Museum of Modern Art epitomized, leading to a redefinition of the analogy of the exhibition as an experiment. Today this is far less redolent of institutional innovation than a critique of established curatorial practices. Through direct interventions and collaborative practices, and by moving the exhibition outside the confines of the art gallery, artists and curators have increasingly drawn attention to the necessity of reflecting on a museum’s practices as well as on ‘the category of art that it enshrines and the modalities of spectatorship that it produces’ (Bishop, 2013: 8–9). The Museum of Modern Art, as Barr well understood, contended with the shifting present and what counts as ‘modern’, or rather ‘contemporary’ at any given time. For Barr, the exhibition as an experiment endorsed an overarching almost ontological notion of modern art and, by extension, of contemporary art as autonomous and universal. Today’s experimental exhibitions critique such an assumption and the timelessness it might imply through a questioning of what counts for contemporary art in terms of contingency. What is ‘contemporary for the museum of contemporary art’ now attests to a definition of the present as marked by pluralism, multiple perspectives and contingencies (p. 9). As Claire Bishop points out, 'contemporary' in art refers to a 'dialectical contemporaneity' rather than an ontological one, since 'it does not designate a style or period of the works themselves so much as an *approach* to them' (p. 9). Presentness thus relates to the contingency of an approach that is experimental and, as Latour and Weibel's 'Iconoclash' indicates, is also *performative*. This alludes to 'durational and evolutionary curatorial endeavors' that are developed through collaborative networks (O'Neill, 2012:). Since the 1990s, performative curatorial practices have

> offered a new paradigm for experimentalism, new formats of collective cultural action, and greater emphasis on self-organization within the contemporary art field. The newly ascendant discourse of curating brought with it an intensified and multiply distributed discursivity that resulted in dialogical approaches to exhibition production. (p. 119)

Within this context, the exhibition is a performative discursive event that involves all its participants or agents (i.e. artists, curators, audiences, artifacts and artworks) (Albano, 2014: 535–536; Ferguson, 1996: 175-190; Greenberg, 1995: 118–125) in the investigation and production of experiential knowledge (O'Neill, 2012: 122). Such a notion of the exhibition also conceptually resonates with the current definition of the experiment and the production of scientific knowledge suggesting a mobilization of meaning that is itself discursive for both the exhibition and the experiment. Today's synergies between the exhibition and the experiment still invest knowledge production – however, no longer in terms of universalizing paradigms, but rather in terms of performativity and dialogical contingencies. This is because science has also undergone an institutional critique that has led to a reappraisal of the experiment in ways that are akin to artistic practices.

From the 1960s onwards, the idea of science as a unified, autonomous and universal realm began to be questioned through a critique and historicizing of the processes underpinning the production of scientific knowledge (Hacking, 1983: 1–11; Latour, 1999: 145–173; Shapin, 2010: 388). Rather than being removed from contextual contingencies, the laboratory and the experiment were increasingly considered within the plurality of contexts in which they operated (Shapin, 2010: 390–390; see also Latour, 1987; Pickering, 1992). By situating the formulation of scientific knowledge(s) in terms of practices defined by and to be conceived in terms of place and time – that is as historical products – science historians, philosophers of science and sociologists have drawn attention to the implausibility of a notion of science as independent from the contexts in which it is conceived and removed from historical conditions. Despite differences in the debate, the critique has challenged a vision of science as an autonomous field of knowledge production advancing through milestones of individual discoveries according to a well-defined 'scientific method'. On the contrary, against the background of an overarching grand narrative of progressive achievement, the coming to be of scientific knowledge is murky, contentious, and fragmented. From such a critique has emerged the current assumption of scientific knowledge(s) as *performative* whereby the experiment epitomizes an understanding of science as an historically bound cluster of practices that use a range of cultural, technological and other kinds of resources to perform and hence produce knowledge (Hacking, 1983: 173–174; Pickering, 1995: 5–20). Such knowledge includes the material, social, cultural and spatio-temporal dimensions in which it emerges and operates, not as fact or observation but rather as agency (Hacking, 1983: 215–220; Pickering, 1995: 21–24). The experiment thus stands as a form of making, enacting and interacting in ways that *affect*. According to Latour (1999: 120–121) '*an experiment is an event*' characterized by a plurality of conditions and agents (including scientists, institutions, materials, non-human 'actors', etc.) that concur in and are altered by the processes enacted and their results or consequences. Such a definition that resonates with that of the exhibition as a performative discursive event acknowledges the collaborative and durational nature of scientific knowledge as it emerges from a multiplicity of relations (or networks and intersections) as well as practices which are both provisional and contextual. 'An actor' – following Latour (1999: 308) – is generated by the experimental trials: the performance that is the experiment.[7] Such performance frames the processes and actors of the experiment opening up new relations. The knowledge that an experiment produces is, in other words, circumstantial and contingent to the modalities and practices of making, to the interactions and relations or networks of actors (human and non-human) and their transformation; it is – to extend Charles Esche's (2011) definition of the exhibition – 'unstable and propositional'. The experiment as an event thus implies an approach to conditions, objects and people involving spatial, temporal and bodily engagement and the traces of its own development. It is situated and partial and, most conspicuously, affects all the enactors. This implies a notion of materiality that extends beyond physicality or matter to include the sensorium and the overt and latent traces of interaction, manipulation and practice, thus giving new emphasis to the connotations of experiencing that denotes performativity for both the experiment and the exhibition.

