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THE INTERNATIONAL SOCIETY FOR THE ARTS, SCIENCES AND TECHNOLOGY

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Science, Spectacle and Imagination

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Leonardo Reviews

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Reviews Panel

Editorials

Review Article

Reviewer Profile

Reviews

Science and the Industrialisation of the Imaginary

The study of the history of science has been radically changed over the last 30 years or so from being one of a chronology of men and discoveries to a more nuanced story of the struggle for acceptance of a new way of knowing the world. In *The Scientific Revolution* (1990) Stephen Shapin argues that there was no scientific revolution. "There was, rather, a diverse array of cultural practices aimed at understanding, explaining, and controlling the natural world, each with different characteristics and each experiencing different modes of change" (Shapin, 1996, p. 3). To give some idea of the breadth of these practices see the recent call for 'Scientia 2013', a conference "for scholars working in any area of early-modern intellectual culture, with the emergence of modern natural science serving as a general point of reference" which is based on the premise that "knowledge during the period of the Scientific Revolution was inherently interdisciplinary, involving complex mixtures of fields and objects that had not yet been separated into their modern 'scientific' hierarchies." The list of topics that they suggest might be useful to consider includes:

— Theological origins and implications of the new science

— Nature and scripture: which interprets which?

— What do images contribute to our understanding of early modern knowledge?

— Genealogies of 'reason', 'utility', and/or 'knowledge'

— Humanism and the scientific revolution

— Neo-Platonism, alchemy: where are we now?

— What were the relations between the new science and magic and demonology?

— Poetics and science: habits of thought?

— Renaissance philosophy and the development of a 'new' cosmology and anthropology

— Information and knowledge: a clear divide?

— Early-modern literature and the new knowledge: friends, or foes?

(see http://go.warwick.ac.uk/scientiae)

The range of this network may seem to be the fanciful musings of historians without boundaries, but we might consider a recent example of scientific enquiry such as the exploration of space in which the scientific aspects of the programme had to merge with the television schedules—in the case of Challenger II with disastrous results. We have also seen in the last three decades the extent to which the most far reaching dissemination practices merge science with radio and television and other popular media. For a number of reasons including a commitment to multi-disciplinarity, and a genuine concern to share a world view, some scientists have also embraced art practice in literature, film, theatre and more recently in installation and interventionist visual artworks. They do so with the security that science is clearly understood as an important—if not the only way—to know the world and that it both describes—and is—reality.

This was not the case in the late seventeenth and eighteen centuries. Science was not self evidently a pathway to truth about the world around and within us and each of these practices had to be convincing about its claims (most of which we now regard as partial and provisional—if not completely wrong). From this dispersed set of practices that we now understand as the beginning of science there is an orthodoxy of claims which were disseminated through a cascade of demonstrations, first to the homes of aristocrats and middles classes, and then to the masses in public displays and museums. It is now widely accepted that the tactics used in this struggle for the public acceptance of science has impacted on experimental practice, what science enquired into, how it was done, and what was prioritised. Moreover in many cases the imperatives of public demonstration (portability, miniaturization, smaller batteries, reliable experiments etc) inspired new directions for scientific research and achievement. The performative style of science persisted and twenty years ago in 1990 I.W Morus went so far as to claim that we had to understand nineteenth century experiments less as a means of discovery and more as an item of theatre. Since that time science as a branch of theatre has been accepted and with it an acknowledgement of the proximity of the ontology of science and the epistemology of its theatre and possibly pulpit.

Clergymen were taught how to impress a congregation with a series of conventions that were themselves borrowed from a long tradition of religious painting and sculpture. From contemporary images of science on display it is clear that the scientific demonstrator's gestures to underwrite the facts of science (the theatrical aspect of public experiment) were the same as those used by priests to invoke the ineffable power of

the sublime. The experimental apparatus also invoked another set of knowledge claims since it was made by craftsmen who could understand what the scientist required for the experiment, and could adapt and translate those needs into the routines of the finest cabinet making and clockwork. The steady accretion of scientific data required these skilled craftsmen to guarantee the quality of the instrument as an adjunct to the necessary precision needed for the repeatability of the phenomena in pursuit of an emerging ontological project. However this familiarity of form and quality of the craftsmanship from was visible to the observer (skeptical or otherwise) and also gestured to the robustness of the truth by inference of another context. In previous centuries science wrote its own stage-play with instruments and actions drawn from quite distant walks of life to invest them with authority. Some of this complexity is considered by Lisa Gitelman in *Always Already New Media, History, and the Data of Culture* In this study she looks at those scientific instruments in the nineteenth century that displayed themselves (and their histories) such as the phonograph and cinematograph, and their impact the definition of the document in the late twentieth century. Andrew Pickering seems to extend this notion in *The Cybernetic Brain; Sketches of Another Future,* when he remarks that, "We must think of cybernetics as staging for us a *performative epistemology,* directly engaged with its performative ontology – a vision of knowledge as *part* of performance rather than as an external controller of it." (p. 25)

In the last half century, possibly stimulated by the increasing abstractions of their method, scientists have understood that they need to return to this theatrical engagement and have been more willing to engage with a broad spectrum of arts but in doing so the waters have been somewhat muddied. The rhetoric of scientific dissemination (and tactics for attracting popular support for funded research) such as the use of popular media, literary style, demonstration and display to share knowledge and enthusiasm is often confused or compacted with the techniques of visual evidence and visualization (or sound and sonification) as part of scientific method. In perpetuating the confusion between *rhetoric* and *technique* the role of the artist appears to have become largely devolved to particular kinds of behaviours – (participation, collaboration, observation etc) which corresponds with a loose view of art practice beloved of amateurs and libertines but actually very little to do with what artists (or at least those artists who form the canon of the last 400 years in the west) actually do.

However, the interdependence of the twin tracks of the epistemological and the ontological in the same theatrical aspects of science should not allow us to be confused their quite distinct functions. To conflate the epistemological with the ontological would suggest that a photograph, and the camera that produces, it are a single apparatus rather than a dispositive; a particular arrangement of many discrete apparatus in a particular constellation that included the perception of the viewer. And, in the case of photography, this is an outcome of a quite specific moment in time detached from its experiential flow. Jonathan Crary has suggested that in the early nineteenth century this was a radical shift and the observer had to be retrained in order to read the photographic image as an index of a world outside the observer and not a quality of the apparatus of which they were part; put another way the observer was trained to embrace an epistemology in order to condone an ontology.

This required the eradication of the observer who ceased to be a participant in the world and instead was recast as a subject of a dispositive. Such amputations of the human potential can have very little to do with the aspirations, drivers and spirit that have driven all artistic endeavours as they are understood by those who have thought about the roots of art. (See Aby Warburg for example). Costatini's feature in this issue of *Leonardo Reviews Quarterly* offers a way for us to think about the artist quite outside this minefield. Her description and critique of Sugimoto's photographic practice draws us back to the engines of art as an independent aspect of human endeavour that cannot devolve history and its determining effect to the past. The recovery of the 'pathosformula' (the idea that the human is not damaged by the chaotic powers of which he is part) is for Warburg the work of the artist in any civilization. In the context of science and spectacle set out here this means that in order to do no harm the conflation of the scientific rhetoric of spectacle (an epistemology) and the scientific acquisition of visual data about the world (an ontology)—is unraveled if those who operate at the interface of art and science are not to baffle and disempower their own audiences.

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Editorial Martyn Woodward
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An Electrical Deep Time of the Modern Imagination

Giovanna Costantini's article in this issue of LIRIQ reveals an holistic voice for contemporary Art-science, through that of the Japanese artist Hiroshi Sugimoto, who traces the emergence of human thought over hundreds and thousands of years, to an indistinct 'origin' which merges with time and the universe. With this in mind, Costantini suggests that over time, human thought has become increasingly more detached from these indistinct origins, informed by a positivistic-materialistic world-view, and instead points to a more holistic account of human thought, free of positivism, in which matter and mind are inclusive, co-dependent, interconnected and reciprocal.

Knowledge, within this phenomenal and vitalist view, is manifest within a world in which subject and object are not separated, knowledge is emergent from, what Costantini terms a "primordial sea of being". Costantini points to an account of human history that is both "deep and dynamic", a process of continuous engagement in which thought itself is consistently reworked. Within Costantini's vitalist account of Sugimoto's work, such dualisms as nature and culture, earth and sky, past and present dissolve. The 'origins' that Sugimoto seeks are, for Costantini, revealed as the very essence of the creative process itself, a "vital energy born of the relationship within and over time." A force that Costantini maintains is a sustenance that inspires the very fusion of contemporary art and science, a "deeper" vitalist energy within which both art and science have emerged, from a shared primordial sea of being.

The Scientia 2013 call offers a further charter to these deeper waters, recognising that "knowledge during the period of the Scientific Revolution was inherently interdisciplinary, involving complex mixtures of fields and objects that had not yet been separated into their modern 'scientific' hierarchies." According to Michael Punt this is an indication of how the seventeenth and eighteenth century became a key moment within which the practices of scientific investigation, and that of the arts and crafts, were intimately linked through a complex and reciprocal entanglement involving a co-constructed knowledge. These entanglements are seen by Punt as "performative", in which knowledge does not 'control' and frame an external world, but is directly engaged with, and performed by the actors, along with its ontology. This moment during the modern period is suggested to provide a form of "theatrical engagement" which is being re-visited by contemporary scientists and philosophers of science with a perceived need to engage more with the wider spectrum of the arts and popular culture. This theatrical engagement offered, however, has a much deeper resonance than may be accounted for through attempts to fuse art and science currently realised. Costantini's "deeper" vitalism finds further recognition through the importance of the often neglected notion of *Deep Time,* formulated during the eighteenth century, as a fundamental aspect of modern thinking, (re)discovering the depths of human thinking that lie within the very deep structures of the earth.

Media Archeologist Siegfried Zielinski reminds us that during the turn of the eighteenth and nineteenth century, the notion that the earth was older than previously believed (as maintained through divine accounts) became a core topic within the academies (2002, pp. 3-6). For Zielinski, James Hutton's *Theory of the Earth* (1778), explained a history of the earth that was free of a theological dogma, and was conceived not in terms of a linear progression but as a *dynamic cycle* of erosion, deposition, consolidation and uplifting. As Zielinski describes, for Hutton, the earth had a *deep time*, that ran much deeper than the upper crust of the earth, that of granite, and extended into the sub-strata below which was now seen to co-constitute the upper layer. For Zielinski, Hutton's concept of the earth was as a cyclic self-renewing machine, without beginning or end, constituted by matter and energy flows.

The construction of a deep time to the earth brought a further implication for the very role and notion of the human itself. Shryock and Smail (2009) suggest in their re-thinking of modern historiography, the subsequent emergence of Charles Darwin's *On the Origin of Species by Means of Natural Selection* (1859) brought about a drastic change in the sense of the role of the human within the universe (pp. 26-27). The evolutionary approach of Darwin, they suggest, resulted in a new sense of human history, in which the human's role was no longer seen as essential and permanent, the human itself had a *deep time*: a deeper relation to the very environment in which they are situated. The human was now implicated within, and impacted upon, by distributed (and non-human) determinants.

For this deep time to figure more fully within an account of human history, Smail suggests that methods and narratives were needed that could

triangulate between agents and materials, methods that could not be fully supported within the models of human cognition, which stressed the rational rather than relational, held at the time (pp. 30-31). The maintenance of a *materialist* account of history during the eighteenth and nineteenth century could not fully support the emergence of *deep time*—the immaterial, energetic and relational aspects—as such, Shryock and Smail offer a re-assessment of deep time's implications for both the human and human history by utilising a more contemporary distributed account of cognition and the human drawn from anthropology. What Shryock and Smail alert us to is an under-realised aspect of eighteenth and nineteenth century (modern) thought, that of deep time itself, that runs a lot deeper within human cognition, imagination and creativity than has been accounted for within conventional materialist accounts of history. A deep time that alludes to a model of mind, and of the human, which is itself distributed amongst much wider determinants than may have been accounted for.

This anthropological re-imagining of the modern period offers a re-assessment of the activities of artists and scientists, which begins to recognise the wider distributed aspects of their collaborations, themselves within the energies and flows of Hutton's account of the earth, that have determining roles to play upon the human. Whereas Costantini and Punt recognise the wider, distributed aspects of Artscience across many brains, imaginations and experiences, the suggested recovery of Aby Warburg's pathosformula (Punt) brings a pathosformula which is in part co-constituted within the wider *deep time* relations of the earth itself. Situating Warburg's thinking back within the emergence of *Deep Time* during the modern period, as Smail and Zielinski suggest within the work of Charles Darwin and James Hutton, points not just to the nuances of the collaboration between discrete practices such as craft and science; the engineering precision required for scientific repeatability, but to the 'deeper', distributed elements of the wider pathosformula of the time that both craft and science fundamentally share, to the wider dimensions of reality not entirely that of the human.

Such 'deep time' aspects of the modern era are becoming more increasingly acknowledged, such as the emergence of electricity; Morus' *Currents From the Underworld, Electricity and the Technology of Display in Early Victorian England*, and Benz's *The Theology of Electricity: On the Encounter and Explanation of Theology and Science in the Seventeenth and Eighteenth Centuries*. These accounts provide access to the deeper determining aspects of electricity upon the distributed pathosformula that the arts, crafts and sciences can be said to share and emerge from within, as Paolo Bertucci uncovers (2006), the emergence of electricity brought with it a different order of the natural world, which includes the human. Costantini's own reference of Faraday's Cage as a guide for Artscience, points not only to the conductivity of the entwined metal bars that share the electrical current but also to the conditions of the behaviour of electricity upon the very construction of the cage itself. To understand the deeply entangled and intimate relations between art and science more fully for a contemporary re-evaluation, is then not to begin from the material (and co-operative) engagements between diverse peoples as a site of origin, but to begin by situating both scientific and artistic practice themselves within the distributed, and deeper, pathosformula of the period—a pathosformula that is in part constituted by the emergence of electricity. The re-instating of the pathosformula within the deep time relations of the earth provide a meshwork to further develop the more holistic accounts of human thought, free of positivistic and materialistic world-views, a further voice for contemporary Artscience.

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Editorial Martha Blassnigg
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The Zigzag of Science and Consciousness in Action

In this issue of LIRIQ Giovanna Costantini's review essay lays bare the implied cultural values of human endeavour and philosophical underpinnings of art-science collaborations as she traces them in a number of contemporary time-based media productions. What follows is a reflective response to some aspects of her discussion, by taking up Michael Punt's exposition and invitation in his editorial to unravel scientific rhetoric to indicate the distinction between the ontological and epistemological implications of research practices. It also responds to Martyn Woodward's journey into an archaeological historiography that alludes to the liberating potential of pathosformulas in the artistic and scientific practices as distributed among the wider meshwork of deep time relations.

By taking a rhetorical lead from the art-historian Aby Warburg's symbolism of the lightning flash as the zigzag dynamo between the divine and the human, this exposition aims to map a journey of creative consciousness into the interwoven relationships of Costantini's materials, and in this way amplifying Punt's separation between an ontological and epistemological human endeavour in view of the pathosformula as enduring and contingent expressive trope of consciousness, which in Punt's editorial culminated in a vision of a matured Warburgian pathosformula as the dynamic carrier and caption of an original impulse unhampered by the losses and changes of transference over time, location and generations. Warburg reflected in his famous Kreuzlingen lecture in 1923:

The lightening imprisoned in wire—captured electricity—has produced a culture with no use for paganism. What has replaced it? Natural forces are no longer seen in their biomorphic guise, but rather as infinite waves obedient to the human touch. With these waves, the culture of the machine age destroys what the natural sciences born of myth so arduously achieved: the space for devotion, which evolved in turn into the space required for reflection. [1]

Inspired by his North-America field-visits to the Pueblos with particular interest in the serpent ritual, in which he interpreted the zigzag lines as symbols for the untamed energies of lightening or the snake, Warburg drew an analogy to the movement between life and art, between the Dionysian and the Apollonian principle, the conflict between magical-associative (symbolic) and logical-dissociative (allegorical-semiotic) modes of representation. As he reflected in his field notes on the perception of natural forces by Indian peoples and Western civilisation:

> The attempt at magical effects is thus first of all an attempt to appropriate a natural event in the living likeness of its form and contours: lightening is attracted through mimetic appropriation, unlike in modern culture, where it is drawn into the ground by an inorganic instrument and eliminated. What distinguishes such an attitude toward the environment from ours is that the mimetic image is supposed to bring about a relation by force, whereas we strive for spiritual and material distance. (Michaud 2004: 306)

In a rather polemical critical reading of Warburg's interpretation of the serpent ritual in light of an ethnographic understanding of Pueblo culture David Freedberg sees a hysteric response of a Western inductive reading of so-called primitive culture, of a ritual that manifested rootedness rather than agitation, self-control and contact with the earth, the physical and mental bond with certain kinds of geometric structure: (Freedberg 2004: 34)

> When the snakes are first collected at Walpi, and Oraibi, they are taken back down into the earth, into the kivas, there to remain for three days with the men who are not and will not be their opponents, but their calm handlers. In this mutual proximity man and snake become familiar with each other, and join in a spiritual union. Together they become one with the earth. There is no struggle. Here, within the earth, the demons of the earth become one with those who will dance with them. But "dance" may even be the wrong word here. It will not be one that is filled with excessive movement or frenzy." (Freedberg 2004: 18).

Freedberg suggests Warburg overlooked his own observations in favour of an interpretation drawn from the underworld of European myth and reminds us of Warburg's notes on the Kachina dance at Oraibi as "reverential, calm and unperturbed ("unermüdlichen ernsthaften Feierlichkeit"), describing the dancers as "unwearied grave and ceremonious" ("rührig und in ungestörter Andacht seine Tanzbewegungen weiter vollführte"). (Freedberg 2004: 17-18) It is certainly crucial to be aware of the 19th century

evolutionary framework and imperialist hegemonies that still informed approaches to so-called primitive cultures in cultural anthropology at the time of Warburg's travels when he communicated with Franz Boas in the 1890s (and still inform problematic cultural dichotomies today). However, what should not be overlooked, and which probably only finds its full expression in the Mnemosyne Atlas (1924-1929), is that Warburg reaches into the depths of the anthropology of consciousness as it manifests in charged forms of expressions (pathosformulas) across cultures and periods. His use of the language and framework of Greek mythology in the context of the classic tradition of European art-history is ultimately perhaps of less importance than the insight he brings through the exemplification of the Mnemosyne Atlas: it is the continuous struggle throughout the history of mankind between the Dionysian and Apollonian forces, between stillness and movement, creation and release as they manifest in religious and artistic forms.

The core insights of Warburg invite to be extended to the dynamics of consciousness, which he strove so arduously to capture in his psychological history of humankind. Such an extension exceeds his own framework of inquiry and yet it seems to point to a much larger meshwork of co-constituting forces in the evolution of the earth, in which a constant dynamic making of material form and creative conscious evolution manifest in the very crust of its appearances. The traces remain indicators of a thrust and energy that ceaselessly transmutes in ever-new pathways in its creative force. Henri Bergson provides a most powerful account of this dynamic in his *Creative Evolution* (1998 [1907], in which consciousness in its becoming is conceived as dynamic and contingent just as the material formation of biological life.

Warburg, who in three of the four theses at the end of his dissertation treated the relations between motion and dynamic states, remarks in his lecture on the Serpentine dance that "the circle, the coiled serpent, is the symbol for the rhythm of time..." (Warburg 1939: 281). This rhythm of time and consciousness, following Warburg through Bergson, if seen less than a polemic (as it often manifests in the dialectics of subject-object dichotomies) and more as a co-constituting friction and dynamo of life in its making, may provide a key to thinking about the ontological and epistemological implications of research practices as two distinct yet interdependent domains. Mutually inclusive and co-dependent, yet in constant tension or at least fragile equilibrium, much as Bergson highlighted as the tensions between intellect and intuition as complementary tendencies of the mind, the collapse of past and future in the present is seductive of a masking of their distinctly required epistemologies. In any creative act, past and future collide in the dynamic activity of the present, which only intuition knows how to negotiate and find direction, whilst at the same time they are cognitively separated in the self-conscious reflection that is necessary to discern, cognise and focus on intention and meaningful inquiry. This is: an intuition that is not reduced to a nostalgic form of instinct, but a highly developed form of intelligence in the human being, emerging from the long trajectory of evolution; as well as an intellect that is not reduced to a mechanistic brain-functioning but the intelligent negotiation with directed thinking that knows to embrace the ontological simultaneously as it reflects on it with rigour and focus through a certain self-distancing. These are the spaces for reflection — "Denkraum der Besonnenheit" or "Andachtsraum" [2] (Warburg 1992: 267) — that Warburg was so eager to preserve and which led him to rather polemically critique technologies of industrialisation; but which nonetheless indicates the very threshold which the Humanities still hold as their cradle in the current fierce ambient of a STEM driven research environment. In this sense the sciences as much as the arts can be conceived as a zigzag between the epistemological and the ontological, sometimes taking polemic or extreme perspectives between either the so-called positivist and so-called esoteric, and only in the most fragile, modest and generous elegance find a relatively stable equilibrium for which outstanding figures and collaborative initiatives throughout the history can be attributed for.

As Costantini and Woodward allude to, Hiroshi Sugimoto's practice stands out as exemplary in this context. It was the capricious characteristic of static electricity in Sugimoto's New York studio that made him wrestle with the ambiguous and changing conditions in the dark room during developing photographic prints. With an inspired, curious mindset he took this recurring falacity as constructive challenge that led him into a scientifically driven adventure of working directly with the electrical discharge as object of photography. Inspired by "aborted discharge" experiments by Fox Talbot, he applied various electrical generators from a rebuilt Wimhurst prototype to a Tesla coil ending up with a Van Der Graaf generator that transferred the sparks directly to the photosensitive paper under con-

trolled conditions of the atmosphere, in particular humidity and temperature, which resulted in the so-called 'Lightning Fields' series. The catalogue that accompanied the exhibition entitled 'Nature of Light' [3] (Sugimoto 2010) comprises 15 'Lightning Fields' photographs as well as Sugimoto's printed reinterpretations of 15 negatives by Talbot (which he had not printed into positives), referenced as Talbot's own conception of the action of Light upon sensitive paper which he called "Photogenic Drawing" [4]. Informed by Charles Wheatstone's electrical experiments, Talbot experimented with illumination through electric sparks and a spinning disk anticipating so-called instantaneous photographic techniques for stopping time" [5], an interest he shared with Michael Faraday to which they referred to as "fixing transience". [6] The question that is rarely asked is: What for? What is/was the original motivation? Perhaps the most salient indication is found in accounts facing a sublime or subliminal moment or epiphany; as Michael Punt reflected during an INTR meeting in Marseilles hosted by Roger Malina at IMeRA [7] facing Mont Sainte Victoire, more than 100 years after Paul Cézanne had confronted himself repeatedly with the phenomenon negotiating in an exemplary exercise of artistic practice and constant retraining of perception (Ione 2012), when he noted that the most burning and perhaps only possible question that could arise from such an encounter was "What now?" (rather then "What's next?")