This is exemplified by another curatorial collaboration between Latour and Weibel for the exhibition 'Making Things Public: Atmospheres of Democracy' (2005) at Karlsruhe's Zetrum für Kunst und Medientechnologie, which was developed around the performativity of both the exhibition and the experiment in terms of their being an event open to interpretation, interaction and new modes of articulation. 'Making Things Public' was conceived as 'an installation within an installation' meant to question parliamentary democracy by inviting its audience to experience in a new way political matters through an 'experimental assembly of assemblies' – both human and non-human (whether a river, a geographical border, a supermarket or a concept) (Weibel and Latour, 2007: 107). The notion of the actor argued by Latour for the scientific experiment translated 'Making Things Public' into the 'thing' of politics with which the exhibition



Figures 4 and 5 View of the exhibition 'Making Things Public', March 20–October 3, 2005, ZKM | Center for Art and Media Karlsruhe, © ZKM | Center for Art and Media Karlsruhe, photo: Franz Wamhof.

experimented by creating a *performance* of democracy through art (see Figures 4 and 5). Divided into 13 subject areas, including 'the parliaments of nature' which dealt with the politics of ecology, 'no mediation, no representation' on science and the ways in which it has redefined systems of representation, and 'new eloquence' on the emergence of digital networks, the exhibition included artworks that variously instigated different approaches to things public and to the related affective positioning (i.e. set of opinions, patterns of emotional responses, and ways of finding solutions) questioning the very notions of authority and legitimacy (Latour, 2005: 14–16). This is the case of Warren Sack's web-based interactive installation, *Agonistics: A Language Game* (2004), which explored the democratic potential of verbal contests through an online game, Tom Fürstner's interactive installation *Narrative Device IV* (2005), which addressed the ways in which digital technologies dominate our experience of the world by tracking the audience interaction with screen as images blend and recompose. According to Latour, 'Making Things Public' drew on the double meaning of the term *representation* which in political science implies 'to gather the legitimate people around some issue' and in science and technology to 'present[s] or rather *represent[s]* what is the object of concern to the eyes and hears of those who have been assembled' exposing enactors, networks, and inscriptions. 'Contemporary avant-garde artists', observe Weibel and Latour (2007), 'respond sensitively to social changes by chaining the structure of their approach to their work and entering into new alliances with new forms of enactments' (p. 107). 'Making Things Public' thus engaged with ways of participation and agency within networks of human and non-human enactors in ways that were pertinent for an understanding of performativity for both the exhibition and the experiment. To see knowledge production – whether related to politics, art, or science – as a flow of interactions not fully determinable presupposes opening it up to a plurality of perspectives and possibilities (see Steiner, 2008: 243–265), which can be thought of as unstable and propositional. This is what denotes today's understanding of the exhibition as an experiment and the ways in which the two concepts inform each other.