Sugimoto's work constantly draws the viewer into the present of an encounter that straddles most powerful energetic expression with stillness, which confirms Freedberg's provocative question: "But can the soul be revealed through non-frenzied movement, whether of body, hair, or ornament? Of course it can. There can be emotion without motion." Sugimoto expands the capacity to take hold of time, to "fix transcience", as inherent in the photographic technique into the perception of the beholder confronting any object or formal appearance. As Panzer (2011) notes on his work: "the fossil, the film, the spark all become endowed with the capacity to stop time, and hold it, once animated by a powerful imagination." Sugimoto declares:

> Now as the waves of 21st-century art seem to be stilling to a breezeless lull, I find myself aspiring to a wholly anachronistic art, travelling back through time to once again portray in photographs an inner phenomena that painting cannot depict. Printing the precious negatives that Talbot bequeathed, I head back to the origins of photography, to the origins of painting, perhaps to the origins of consciousness, to the very earliest milestone of my being. (Panzer 2011)

Evocative of early scientific investigations into electricity and lighting such as by Nikolas Tesla (1993) and his wireless technologies, this is evocative of the earlier mentioned analogy of the zigzag as it featured significantly in Henri Bergson's philosophy, as a metaphor for the improbabilities and contingencies of the mechanistic cause-and-effect principle when applied to the dimensions of life. (Bergson 1998: 57) Because of the importance that the intellect has carried through the creative evolution that led to human life, the silent mastery of the immaterial domains of underlying motion remained overshadowed and is commonly treated as an invisible given. This underlying motion, as Warburg so powerfully evoked, is most tangible in the participatory experience of the viewer in a transference of consciousness, an ontological and epistemological encounter. In a similar spirit Ariella Azoulay (2012) re-reads the common interpretations of the understanding of photography in Talbot's *The Pencil of Nature*, not as an automatic writing machine or nature writing itself, but as an actor among actors:

> Rather, the pencil of nature could be seen as an inscribing machine, which transforms the encounter that comes into being around it, through it and by means of its mediation, into a special form of encounter between participants where none of them possesses a sovereign status. In this encounter, in a structured fashion and despite the threat of disruption, the pencil of nature for the most part produces a visual protocol immune to the complete domination of any one of the participants in the encounter and to their possible claim for sovereignty. (p. 70)

Whilst Azoulay focuses on human subjects, this flat model of relational interaction can be extended to objects as active participants in the event and encounter, which recognises and produces time in its own dominion beyond chronological constraints. This qualitative durational time of the present at any given moment is transposed, relived, remembered, forgotten, renewed, extended… Rather than a confrontation between a subject and an object through an objective, the visualising event turns into a multiplicity of transpositions through consciousness(es) that exceed the limits of delineated subject positions

and indicates an approach towards an ontology of consciousness (as ontological quest) rather than an exclusive epistemology (conscious "of" something).

The issue that seems to be nagging to come to full light in all three editorials is the peculiar dynamics of consciousness, as precarious, demanding and contingent just as anything material manifest which is so much more accessible and easier to measure. Perhaps by the same token in ignoring some of the complex drivers that precipitate technology, too much weight has and is been given to its material form and mediated content. Such thinking often leads, or is informed by, the idea of consciousness as an epiphenomenonon of the brain. Current approaches to the history of science and technology and to deep history spanning both human and non-human phenomena, are starting to grasp the fuller dimensionalities of their coming into being, and reveal a maturing recognition of self-consciousness as crucial vehicle to both distinguish and straddle the sometimes conflicting domains of ontological and epistemological inquiry.

Among the 'Lightning Field' series, Sugimoto chose an image printed from one of Talbot's negatives of the *Laocoön*, a life-long obsession of Warburg, a deep preoccupation with the problem of pathos, interpreted as violent movement, affect and gesture through which he indicated connections between struggles with the snake, emotion, salvation, and healing. Perhaps a certain surge of humanity's consciousness is coming to a maturity (once again) in which the relationship with the snake, or in other words the ancient ideas about the sublime with its connotations of horror, can be handled more gently, as Freedberg also recalls in his account of the Pueblo serpent rituals. One in which the Damocles sword of the Romanticists might find a temporary liberation *for* a fearless confrontation with a long due enlightenment that recognises both the ontological and epistemological as inseparable yet necessarily distinguished counterparts in the long and indeed deep history of creative evolution. The Humanities may be able to bring some light into the 'apparent appearances' (no pun intended) of the abyss that the science-art confrontation reports to encounter and, as Punt urges, in an inclusive, rigorous yet imaginative and innovative thrust of creativity which is able to recognise and respect all participating actants on their own terms on the shared zigzag journey of the multiplicity of consciousness' evolution.

In other words, once we factor in consciousness as an ontological dimension, and, most importantly, as vehicle to travel through diverse epistemological levels and layers, then the subject-object dichotomy might appear merely as a by-product of a biased focus on an intellectual perspective. Epistemology in that sense can never be separated from ontology, and yet has to be recognised and approached in specific ways correspondingly to the required level of engagement. Such an indicated 'knowing as being with' rather than 'knowledge of something' shifts the tone from a possessive attitude of so-called 'knowledge acquisition' to a shared collaborative enterprise, one that might be called 'ontologically robust' knowledge, expanding Helga Nowotny's term of the 'socially robust', which potentially, in the spirit of deep history, includes dimensions beyond the human realm. A starting point may be to depart from the obvious that, what it means to be human, carries all evolutionary realms within the very constitution of the body-mind complex, as Edgar Morin reminds us (Niculescu 2008: 23-32), which excludes the separation between human and the animal, plant and mineral realms. But the real work of an ontological epistemology lies in the recognition and research into what differentiates the specific human capacities and values within the evolutionary multiplicity, which include aspects of self-recognition, self-consciousness and the ability of self-transcendence. In light of the long (and indeed deep) history of evolution, it seems that we are only at the very beginning of a dawning recognition where the zigzag paths of the dynamics of the curiosity to know through being conscious might lead us in the future. From recent research into greater complexity and transdisciplinary investigations it is clear that pioneering research into the domains of the yet unknown will need open-minded, intellectually flexible and generous, creative, imaginative and yet rigorous collaborations, as earlier historical peaks of extraordinary insight have demonstrated to provide for enduring knowledge practices in order to fulfill what Sundar Sarukkai called the "ethnics of curiosity" in a widest ontological sense. If being cannot be separated from knowing, it should not lead to a hysteria of subjectivity, one that science is at odds to suppress, but as Warburg struggled to come to terms with, perhaps the restoration of a 'calm contemplation' that propels knowing into the depths of what Alfonso Montuori (Niculescu 2008: xi) framed as 'being, doing and relating'—an immanent pathway towards the sublime?

Notes

[1] From Warburg's *Schlangenritual* (Warburg 2002, 1988, 1939). Cited in Michaud (2004: 306) and in Johnson (2012: 35).

[2] This can be translated into an intermediary (mental/virtual) space for reflection.

[3] The title resonates with Talbot's *The Pencil of Nature*, in which Talbot anticipated xerography, infrared film, and offset type, among other modern uses of photographic technology. (Panzer 2011)

[4] Talbot's new method of capturing visual impressions, to which he referred to as the "royal road to *Drawing*" was to appeal to the professional artist and amateur alike, especially to the latter who encountered difficulties in learning the rules of perspective or those "who moreover have the misfortune to be lazy". (Talbot 1944)

[5] See Chitra Ramalingam, 'Stopping Time: Henry Fox Talbot and the Origins of Freeze-Frame Photography', *Endeavour*, xxxii (2008), pp. 86–93.

[6] See Chitra Ramalingam, 'Fixing Transience: Photography and Other Images of Time in 1830s London', in *Time and Photography*, ed. Jan Baetens, Alexander Streitberger and Hilde Van Gelder (Leuven, 2010), pp. 3–26. Faraday was also the one who publically introduced Talbot's photographic process at one of his famous Friday lectures at the Royal Institution in January 1839 shortly after the introduction of Daguerre's technique in Paris.

[7] The International Network for Transdisciplinary Research (INTR) was funded by Plymouth University, led by Michael Punt, aimed at investigating current understanding of transdisciplinarity through practice-informed research approaches. Its fourth meeting was held between 13-15 July 2012 at the Aix-Marseille Institute for Advanced Studies in Marseilles (http://www.imera.fr/index.php/en.html). For more information see http://trans-techresearch.net/intr (accessed 25 October 2012)

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Editorial Roger F. Malina
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Science in the First Person Singular: New Roles for the Arts in the Theatricalisation of Science?

1) Some preliminary contextualisation

In this discussion for LIRIQ I would like to start off from Michael Punt's comment that:

"For a number of reasons including a commitment to multi-disciplinarity, and a genuine concern to share and world view, some scientists have also embraced art practice in literature, film, theatre and more recently in installation and interventionist visual artworks. They do so with the security that science is clearly understood as an important—if not the only way—to know the world and that it both describes—and is—reality." I certainly count myself among these scientists.

Punt goes on to say:

"This was not the case in the late seventeenth and eighteen centuries. Science was not self-evidently a pathway to truth about the world around and within us and each of these practices had to be convincing about its claims (most of which we now regard as partial and provisional—if not completely wrong)"

As the sole 'scientist' in this LIRIQ discussion it allows me to position myself as clearly as I can on two issues that inevitably contextualise my approach to these topics. First I am an atheist. I came to this clear position only a few years ago when confronted by my eldest son; recently immersed in the renewed religiosity of American university students, he was just helping set up the university's first "Atheist Club". He asked me whether I was agnostic or atheist; I had never taken position in a clear manner. It seems to me that one of the successes of the sciences is that it has been able to elaborate credible and convincing scenarios of how structure has emerged in the universe, and that we are now beginning to understand the mechanisms that lead to self-organisation through low level interactions in the sciences of complexity and the origin and development of life. The sciences of complexity and Darwinism need no teleological appeal, nor intelligent design (see Stuart Kauffman's "Re-Inventing the Sacred" [1] for one attempt to put the small and big pictures together). Yet this view is not universally held by my scientific colleagues and it can be argued that one of the 'failures of the enlightenment' has been the realisation that science in itself cannot re-design its social embedding. Living through the current American Presidential campaign as I write this is a depressing reminder of the resurgent 'religious' context within which science develops today.

My second confession is that I am a positivist (though reformed). I certainly believe that the human senses, augmented and extended by scientific instruments, can be used to obtain falsifiable knowledge of the world, a world that exists independent of our existence; and that the scientific method is a reliable, the most reliable available, method for obtaining such knowledge. However I fully understand the post-modern critique and that factors external to science determine not only the direction that science takes but also the kinds of explanations that have currency at any given time as well as the process of social acceptance by peers. The scientific method itself evolves, as does the nature of acceptable explanations. Two recent developments have been forcing new epistemological strategies in the scientific method. The first is the appearance of elaborate computer simulations, which act as 'falsifiable hypotheses' for understanding complex systems (including social ones). The second is the impact of 'big data' on field after field of inquiry, enabling research questions that were unanswerable before to be attacked and re-orienting the direction towards questions where big data is available; correlations and extrapolations become powerful methods of scientific explanation. These raise new issues in the 'presentation' or 're-presentation' of science that I will elaborate further below. There is no doubt that the digital humanities are re-confronting many of the battles of the eighteenth and nineteenth centuries

2) The Social Embedding of Science

Both Martyn Woodward and Michael Punt refer us to Scientia 2013 [2] a conference to be held in spring 2013. The organisers state: "The premise of this conference is that the Scientific Revolution can be considered an interdisciplinary process involving Biblical exegesis, art theory, and literary humanism, as well as natural philosophy, alchemy, occult practices, and trade knowledge." Would Scientia 2413, 800 years after Galileo' not equally well discuss twenty-first century science in similar terms? Globalisation would expand the issue of Biblical exegesis to those of other world religions that now are equally strong cultural contexts for science. Art theory and literary humanism would be expanded to the influence of e-culture on the cultural embedding of science.

Trade knowledge would be replaced by global commerce and military strategy and its influence on the direction that science takes through funding mechanisms. And alchemy and occult practices are alive and well as evidences by the dismal statistics on global scientific literacy.

3) Presentation and Re-Presentation

I would like to argue that we have entered a crisis of 'representation' as profound as those of the Renaissance or of the nineteenth century, and that this is driving a new theatricalisation of science. As described by Michael Punt, Martha Blassnigg and Martyn Woodward in their essays, the arts and crafts played an important role in making tangible and sensible the discoveries of unseen worlds revealed by X-rays, by electromagnetism, by the discovery of microbes; and often scientific experiments played in performative roles, in public, were key parts of the rhetoric of science to convince not only peers but the public of the plausibility and understandability of the new phenomena being revealed.