Both terms in fact allude to practices of making that entail both performing and documenting, whereby knowledge does not only imply factual information but also ways of altering, communicating, affecting and being affected. The analogy suggests a materiality of inscription – in Jacques Derrida's (2000) sense – of shifting relations and references that is critical to both art and science. Whilst at the beginning of the 20th century such practices defined a domain of independent authority, which was also invested in the definition of an audience, in terms of the modern individual, today's notion of performativity reminds us that practices contain the signs of other enactors and performances, of iteration and loss. Both the experiment and the exhibition allude to a continuum of difference and repetition, of modification and inscription of traces, mobilizing multiple meanings, perspectives and histories, as well as temporalities and places. In the case of the exhibition, this is evident in the discursive strategies that characterize it and the involvement of the viewer as a maker of meaning in the process of visiting as he or she partakes of the circulation of the experiential knowledge that characterizes the exhibition through perceptive or emotional resonances. In the case of the experiment, performativity is akin to the debate in the arts around curatorial practices and their significance by raising similar questions about the ontological relation with the world and ultimately about the kinds of interpretation and understanding that derive from it (Pickering, 2008: 1–14). This also complicates the relationship of science with audiences, generating what appears as today's blurred realm of public engagement whereby accountability, communication and even entertainment have entered the scientific discourse, whether in relation to environmental issues, biopolitics or nature-culture in order to address the necessity of broader forms of relationality and agency (Franklin, 2008: 18–19), for which science often turns to the arts as a means of articulation.

Beyond an analogy

By way of a conclusion, we may reconsider Lowry's reappraisal of Barr's comparison for the Museum of Modern Art in New York mentioned at the beginning. Lowry's claim is indicative of a recognition of the origin of the institution and of a time when the experiment meant innovation, advancement and self-determination. Today the analogy has acquired a different meaning: hence, Lowry's claim rather than being nostalgic seems to point to the ways in which politics and institutional pressure interfere (and always have) with any definition of both the exhibition and the experiment as contingent and engaged forms of knowledge production. Among the traces of inscription of the analogy are the histories of convergence and divergence of the two disciplines. Such histories, as our discussion has pointed out, are intermingled, mutually crossing and informing each other despite the supposed separation of these two fields. Indeed, the ongoing currency of the analogy of the exhibition as an experiment is indicative of cultural overlaying and pollination that have happened and happen at deeper levels and in less overt forms between the two discourses rather than in more obvious interchanges or explicit collaborations, pointing to fertile syntheses that are worth further enquiry. This cross-fertilization, however, also contains its own disturbance. The experimental exhibition also implies a reflection on contemporaneity and what is contemporary art and, we could add, what is contemporary science. Such questioning, as the relation established by the analogy of the exhibition as an experiment testifies to, concerns the legitimacy and authority conferred on both the laboratory and the museum as sites of knowledge production in which networks of actors concur in generating meaning, bringing to the fore an outstanding debate on the politics and institutionally vested interests informing the reciprocity of these two discourses and any potentials for renovation.

Notes

1. From the Latin verb *experire*, to experiment means to try or test, and to have experience of, to experience, to feel (*Oxford English Dictionary*, 1989: 564–565).

2. According to Hans Ulrich Obrist (2001: 127), many of the new developments in curating 'are precisely related not only to space but also to the invention and re-invention of time in order to create new temporalities'.
3. The second exhibition in the series, 'Modern Art in the Modern World', dealt with 'affinities between contemporary art forms and other characteristic manifestations of our present civilization' (Museum of Modern Art, 1949: np).
4. During the late 18th century, science was professionalized, becoming a specialized set of practices rather than a gentleman's pursuit. This meant that experiments that were carried out as public demonstrations in gentlemen's houses moved into the exclusively designed space of the laboratory where they were carried out behind closed doors (Shapin, 2010: 62–88).
5. This is effected mainly through written publication – which can be regarded as a related space of interaction between the expert and potential audiences (Bourdiau, 2001: 42). The notion of the scientific method as a defining attribute in the formulation of scientific knowledge has been complicated through a questioning of its significance in terms of a plurality of methods (Shapin, 2010: 386).
6. An instance of scientific inscription is the use of mathematics as a means of description and analysis that contributes to constitution of the autonomy of certain fields of research, such as physics (Bourdieu, 2001: 42). Indeed, as Timothy Lenoir (1998: 15) argues, at the core of scientific experiment and its methodological approaches is a transformation of 'matter into written traces' which further underpins the construction of scientific models.
7. Latour (1999: 308) also defines the experiment 'as a list of effects – or performances – in the laboratory', the characteristics and behavior of a substance (whether an animate organism, a chemical transformation or physical occurrence).

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