We are indeed seeing a new 'performativity' in science today that harks back to the theatrical rhetoric of nineteenth century scientists. The first wave of this appeared in the 1970s with the realisation that there were not enough scientists and engineers being trained for the growing technological industries; the STEM (Science Technology Education Mathematics) programmes became embedded in the scientific enterprise. The new performative spaces included the re-invention of science museums, such as the San Francisco Exploratorium; indeed from the beginning when it was founded by Frank Oppenheimer, artists were called on as mediators not only to improve exhibit design but to create art work that would intrigue and inform their publics. In the U.S., agencies such as NASA began to fund in the 1990s 'science outreach' programs to take the scientific results outside of the science ghettos into classroom and into the media. As pointed out by Michael Punt major scientific projects began to be explicitly staged, often live, as with the US Shuttle launches and moon landings. The recent JPL landing of the Curiosity spacecraft on Mars is perhaps an exemplar, as is the way the Higgs Boson discoveries at CERN were revealed act by act in real time to the media and to the public; it is perhaps no coincidence that CERN announced just a year before its official hosting of artists residencies programs. Science indeed is now often designed as public theater as it was in the nineteenth century, and the rhetorical strategies are part of deep battles to maintain the supremacy of the scientific methods as explanatory systems of natural phenomena.

The second wave of new forms of science as theater began to appear in the 1990s through what are called 'public engagement' rather than 'science outreach' methodologies funded by various agencies. The concern here is not simply attracting young people into STEM careers, but anchoring science in the public imagination and social and cultural practices. In April 2001 the global 'Yuri's Night' parties [3] began to be held, celebrating the first human space flight; hundreds of thousands of people have been attracted. There have been a proliferation of such events, which have also been adopted by such international festivals as Ars Electronica, ISEA, Future Everything, Zero One; these events are cultural events that appropriate science and technology—not science education events.

Simultaneous with the science engagement type activities, we have witnessed the emergence over the last ten years of new forms of artistic engagement in science through art-science collaboration practices, new kinds of artists residencies (such as those promoted by the Wellcome Trust in the UK) and the development of new institutional contexts for such work (eg. Symbiotica, IMERA, Synapse, ArtistsinLabs; see the ArtsActive network for some other examples [4]). Other curatorial spaces such as the Dublin Science Gallery, Arts Catalyst have emerged in a growing ecology for showing art-science work to diverse publics. Though art-science collaboration is embedded in rhetoric of mutual influence, the dominant outputs to date have been of a performative nature in arts contexts. In some cases these draw explicitly on nineteenth century practices such as Adam Brown and Robert Root Bernstein's public re-staging of the 1953 Miller-Urey experiments on origins-of-life [5].

Just in the eighteenth and nineteenth century this creates tensions between the motivations of the scientists and the motivations of the theatrical producers.

Michael Punt states: "In perpetuating the confusion between rhetoric and technique the role of the artist appears to have become largely devolved to particular kinds of behaviours—(participation, collaboration, observation etc) which corresponds with a loose view of art practice beloved of amateurs and libertines but actually very little to do with what artists (or at least those

artists who form the canon of the last 400 years in the west) actually do." And this un-ease is picked up on by Martha Blassnigg who goes on to point out, in discussing Warburg and Bergson's views, that "These were the spaces for reflection—'Denkraum der Besonnenheit' or 'Andachtsraum' (Warburg 1992: 267) that Warburg was so eager to preserve and which led him to rather polemically critique technologies of industrialisation; but which nonetheless indicates the very threshold which the Humanities still hold as their cradle in the current fierce ambient of a STEM driven research environment." Indeed the role of the arts and humanities, if reduced to an instrumentalised function, will be unable to help re-invent science in a socially robust context as argued by Helga Nowotny.

4) Big Data is not Just More Data

Today's crisis in representation is driven by two other epistemological transitions.

First we have entered a period of data plenty, the era of big data. Historian Daniel Boorstin called this an epistemological inversion, a transition from a science that was meaning rich and data poor to one that is data rich and meaning poor. We are only just beginning to invent the new systems of representation that allow one to 'visualise' (and sonify or more generally make 'sensible') these large volumes of data. The invention of perspective as a system of representation did not happen overnight. Just as it took decades for the technologies of photography and cinema to develop their visual languages and conventions, so we can expect that it will take many years of experimentation to develop stabilised ways that large volumes of data can be represented to both scientific peers and larger publics. Big data is not just more data: new research questions become accessible that were unthinkable before. Hiding data, or data cloaking, becomes a crucial technique to enable representations that are manageable. Large complex data sets sometimes drive 3D navigable representations; swimming or flying through data is not merely metaphoric but performative; informed by our knowledge of 'mirror neuron' processes in cognition, these theatricalisations help build up intuition and tacit or implicit knowledge. Live interaction with data introduces the possibility of manipulation, transformation in read time, mash ups, of data objects or representations. Though live interaction with data is not specific to big data situations, large data volumes privilege such cinematic and immersive techniques over static fixed representations. Data becomes theater and it is through this theater that meaning and sense are created.

The second transition that is driving a crisis in representation is the proliferation of scientific domains that reveal phenomena that are incommensurable with the human senses and perception. This is not new to today's science and indeed in nineteenth century science such problems arose as microscopes, telescopes, electrical probes gave access to phenomena that were not directly accessible to the human senses. What is new today is the dominance of these new scientific terrains made accessible through a growing menagerie of new scientific instrumentation. The science of evolution dealt with evolution of life forms that were understandable if not familiar, to the layman. However the nano-sciences, molecular biology, high-energy physics and quantum mechanics, brain imaging, complex systems (such as global warming) deal with phenomena that we cannot perceive, even with augmented senses. Our intuitions, our languages, metaphors, our basic ontologies, arise from the performative manipulation, beginning at an early age, of the world around us. But in the nano world we are in territory where everything has to be invented in terms of representation and again this privileges new forms of theatricality. The representation of phenomena not only invisible to the human senses but in-commensurable with human experience and concepts requires new forms of representation.

In a recent issue of *Leonardo* [6], a number of writers confronted the reality of the 'in-commensurability' of the nano world with those of our current languages of representation. The concept of color for instance is a meaningless concept at the nano world where atoms and interactions occur at scales smaller than the wavelength of light. Objects do not have edges in the world of quantum mechanics; every representation of atoms of molecules that shows discrete objects with sharp edges is fundamentally misleading. In air a typical carbon monoxide molecule moves at 500 meters a second (yes, half a kilometer a second) faster than any kind of cinema can meaningfully capture. Yet we convert data from field effect microscopes to colored images and animations as if they were macroscopic objects, compounded by the fact that the act of reading the electric fields perturbs them. We are at the very beginning of creating the new systems of representation for these scientific terrains.

As explained by Leonardo Section editor Kathryn D. de Ridder-Vignone [6]: "Nanotechnology art exhibitions provide more than a portal through which to enter the future world of nanotechnology. They also represent the state of nanotechnology in society today. This paper compares three exhibition forums that serve as representations of three of the most common genres of nanotechnology art (nano-art). These exhibition forums and their creators demonstrate distinct perspectives about what counts as engagement and how best to achieve it; they all attempt to persuade their publics that art can serve as a conduit for the creation of alternative nanofutures." So the target is not only the public but also scientific peers and the political sphere. Physicist and string theorist Lisa Randall [7] who has written a libretto for an opera "Hypermusic: A Projective Opera in Seven Planes" explicitly states that her intended public includes her scientific peers who have difficulty understand conceptually her scientific work.

As explained by Michael Punt, the arts and crafts played a crucial role in nineteenth century science in bringing scientific discoveries not only to the general public but also to scientific peers. The scientific 'performances' at the Royal Institution familiarized scientists and the lay public with the new discoveries, and these performances played a key role in the 'rhetoric' of scientific plausibility. But demonstrating magnetism is a far easier proposition than demonstrating genetic mutation in a Christmas performance.

One problem today of course, especially in the area of big science, is one cannot put in a public performance an orbiting X-ray telescope: the earth's atmosphere blocks all x rays reaching the earth. The CERN accelerator, MRI imagers or Field Effect Microscopes are difficult to transport into public settings. The emerging 'artists in residence' programs in scientific institutions are one way to overcome these difficulties, and the emergence of 'open data' observatories and the development of the citizen science movement is another.

5) Concluding Notes

The scientific enterprise since the Second World War has had a societal contract is anomalous in the history of science over the past four hundred years. The high technology industries that grew out of discoveries in fundamental science were a demonstration of the social utility of science that embedded science at the highest level of government. The military systems that depended on physics gave it a privileged seat in government. Today while bemoaning the lack of students in STEM programs, governments faced with budget realities are de-emphasising budgets for science and technology (the Spanish government has announced draconian cut backs and in the US funding is flat).

Perhaps scientists again find themselves, as in the eighteenth and nineteenth century where is Michael Punt's words, "Science was not self-evidently a pathway to truth about the world around and within us and each of these practices had to be convincing about its claims (most of which we now regard as partial and provisional—if not completely wrong). From this dispersed set of practices that we now understand as the beginning of science there an orthodoxy of claims which were disseminated through a cascade of demonstrations, first to the homes of aristocrats and middles classes, and then to the masses in public displays and museums. It is now widely accepted that the tactics used in this struggle for the public acceptance of science has impacted on experimental practice, what science enquired into, how it was done, and what was prioritised."

Is today's art-science movement then part of a number of developments that are part of a new theatricalisation of science, which responds to the insecurity of the science establishment in the current economic and political climate?

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On Sentience

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Among questions posed in *LIRIQ*, *Leonardo* and other forums of late, the receding scope of historical research and the role of the sublime in ArtScience integration have received emphasis. A number of time-based media productions appearing in recent months challenge concepts of history, temporality and beauty in ways that may enlarge this field of inquiry to include approaches to time and memory as reflections of cultural consciousness and value (moral, social and aesthetic), broadly conceived as ideas associated with structural and post-structural worldviews, human endeavor, and the philosophical implications of scientific and artistic research (cf. Anastasios Brenner, *Raison scientifique et valeurs humaines*, 2012; Julian Voss-Andreae, *Leonardo* 44.1.11; Chris Welsby, *Leonardo* 44.2.11).

A Schema of Human Mental History [1]

Hiroshi Sugimoto: Memories of Origin, a documentary produced by the Japanese television station WOWOW and nominated for an international Emmy award (see Review) considers time and memory through a decidedly Eastern optic. Filmed in Japanese with English subtitles, the program presents a survey of Sugimoto's work and conversations with the artist that include his thoughts about ancient and contemporary art. From his studio in New York he demonstrates some of the processes he employs in the creation of his art while other segments show him at work on installations in Japan and foreign countries. Sugimoto's photography spans over thirty years with many of his photographic series worked continuously over time. These include "Dioramas," "Wax Museums" (both since 1976), "Theaters" (since 1978), "Seascapes" (since 1980), "Architecture" (since 1997), "Pine Trees" (since 2001), "Conceptual Forms" (since 2004), "Photogenic Drawing" (since 2008) and "Lightning Fields" (since 2008). In these and other highly conceptual works of sculpture, installation, performance, writing and architecture, Sugimoto traces the emergence of thought "over hundreds of thousands of years" to primal origins whose memory, like the contours of the architecture he has photographed over time, grows increasingly indistinct. An awareness of these origins and a desire to merge with time and the universe in a manner that spans human consciousness from prehistory to infinity inspires his most breathtaking imagery. At the same time, his artwork addresses mental processes that include the objectification of reality, self-reflexivity and the subject-object dichotomy that stand at the crux of a positivist-materialistic worldview, which has informed the history of Western philosophy and epistemology since its inception. While Cartesian dualism distinguishes between mind and matter, subject (observer) and object (observed), Eastern consciousness sees reality as inclusive and holistic. According to this worldview, oppositional forces transmute into each other. Matter and spirit for example are not merely separate, complementary units, but co-dependent, interconnected and reciprocal entities, with each part integrally manifest in the totality of the whole.

Japanese philosophy is predisposed to phenomenalism, the view that external phenomena may be apprehended experientially through sensory stimuli as a precondition for knowledge. This approach to reality emphasizes an extension of direct experience beyond the perceiver him/herself into the phenomenal world as a primordial sea of being in which subject and object are not yet separated. Described as "Pure Experience" by Nishida Kitaro in *An Inquiry into the Good* (1911), the subject-object dichotomy posited in Western philosophy that has come to be identified with objective science was reconciled in Nishida's philosophy through a quest for coherence or "unity of thought." This theory attempted to compensate for the erosion of integrative beliefs based in Japanese tradition and religion wrought by Western rationalism. It is an approach that views True Reality as a mental state containing oppositions, a unity of intelligence and emotion in which both subject and object are submerged rather than differentiated. Nishida and his successors proposed a "way" or "path" of continuity situated "between" the more intuitive Eastern thought processes and Western logocentrism, a creative synthesis in which the intellect is augmented by intuitive truths derived from perceptions of the natural world rooted in Shinto and traditional values. In the aftermath of World War II, Japan's fate reflected that of other nations whereby it confronted loss, existential nihilism, spiritual decay and emotional emptiness. For this reason, on some levels the extreme degree of contradiction encountered in modern consciousness could be said to have been philosophically anticipated in Japan through mental and linguistic structures

comprised of superimposed signs, structural and spatial complexity, and difference, the hallmarks of postmodern sensibility. Evidenced linguistically through graphic characters configured para-tactically rather than sequentially, antithetical concepts such as essentialism and contingency are expressed in spatial relationships rather than in consecutive, temporal terms.

For Sugimoto, history is both deep and dynamic, a process of continuous engagement in which thought is consistently reworked and subjected to scientific verification. Data is comprised of recorded and unrecorded elements that establish frames in which the ancient and the modern, Eastern and Western consciousness may be joined. Once considered opposites "like oil and water" he has written, his view of contemporary art and ancient art has melded "ineffably together into one, more like water and air," the crystalline atmosphere of his iconic "Seascapes." In these works distinctions between earth and sky, nature and culture, life and death, past and present, evaporate into an ethos born of beauty. Sugimoto's unifying vision of the chaos of the world is something he likens to a "scooping up shimmering particles so as to fashion decoding devices that afford us a look around in the gloom." [2]

Many of his artworks convey ephemeral effects of light and shade through techniques designed to render times of day, duration of exposure (i.e. leaving the shutter open), lighting and framing so as to allude to moments that have passed before, evocations of places and distant, archetypal memories recalled as echoes over time. Paradoxically he records such evocations photographically through a mechanism and a technology designed to arrest time in order to record perception objectively, juxtaposing subjective memory with clinical observation, sensory perception with clarity. In some works Sugimoto subverts both chronological time and the photographic process itself as in the series "Photogenic Drawings" produced from William Henry Fox Talbot's (1800-1877) earliest negatives. Talbot, who is credited with the invention of the negative-positive photographic process, experimented with photosensitized paper treated with silver nitrate whose properties changed when exposed to light. When Sugimoto learned that Talbot's unprinted negatives became available to collectors, he purchased them with the intention of "developing" and printing these historic images reputed to form part of the prehistory of photography. As these negatives were produced prior to the discovery of reliable fixing agents, they existed solely as negatives in danger of changing if exposed to light. Despite these risks, Sugimoto set about to explore the capacity of the negatives to produce positive images never seen by the public or by Talbot before. He sought to return to the origins of photography as an explorer in search of buried truths. In effect, Sugimoto aspired to further develop Talbot's experiments organically so as to bring to fruition a wholly original conception from the dust of Talbot's unformed ideas. Talbot's discoveries begat further discovery, resulting in delicate, impressionistic veils of light produced from the shadows of photographic memory. At the same time, the "Photogenic Drawings" presented homage to Talbot that calls to mind Japan's ancestral tradition of emulating great predecessors known as *honka-dori*. As though attempting to recover a memory of his birth, Sugimoto wrote about the Photogenic Drawings:

"I find myself aspiring to a wholly anachronistic art, travelling back through time to once again portray in photographs inner phenomena that painting cannot depict. Printing the precious negatives that Talbot bequeathed, I head back to the origins of photography, to the origins of painting, perhaps to the origins of consciousness, to the very earliest milestone of my being." [3]

His position affirms Nishida's construct of True Reality: "I do not observe things which I am observing in the present precisely as they are in the present," wrote Nishida, "but I observe them interpreted by the force of past experience." [4] Explaining further, he states "Even though the human heart appears in a thousand forms and ten thousand states and appears to be almost without a fixed law, when we contemplate it, it seems that both in the past and the present, throughout East and West, a tremendous unifying force is in control." [5]

The origin that Sugimoto seeks to reveal in his artworks is the essence of the creative process itself—the *ki,* a vital energy born of true relationship within and over time. It is also the force of generation and sustenance that inspires ArtScience fusion. This concept of vitality, the belief in a living "soul" or spirit that inhabits natural phenomena, is one that is embedded in Japanese animism and Shinto religion. Yet in critical parlance, the term *vitalism* in the West has proven problematic as an aesthetic theory due to widely varying associations owing to contra-

dictory theoretical epistemologies in both art and science. Sugimoto frequently invokes the term "beauty" in reference to his work, however, and we will examine shortly its relevance to the present discussion.

The Clock

http://www.youtube.com/watch?v=xp4EUryS6ac

Cut to Christian Marclay's *The Clock*, a 24-hour video montage hailed as "a masterpiece of our time" (*The Guardian,* 4.7.11). Captivating audiences since it was first exhibited at the White Cube gallery in Mason's Yard in October of 2010, its multiple re-screenings include an installation at the 2012 Lincoln Center Festival in New York where it ran continuously over three July weekends from Friday mornings through Sunday nights (with waiting times for admission reported to be a minimum of three hours). Described as a cinematic *memento mori* and looped so as to run for the semblance of eternity, the work consists of thousands of segments of edited film clips accumulated from the history of cinema. These miniscule cuts have been synchronized to local time so as to function as an exacting timepiece, one that calculates each passing hour to the minute.

Marclay confronts Sugimoto's holistic vision of time with one of fragmentation, a sprawling anti-narrative that shatters any notion of unity or psychic coherence. For here both time and consciousness are inexorably dislocated, confused, accelerated and segmented, loosed from all meaningful contextuality, authenticity or origin. *The Clock* depicts a version of reality interpreted through illusions of the cinema in which both time and continuity can be spliced into milliseconds, manipulated to deceive. Decades can be compressed to a single instant; moments can seem to endure forever.

In contrast to the humble scale of Sugimoto's "Photogenic Drawings," Marclay's wide screen extravaganza proposes a *gigantomachia* of cinematic glitz. Buttressing Michael Punt's recent observation that the discipline of history has become increasingly restricted to the recent past (LIRIQ 2.01), *The Clock*, indicative of numerous contemporary artworks, limits its field of reference to one of the most recent stages of human history, the era of moving pictures, the entertainment industry and media saturation. Lacking any semblance of reality or chronological breadth, it discards all but the contemporary in its transitory fascination with glamour, celebrity and fictive hyper-reality. Confined to the realm of fantasy, it concocts a pseudo-history of time that is as brief and inconsequential as it seems interminable.

The work is a pastiche of edits and remixed sound bytes, compiled from the gloss of Hollywood classics, collaged into illogical, frequently absurd conjunctions, banal but interesting, trivial but riveting. These are appropriations from which distant memory and nature have been purged, a bracketing of contemporaneity also seen in the South African artist William Kentridge's *The Refusal of Time* exhibited in dOCUMENTA 13 in Kassel, Germany this year. Approaches to the past vary widely throughout the world and themes of time, including its disjunctures, are appearing in art in increasing numbers. In Singapore, Entang Wiharso's *Temple of Hope: Forest of Eyes* (2010-11) incorporates deep-seated cultural traditions and ritualistic elements into modern technological culture; Uriel Orlow's *Time is a Place,* one of the Swiss pavilions of the 2011 Venice Biennale, examined overlooked sites of history and their larger historical connections; the exhibition *Vérité exposée* held at the Ernst Museum in Budapest in 2009 explored the theme of memory and historical memory as a process subject to perceptual and contextual distortion; *Artspectrum 2012* held in Seoul, Korea at the Leeum, Samsung Museum of Art showcased work that revisited the distant past through assorted technological media; and *The Tanks* a video and performance installation by Sung Hwan Kim of South Korea currently on view at the Tate Modern (18 July-28 Oct, 2012) collages memories of his homes in Seoul, Amsterdam and New York.

Marclay's deeper vision of human destiny however lies concealed beneath its artifice. Not for naught can it be compared to the haunting death mask of actors who have long since expired. Conceived as a play of post-structural mirrors, its intent is far removed from Sugimoto's careful process of collection, preservation and regeneration. Rather than engage in historiographic integration and synthesis, Marclay aligns himself with temporal rupture and abandonment. To account for this position, we should examine briefly some of the shifts in aesthetic theory that have contributed to contemporary art's plural concepts of art and aesthetics. Art, according to Benedetto Croce (1866-1952) may be understood as an *expression* of the consciousness of the artist and of the human spirit in its moral and aesthetic dimension. The artwork, he maintained, externalizes an intuition or *feeling* inspired

by precognitive insight. [6] This canonic ideal, elaborated in Immanuel Kant's (1724-1804) *Critique of Judgment* (1790), defined the artwork as purposive, cognitive and responsive to universal human feelings of pleasure and pain (qualities he identified with beauty and the sublime). By the turn of the 20th century this position would be challenged by competing ideas of art based on theories of innate spontaneity and increased subjectivity, as well as on the exercise of artistic craft as a generative process (the Bergsonian *élan vital*). These challenges prompted aesthetic and stylistic expression to diverge, with form increasingly privileged over content, leaving cognizance and sentience to be contested. Nietzschean existential theories that held the function of art to be an affirmation of being also encouraged the demotion of ideals of beauty and certain qualities of sentience.

In 1917 at the close of World War I, Marcel Duchamp's iconoclastic *Fountain* attacked the concept of beauty bound to feeling in art straight on, in effect challenging art's aesthetic foundations by proposing a new paradigm of the artwork, the purely conceptual construct that an artwork may be read as a philosophical proposition if it concretizes an argument of meaning. It further proclaimed the validity of an anti-aesthetic position. By so delineating the opposition of cognizance and sentience in art, logic and beauty, as a subject-object dichotomy, he exacerbated one of the fundamental distinctions between science and art, thinking versus feeling, the modern Minerva-Venus archetype. Viewed as an irreconcilable opposition of objective-subjective consciousness in the tradition of the classical Apollonian-Dionysian construct, he emblematized the impossibility of fertile union in the technological era in *The Great Glass*. While numerous artworks have since introduced alternative readings of art, including functionalist, agonist and interventionist strategies, Duchamp continues to spawn polarizing tendencies towards aestheticism and anti-aestheticism in art. Indeed, though both Sugimoto and Marclay look to Marcel Duchamp as a progenitor, they do so for different reasons. Sugimoto confronts *The Great Glass* as a violence to be rectified; Marclay perpetrates the crime.

"What time is it?" *The Clock*'s characters ask each other ceaselessly, rhetorically, existentially as bells toll in the distance and ticking clocks register the urgency of time passing, time running out, lost time. It is perhaps Nietzsche's bitter Noontide "...when man stands at the middle of his course between animal and Superman and celebrates his journey to evening…" (*Thus Spake Zarahustra*.xxii), the hour in which the bird of Wisdom takes flight at dusk (Hegel). "History is necessary," wrote Marsilio Ficino, "not only to make life agreeable, but also to endow it with moral significance." Deprived of remembrance in Marclay, we may be unable to adequately contemplate such significance, to comprehend or transcend either the present or the past.

Marclay's stylized visuality and command of sonic rhythms, however, evidence an astounding degree of technical mastery and exacting craftsmanship. Involving complex schemes of digital mixing, algorithms, protocols, and processing, his method relies heavily on accurate measurement and instrumentation, an ironic reflection of his self-identification with a heritage of Swiss precision timepieces. At the same time his experimentation with turntables, microphones, styluses and other equipment creates astonishing original effects of abrupt discontinuity, disequilibrium and seamless visual transition. Some who have viewed the work over extended periods report becoming transfixed and entranced. These contrasts point up Marclay's keenness and dexterity, his technical bravura and wit. Paradoxically the frenetic pace and nervous energy of the jump cuts stand in stark opposition to the lethargy and leisured passivity of audiences sprawled on sofas as in a private living room. Marclay captivates and fascinates his audience with a conjurer's technical virtuosity and speed, distracting audiences with improbable slights of hand.

Sentience and Process

The pursuit of knowledge that inspires science and art can be understood, according to the art historian Erwin Panofsky (1892-1968) as that combinatory "movement which has rightly been called the discovery...or rediscovery of both the world and man." He distinguished between *scientia* and *eruditio*, that is, between knowledge and learning, whereby *scientia* denotes a more practical mental possession whose aim would be something like mastery; while *eruditio* denotes more of a process pursued among humanists whose aim is wisdom. [7] In similar terms, the contemporary artist Robert Irwin recounted his cross-disciplinary interaction with physicists as part of the Art and Technology program at the Los Angeles County Museum of Art from 1968-1970. Irwin was beginning to think about the

use of energy, light and sound in his work and was interested in ideas of space, energy and matter from a scientific perspective. The opportunity led him to the anechoic chamber at Lockheed's Rye Canyon research center that was to figure prominently in his understanding of perception and sensory deprivation. It also brought him to Cal Tech's Nobel laureate Dr. Richard Feynman at Pasadena's Jet Propulsion Laboratory where scientists were tracking the *Mariner* and preparing the *Voyager* spacecrafts. Together with fellow artist James Turrell, each man, according to Irwin, was essentially interested in man's relationship to his environment and his perception of that environment. "We decided that all we wanted to find out was how two radically separate disciplines could interact, what could be the grounds." [8] Irwin concluded that both the artist and the scientist engage in a similar process. It starts with a basic idea or hypothesis that is continually tested and reworked until the desired result is obtained. The difference, for Irwin, was that the scientist's experimentation followed a precise sequence of logical progression while the artist uses logic in order to interface with one's intuition or feelings. Assimilating subjective and objective measures, the scientist adheres to external, objective criteria, while the artist inclines towards intuition. Such intuition, according to the art historian Meyer Schapiro, need not reflect qualities of perfection, coherence or unity of form, yet it reveals a reflective correspondence and engagement with complex fields such as to convey some meaningful relationship and connection. Furthermore, the process of exploration and discovery that leads both the artist and the scientist to ultimately know and to wonder encourages each to further speculate. New findings in the area of cognitive science, especially those that involve processes of analogy formation across complex trans-disciplinary systems include studies that integrate the pursuit of beauty with cognition. Douglas Hofstadter and Emmanuel Sander's new book *Surfaces and Essences* (2012) promises to elucidate more fully the fluidity of ArtScience aesthetic consciousness.

But what does beauty mean, philosophers ask since time immemorial? As Roger Malina has pointed out in his essay "A Role for the Sublime in ArtScience" (LIRIQ 2.01), semantics, contradictory definitions and translation inhibit our ability to address many areas of confluence adequately. The term *vitalism,* for example, has radically different connotations in art and science ranging from esotericism to developmental biology. The subject-object dualism and objective logic that informs the pursuit of knowledge in science also complicates relationships between such areas as empiricism, idealism, phenomenalism, essentialism and indeterminacy in aesthetics. How we perceive reality and the values that we assign to its constituent parts remain contested. In the West the categories of Beauty and the Sublime (from the Latin *sublimus*, a quality of greatness) have been repeatedly subjected to epistemological speculation.

Originating with John Locke's (1632-1704) essay "Of Association of Ideas," from *An Essay Concerning Human Understanding* (1690) subjectivism, based in sensation, was deemed to be the most fundamental unit of human knowledge. In opposition to Descartes' rationalism, Locke placed an emphasis on sensory data that in turn stimulates the association, connection and correspondence of ideas. Francis Hutcheson (1694-1716), who influenced Locke, in "An Inquiry into the Original of our Ideas of Beauty and Virtue" (1725) noted features such as regularity, order and harmony to be attributes of beauty in mathematical theorums and geometric shapes that he considered conducive to a parallel moral sense of equilibrium, or judgment, that derived from independent rational deliberation. In Anthony Ashley Cooper, the Third Earl of Shaftesbury's (1671-1713) *Characteristics of Men, Manners, Opinions, Times* of 1737, the creative power of nature, mirrored in the creative power of the human mind, constituted a *vital principle* manifest in nature and sublimity that he identified with beauty. He found moral and aesthetic pleasure to arise from the same phenomenal source and equated boundless beauty with the Good, which in turn imparted wisdom. The Irish philosopher and statesman Edmund Burke (1729-1797), who has been most closely identified with the sublime based on his *A Philosophical Inquiry into the Origins of our Ideas of the Sublime and the Beautiful* (1757), likened the sublime to that which is vast, rugged and a source of terror. He considered the sublime born of sensations of awe, magnificence and infinity, qualities inspired by divinity. Immanuel Kant's idea of the sublime was of three kinds: the noble, the splendid and the terrifying, also emphasizing the "boundlessness" of nature, a quality similarly applicable to reason. Conceptually, the Kantian Sublime is best suited to the scientific, aesthetic and intellectual imagination of ArtScience.

During the 20th century, the sublime in art underwent significant

theoretical revision when it was reintroduced by the artist Barnett Newman (1905-1970) who wrote the essay "The Sublime is Now" in 1948. Newmann connected the idea of sublimity with abstract modernist formalism (consistent with the positions of the art critic Clement Greenberg, 1909-1994) whereby abstract painting on a vast and tremendous scale might induce a sense of infinity and ecstasy on the part of the viewer tantamount to his/her response to an act of nature. Largely identified with the protean aspirations of the New York School and their rejection of classical tenets of Absolute Beauty and canonical perfection in art, Burke's sublimity came to be reinterpreted as an empowering, existential mandate for self-expression and self-affirmation, hardly the call to reasoned judgment and moral equilibrium proposed by its forbears. Seeking distance from Eurocentric hegemony, rebellious modernists embraced the sublime as the emotive power of unrepressed consciousness and aesthetic transcendence.

Thus the attribution of the sublime to ArtScience, while describing sensations of "wonder," "infinity" and "awe" inspired phenomenally by nature, also prompts associations with immanence, the supernatural, grandeur, terror, egocentrism and even mysticism that may confound understanding. Many other terms such as imagination, originality, energy, discovery and sensibility lend themselves similarly to ArtScience usage, terms that should be also be qualified within ArtScience's emerging vocabulary. A recent article on the Swiss architectural historian Siegfried Giedion (1888-1968) who theorized about the thinking-feeling dichotomy in modern art, proposed a Calder mobile as a model for the subtle atmospheric changes in meaning that continuously rebalance aesthetic qualifiers. [9]

An emphasis on shared *processes* of investigation such as methods utilized in generating architectural models from John Cage's musical *Variations* (*Leonardo* 45.1.12) or the sculpture of Julian Voss-Andreae that visualizes quantum physics (*Leonardo* 44.1.11) enhances appreciation of ArtScience praxis. The symbiotic process of inquiry involves knowledge, perceptual experience and feelings transmitted over time through collective memory as a repository of culture. It is through memory, the matrix of history, that value is perpetually recalibrated. Memory also forges bonds between the individual and the community through which values may be held in common. [10] Although memory is culturally conditioned, the underlying principles of prior experience distributed among many brains expand our understanding of human purpose in relation to complex environments.

Sentience, a vital component of intellect, is a term that may hold promise in uniting distinctions between mind and body, the intellect and feeling. It is, as beauty, the point at which mind and body become indivisible. It is also a term useful as "a path between" in characterizing a state of mind and modes of perception that bridge Eastern and Western patterns of thought. *Sentience* is applicable to the critical thinking that informs ArtScience processes in general, whether as research into spiral galaxies, studies of artificial jellyfish created from human heart cells, tests of the electrical activity of ion channel neurology, or Agnes Denes' isometric drawings. *Sentience* may best reflect the spirit of human aspiration that animates all human endeavor. Not limited to thought, it incorporates feeling and judgment in the exercise of intelligence and in art it forms a counterpart to desire. There may be no finer recent example of the unifying power of sentience than Janet Cardiff and George Bures Miller's transcendent *Forty Part Motet*, a reworking of "Spem in Alium" by Thomas Tallis of 1573:

http://www.cardiffmiller.com/artworks/inst/motet_video.html

http://www.nytimes.com/2010/11/14/arts/design/14sugimoto.html?pagewanted=all

Perhaps ArtScience could be symbolized by an image of Faraday's Cage, the title of Sugimoto's installation in a decommissioned power station on Cockatoo Island in Sydney Harbour for the 2010 Sydney Biennale. A Faraday Cage is an enclosure formed of conducting material that redistributes electrical charges within the cage in a manner that acts to shield the interior from electromagnetic radiation. Its effectiveness depends on the geometry of the conductive material. As an icon of shared ArtScience process, it illustrates the function of logic as a protective grid utilized in certain computer testing procedures in which an environment

free of electromagnetic interference can be created. Known as a *screen room* that on some levels may be compared to Marclay's viewing chambers, space is enclosed by one or more grounded layers of fine metal mesh or perforated sheet metal so as to block extraneous charges that allow high voltage electricity to be generated. Within the chamber, a magnetic curve conceived as a line of force may be illuminated so as to magnetize a ray of light.

Notes

[1] Hiroshi Sugimoto, "Surface of the Third Order," Oct 28-Dec 23, 2011, Pace Gallery, New York, NY.

[2] Hiroshi Sugimoto *History of History* (*L'histoire de l'histoire*), Tokyo: Japan: Rikuyosha, 2004, p. 11.

[3] *Ibid*., p. 37.

[4] Nishida, Kitaro, *An Inquiry into the Good*, Trans. By V. H. Viglielmo, Ministry of Education, Japan, 1960, p. 32.

[5] *Ibid*., p. 168.

[6] *Philosophies of Art and Beauty: Selected Readings in Aesthetics from Plato to Heidegger*, Ed. by Albert Hofstadter and Richard Kuhns, Chicago: The University of Chicago Press, 1976, pp. 556ff.

[7] Erwin Panofsky, *Meaning in the Visual Arts*, Chicago: University of Chicago Press, (Phoenix Edition), 1982, pp. 24-25.

[8] Lawrence Weschler, *Seeing is Forgetting the Name of the Thing One Sees*, Berkeley: University of California Press, 2008, pp. 130-131.

[9] Mona Mahall and Asti Serbest, "Wolf and Vampire: The Border Between Technology and Culture," *E-flux* journal #23, March 2011.

[10] Robert Irwin Papers, Getty Research Institute, Personal Writings, 15.4.

Six Stories from the End of Representation. Images in Painting, Photography, Astronomy, Microscopy, Particle Physics, and Quantum Mechanics, 1980-2000

by James Elkins

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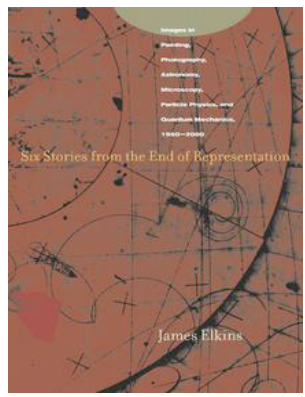

James Elkins's last book is an exceptional achievement, of which I don't know any present equivalent. These Six Stories are an attempt to establish a new dialogue between humanists and scientists (the 'alpha' and 'beta' sciences, whose almost unbridgeable divide is well-known since the "two cultures debate" launched by C.P. Snow in 1959), more specifically in the field of the image, both of its production and of its interpretation. Yet, Elkins's book does not simply mix artistic and scientific images, nor does he try to demonstrate that artists are actually scientists and that real science cannot be separated from an artistic impulse, as it is often argued in recent books on the subject (on the contrary, Elkins emphasizes the inevitable and necessary differences between art and science). What the author proposes -and manages to do- is a much more revolutionary gesture.

On the one hand, Elkins does not target one specific audience -either an artistic or a scientific one, as happens in almost all publications interested in discussing the two cultures debate. Instead he attempts to write a text which can be read by both audiences without any distinction and thus to defend new insights into art that can be of interest to humanists as well as to scientists and to comment on scientific ways of image-making in a way that proves helpful to both categories of readers. In order to do so, the author, whose background is mainly in art theory and the practice of painting, has taken classes on quantum mechanics and particle physics as preparation. On the other hand, Elkins has also followed a certain number of methodological rules to make sure that his ambitious goal does not become unrealistic or slippery. These rules can be enumerated as follows: first, the selection of a perspective that might have a chance to present common features (in this case, the question of the limits of representation: how does the problem of what lies beyond the visual representation of the world outside is tackled in very different artistic and scientific media and approaches); second, the decision to speak the language of each discipline, and to avoid as much as possible metaphorical

language (such a decision implies of course the priority given to description, at the expense of interpretation); third, the refusal to unify the field of image making and reading (hence the radical juxtaposition of the six chapters, which are not part of one grand story).

If these are grosso modo the tools which enable Elkins to research the limits of representation, it would be a pity not to stress the strong relationships between the apparently titanic effort of *Six Stories* and the rest of his work. Given the exceptionally broad scope and nature of Elkins's interests, it is of course not possible to disclose all the links between his previous publications and this new book, which is as much a continuation as a new start, but at least three threads can be underlined. In *The Object Looks Back. On the Nature of Seeing* (1997), he had already developed an in-depth reflection, via the dialectical folding of sight and blindness, on the limits of representation. A book like *The Domain of Images* (1999) had started to explore the blurring of the boundaries between pictures, writing, and notation. And *Visual Studies. A Skeptical Introduction* (2003) had stressed the necessity to foreground creative forms of writing on the image.

Six Stories has a strong compositional logic. The six chapters are coupled by pairs, each of them providing two related insights into a specific question: first Elkins discusses the limits of representation in an old and a new artistic medium (painting and photography); then he analyzes similar issues in the case of scientific images confronted with the representation of the extremely large (astronomy) and the tremendously small (microscopy); finally, he raises questions on types of representation that exceed the visible, with questions of the invisible (particle physics) and the unimaginable (quantum mechanics). Even if each chapter constitutes an independent whole and can be read as an autonomous essay, the whole book is exceptionally homogeneous, not just thanks to the particular style of Elkins, who succeeds in expressing the love he feels for his objects, but thanks to three other methodological constraints: a) the overall priority given to the images (the whole book is wrapped around images, which are also beautifully reproduced, and the author always takes the reading of these images as the kernel of every argumentation); b) the attempt to link each group of visual objects with a specific intellectual problem (and one can only express one's gratitude to the clever way in which Elkins manages to extract new problems from new and old images); c) a specific way of reading, which has everything to do with Elkins becoming a guide in the visual labyrinth he is entering with his reader (this is certainly the most personal dimension of the book, and perhaps also its most fascinating one, since Elkins, who avoids easy interpretations, does not refuse to judge: he discusses the distinction between good and bad pictures, between interesting and uninteresting interpretations, between dead ends and real challenges, and so on).

On the Litany of Illnesses Associated with Vincent van Gogh

by Wilfred Niels Arnold

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The art of Vincent van Gogh captivates a host of viewers across a spectrum of backgrounds. His spontaneous choice of subjects, use of dazzling hue intensities, and management of color juxtapositions elicit a depth of academic admiration and a degree of public acclaim which are unmatched for few other artists. In 1990, the largest exhibition of his work occurred in Amsterdam (paintings) and Otterlo (drawings) in celebration of the centenary of Vincent's passing. Patrons judged these displays to be grand. Popular media echoed the appreciation but couldn't stop talking about the "mad" artist. The mercantile sector wept about never seeing the like again because of mounting insurance costs but, as it turns out, international exhibitions at least large enough to be called van Gogh blockbusters now appear two or three times a year. They provide first-class entertainment as well as chauvinistic rivalries among art museums. All have been profitable.

There is nothing more interesting for the human species to contemplate than the lives of men and women who have shaken the world a little. Intrigued by the van Gogh phenomenon, patrons do their best to comprehend what was "wrong" with Vincent. Their curiosity is mostly driven by the ear-cutting incident when he was thirty-five, and his suicide two years later. † Meanwhile, the popular media carelessly embrace, and doggedly repeat, fanciful stories which fuel the titillation. On the other hand the art industry handles van Gogh's illness as if too much enquiry might spoil the market. Neither approach is conducive to truly understanding the man and the art.

People and paintings

Vincent van Gogh shot himself in the abdomen on Sun-

day afternoon, July 27, 1890; staggered back to his rented room in Auvers-sur-Oise; and died early Tuesday morning. He was buried next day in a hastily arranged funeral. His brother Theo returned to Paris and in the weeks that followed took stock of all the paintings and drawings by Vincent; the canvases by other artists, which they had collected together; and a pile of letters. Vincent did not leave a written will and testament but there was no doubt that the artwork belonged to Theo. Vincent had often stated that his regular stipend from Theo would be offset by production of pictures — even the note that was found at the end, (letter 652) [1] repeats that sentiment.

Theo had already given several canvases to Dr. Gachet and other mourners at the funeral, as remembrances. He then took the time to clear the inheritance with his mother, brother Cor, and three sisters. Surprisingly, the rest of the family and their close friends were simply not enthusiastic about having more than one or two items of Vincent's work. Hundreds of pictures remained "under the bed."

Theo's immediate mission was to promote Vincent's art. He also contemplated publishing some of the letters. Illness thwarted both efforts. With his death the following year, the responsibility for both collections fell upon his widow, Johanna van Gogh-Bonger. She set about organizing the letters and eventually completed the translation of 526 of them into English [2]. The remaining letters were handled by the only child of Theo and Johanna, who was later differentiated from the artist as "Vincent the Engineer" ‡ [3]. Notwithstanding the magnitude of the task, mother and son admitted [4] an *intentional delay* in publishing van Gogh's letters, because Johanna felt that "it would have been unfair to the dead artist to arouse interest in the person before the art." In the event, her decision undoubtedly influenced the tenor of the artist's future acclaim. The eventual release of Vincent's letters with their appealing stream-of-consciousness style evoked praise for artistic analysis and insight, sympathy for his personal procession of struggles, and a mixture of sadness and titillation for his medical complaints.§ The new art and the exotic man contributed about equal weight and the combination eventually made Vincent van Gogh a household name.

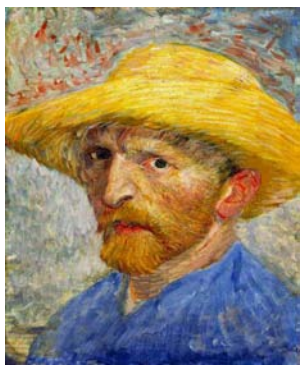
Johanna van Gogh-Bonger received very little assistance with the art collection. The color merchant Père Tanguy continued to provide a tiny Mecca for van Gogh contemplation in Montmartre, but he was not a vigorous promoter and in any case died in 1894. The liquidation sale after Tanguy's death realized only 130 francs for two van Gogh paintings [5]. Other Parisian dealers remained reluctant to embrace unfashionable artists. Johanna's brother, Andries Bonger, even advised her to get rid of her van Gogh collection forthwith. Andries subsequently amassed a notable collection featuring Odilon Redon and Émile Bernard and, perhaps through no fault of his own, seven Van Gogh's. This "Bonger Collection" was acquired by the Dutch State in 1996 and given to the Van Gogh Museum on long-term loan. Meanwhile, Johanna van Gogh-Bonger has yet to be commemorated at that museum.

As late as 1905, the Rijks [State] Museum at Amsterdam declined the loan of any van Gogh canvas. Johanna sold some of Vincent's paintings partly out of financial necessity, but also with a wholesome desire to distribute his work beyond France and Holland. Otherwise, the opportunity to see his art would have been less robust and thus Johanna should also be credited with initiating the international recognition that shows no sign of waning. After her death in 1925 Vincent the Engineer, who had already assumed a less generous and more nationalistic posture towards his uncle's legacy, was reluctant to place any more canvases or drawings on the open market. Eventually, driven by taxation fears for his children, he worked out an agreement with the Dutch government involving a substantial family settlement, a new state museum for the donated works, and family influence in perpetuity within the newly created Van Gogh Foundation. By far the largest collections of van Gogh's art are held by the Rijksmuseum Vincent van Gogh in Amsterdam and the Rijksmuseum Kröller-Müller in Otterlo, also in Holland. Together they are a remarkable concentration of van Gogh's paintings, drawings, original letters, and memorabilia — plus a *formidable influence on the reception of scholarly studies*. We note that the mission statements of the two museums and the foundation do not mention research into van Gogh's underlying illness.

A channeled view of Vincent's illness

Vincent the Engineer wrote that the letters were the only genuine source of details on Vincent's life. Even though the Engineer's own analysis is punctuated with euphemisms and myths it still enjoys comfortable respect from many in the organized art world. During my 1990 conversation with Dr. Albert Lubin, professor of psychiatry and a van Gogh scholar [6], he made a special

point about Vincent the Engineer being very much the "amateur psychoanalyst" to the *exclusion of other approaches*. In my opinion, the Engineer also endorsed some of the more mystical tales surrounding his uncle. Also, Dr. Humberto Nagera [7], while a student in London with Anna Freud, had weekly contact with the Engineer when Nagera taught a course in The Netherlands. He confirmed this psychological disposition and also spoke to me about the Engineer being at odds with Paul-Louis Gachet, the son of Dr. Paul-Ferdinand Gachet. The father was Vincent's last attending physician. The son was a seventeen-year-old eyewitness, and later a chronicler, of Vincent's final months in Auvers-sur-Oise, whereas the Engineer had to rely on information at best second-hand. Even today, the experiences related by the Gachets seem to have a lower level of reception in Holland compared with the rest of the world.



The Van Gogh Museum is called upon by the popular media to act as "final authority" with all things van Gogh — not only questions of attribution but anything about Vincent's life. Their responses are unilateral, conservative, and short on analysis. After many years of favoring "some form of mental illness" for Vincent, they currently opt for a "form of epilepsy *although the symptoms cannot be blamed purely on epilepsy*." I find their *qualifier* to be more salient than their diagnosis. Alternative hypotheses are not even discussed. Their opinion is *holus-bolus* acceptance of records from Vincent's attending physicians for 1888-1890, in Arles and St. Rémy. The museum is thus part of a small but influential group that is keen to applaud the diagnostic skills of Vincent's attending physicians. ''The old guys had it right after all'' is their banner. In their sea of disinterest for other published data and analyses this position affords them an island of safe haven blessed with nostalgia. Accordingly, some have stated that Dr. Rey (at Arles), who had yet to finish his medical degree, was brilliant and insightful. Their circular argument goes as follows: - Rey opined ''epilepsy'' without evidence of a full-fledged case — some modern commentators believe temporal lobe epilepsy (described many years later) is an attractive possibility — therefore they say Rey was ahead of his time. With respect to Dr. Peyron it is well to remember that at St. Rémy he was in a "retirement" position, with his past experience primarily in ophthalmology, a not particularly useful specialty for Vincent's case. Tralbaut [8] felt that the physicians of the south were overly influenced by the police report in Arles which was based on the patient's own statement about some family member with epilepsy on his mother's side. If so, the circle was completed when Vincent wrote, ''as far as I can make out, the doctor here [Peyron] is inclined to consider what I have had as some sort of epileptic attack'' (letter 591). I believe that the Van Gogh Museum has always favored an "acceptable" diagnosis by their definition—something without danger of impeding Vincent's tremendous commercial appeal. Apparently they do not entertain other analyses, which address the time-course, signs and symptoms beyond epilepsy. Other art institutions apparently believe that *a little bit of madness* provides the best climate and thus they fall into step with the popular media. On the contrary I see nothing that supports a case for clinical "madness" in Vincent.

All the signs and symptoms

In the last hundred years several citizens have offered their own ideas. Most were opinions rather than developed hypotheses. For example, one vocal commentator suggested manic-depressive psychosis (bipolar disorder) for Vincent, with little data apart from a claim for a high incidence of that syndrome in creative people generally (which in itself is a dubious hypothesis). In this particular story the perpetrator also volunteered being a manic depressive, supposedly to strengthen this opinion on Vincent by invoking the adage "to be one, is to know one." Another enthusiast was taken by the possibility of van Gogh's "high yellow palette" being caused by over dosage in digitalis. This medical insult will cause a xanthopsia but there is no evidence that van Gogh ever took the drug. The only connection, a sprig of foxglove (source of digitalis infusion) in one of the portraits of Dr. Gachet, is more reasonably interpreted as a sign of the 19th century physician (as with a stethoscope today) rather than a drug for the painter. Furthermore, van Gogh's "high yellow" paintings started in Paris, not during the last two months in Auvers. It got worse when newspaper stories suggested digitalis

toxicity as a candidate for van Gogh's *underlying illness*.

It should be self-evident that any scientific hypothesis on van Gogh's underlying illness should address all of the information — this has rarely been the case, starting with the psychoanalytical bias of the Engineer. And it is a mistake to select only those symptoms that fit a pet hypothesis — unfortunately, this has been the rule. Furthermore, let's hope that the popular media may soon learn to distinguish among an underlying disease, a sign or symptom, and an environmental insult; instead of throwing them all down in the same sentence with the inevitable modifier "we shall never know which one." Little wonder that the average patron of the arts can make neither heads nor tails of such disparate items — all presented without a hint of relative merit.

For example, on the Internet, current lists for Vincent include epilepsy, manic-depressive psychosis, sunstroke, acute intermittent porphyria (AIP), lead poisoning, Ménière's disease, syphilis, absinthe abuse, digitalis intoxication, hypergraphia, and religiosity. There are others. The unedited litany is passed on from one commentator to the next, with every opening of a show on van Gogh.

Loftus and Arnold independently read van Gogh's letters in their entirety** and extracted all medical content. The combined results were later organized under tables of particular signs and symptoms to provide a concordance by letter number [9]. Vincent's ailment was thus characterized by episodes (medical crises) of acute mental derangement and disability, which were separated by intervals of lucidity and creativity. Episodes began suddenly and precipitant factors (medical insults) were identified. *During these crises he did not paint or write letters.* And then the artist himself, as well as attending physicians, relatives, and friends were all surprised and encouraged by the rapidity of the recoveries at the end of each crisis. The time frame is of great importance and alone it dismisses a multitude of suggested causes from the past. Vincent's serious illness developed late in the third and played into his fourth decade. There were frequent gastrointestinal complaints and at least one bout of clinical constipation. Hallucinations (auditory and visual), nightmares, and aphasia were associated with the crises. Periods of incapacitating depression were severe and grave enough to provoke suicide. There was a family history of mental illness, which affected Vincent, his brother Theo, and sister Wil (three of the six siblings). The debilitating illnesses of Uncles Cent and Hein may also be linked to those of the younger family members.

Vincent's symptoms were palliated during institutionalization due to a better diet, abstinence from alcohol, and bromide therapy. [Bromides are still used in the treatment of AIP seizures, but they are ineffective for temporal lobe epilepsy.] He did not experience any permanent, functional disability that affected his painting or his writing when he returned to those activities. There were many unwitting, self-imposed, exacerbation factors, which *precipitated attacks*. These included malnutrition and fasting, environmental exposure, smoking, and ingestion of alcohol. Alcohol problems were compounded by a penchant for absinthe, a liquor that contains an additional toxic compound, thujone, and several other terpenoids. Absinthe exacerbated van Gogh's underlying illness and also induced a pica for terpenes, the other documented examples being camphor and pinene (in turpentine) [10].

The porphyria hypothesis

In 1991 Loftus and Arnold proposed that van Gogh suffered from acute intermittent porphyria (AIP) exacerbated by malnutrition, smoking, and absinthe [11]. All of the documented medical signs and symptoms in the letters can be accommodated by this working hypothesis, and the family history provides additional support [9, 11, and 12]. We also made a case for AIP in his brother Theo. Sister Wil exhibited aberrant behavior, which caused her admission and long tenure in an asylum. Surveys conducted since then indicate a disturbing incidence of previously undetected AIP in mental institutions.

AIP is an inherited metabolic disease that affects firstly the liver. Patients with the specific enzyme defect (porphobilinogen deaminase) are at risk for crises, which are initiated by diverse insults and are associated with pronounced increases in two intermediates in the biological pathway to heme (as in hemoglobin and cytochromes). These compounds in excess are neurotoxins. Crisis resolution is associated with return to normal concentrations of the offending compounds.

Differential diagnoses against other proposals mentioned earlier have been systematically addressed [9]. Because of the current popularity of epilepsy within the commercial art world, a few words from reference 9 are worth repeating.

Epilepsy

Epilepsy is defined as a sudden and recurring, transient disturbance in brain function that leads to an episodic impairment or loss of consciousness, abnormal motor phenomena, psychic or sensory disturbances, or perturbation of the autonomic nervous system. It is derived from the Greek word for *seizure.* Several diseases and conditions are complicated by seizures. For example, they appear after withdrawal from alcohol or barbiturates. Also, uremia may be tolerated for a few days and then cause a rapid onset of twitching, trembling, myoclonic jerks and generalized seizures. Other diseases with seizures include brain tumors, hyponatremia, thyrotoxicosis, acute intermittent porphyria, hypoglycemia, and intoxications with lead or arsenic salts [9]. Niedermeyer [13] emphasized that *epilepsy is not a disease* but rather an abnormal reaction of the brain due to *numerous causes*.

Frank seizures were not described for Vincent. The "three fainting fits" he mentioned (letter W11), albeit difficult to construe as seizures, may have influenced Drs. Rey and Peyron in that direction. Primary distinctions are now made among the types of seizures; for example petit mal seizures, grand mal seizures, complex partial seizures, and temporal lobe epilepsy, none of which fits the time-course for Vincent's crises. It seems that van Gogh's physicians were unduly influenced by the patient's claim of epilepsy in a relative on his mother's side.

Summary

At van Gogh exhibitions we commonly overhear viewers wondering, "what was wrong with Vincent?" This central interest in the underlying illness has complemented the artwork to make his a household name. All manner of retrospective diagnoses have been postulated, most with only a modicum of supporting data. On the other hand the "art industry" treats his illness with restraint, as if too much enquiry might spoil the market. The popular media keep repeating lists of possibilities without judging relative merit. This essay endeavors to resolve the muddle. It is also a plea to approach all working hypotheses with organized skepticism. In my opinion Vincent van Gogh was not a ''mad'' artist, but rather an exceptional man who suffered from an inherited disease. All of the data support some type of toxic psychosis and, within that category; acute intermittent porphyria is a prime candidate and worthy of more public discussion. Vincent was wonderfully creative because of intelligence, talent, and hard work. He was a genius in spite of his illness – not because of it. This reality clears the background nonsense and enhances wholesome admiration for van Gogh's creations.

References and notes

[1] Letter numbers follow *The Complete Letters of Vincent van Gogh*. 2nd ed., 1978. Boston: New York Graphic Society.]

[2] Johanna van Gogh was assisted in the English phrasing and idiom by Helen Johnson. See Johnson HA. 1934. No Madman. *The Art Digest* 8: 11.

[3] Van Gogh VW. [The Engineer] 1978. Some additional notes to the memoir of Vincent van Gogh. pp LIV–LXVII. In: *The Complete Letters of Vincent van Gogh*. 2nd ed. Boston: New York Graphic Society.

[4] See preface of *The Complete Letters of Vincent van Gogh*. 2nd ed., 1978.

[5] Rewald J. 1986. *The posthumous fate of Vincent van Gogh, 1890-1970*. pp. 244-254, in: *Studies in Post-Impressionism*. I. Gordon & F. Weitzenhoffer (eds.). New York: Harry N. Abrams Inc.

[6] Lubin AJ. 1987. *Stranger on the Earth: A Psychological Biography of Vincent van Gogh.* New York: Henry Holt & Co.

[7] Nagera H. 1979. *Vincent van Gogh: A Psychological Study.* New York: International Universities Press.

[8] Tralbaut ME. 1981. *Vincent van Gogh*. New York: The Alpine Fine Arts Collection Ltd.

[9] Arnold WN. 1992. *Vincent van Gogh: Chemicals, Crises, and Creativity.* pp. 332, Birkhäuser; Boston, Basel, Berlin.

[10] Arnold WN. 1988. *Vincent van Gogh and the thujone connection*. *JAMA* 260: 3042-3044.

[11] Loftus LS & Arnold WN. 1991. Vincent van Gogh's illness: acute intermittent porphyria? British Medical Journal 303: 1589-1591.

[12] Arnold WN. 2004. The illness of Vincent van Gogh. *Journal of the History of the Neurosciences* 13: 22-43.

[13] Niedermeyer E. 1983. *Epilepsy Guide. Diagnosis and Treatment of Epileptic Seizure Disorders*. Baltimore & Munich: Urban & Schwarzenberg.

† Arguments that both events were accidents under medical crises are given in my book (see reference 9), but ignored in the popular media.

‡ Vincent van Gogh's nephew had a first degree in agricultural engineering.

§ The average van Gogh fan has not gleaned any information *directly* from the published letters. However, derivative sources (print, radio, television, and the internet) have played a significant role, beginning in the second half of the 20th century. The accuracy has varied greatly.

** It is no small undertaking (1,809 pages for the 1978 edition) and one wonders how many commentators have read the letters. Rather, they feed each other selections from secondary and tertiary sources.

Reviewer Profile - Allan Graubard

Editor's Note: In this issue of LIRIQ we are featuring one of our long-standing and regular reviewers Allan Graubard. Allan has reviewed for us for as long as I have been editor and is one of the few reviewers who I have not met personally. It struck me reading a review of his most recent book that for many of Leonardo Reviews regular readers some of the reviewers are also simply 'names' and since we are essentially an ensemble of reviewers I thought we might use LIRIQ to put some flesh on the bones of some of our review panel. We are grateful to Allan for his ongoing support for this project and are pleased that he should be the first occupant of this corner of LIRIQ which I hope will be a regular feature.

"When I was 13 I began to write poetry while gazing at the stars and planets with a small telescope. The usual places: the moon, Saturn, Venus, Andromeda, star clusters. I used the telescope as I played piano, an improvisation. And those distant, intimate lights animate in the dark...

Wonder and surprise, emotional freedom, essential relations—between people, and animals, insects, birds, fish, matter. The human and terrestrial worlds intersect on a page, in a meeting, by chance, analogy or surprise.

The scientist begins where the poet ends and works backward to understand just what it is that compels him.

Eros and love, wonder, leaps of thought, symbolic opacity or transparency, the ethical value of knowing. Affective knowledge, linguistic magic… The clear expression of an idea with predictive value... Rational knowledge, symbolic elegance…

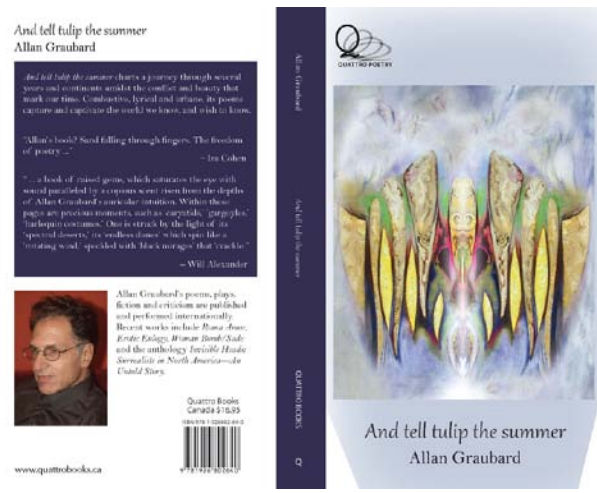
And now and then they co-exist. And the scientist begins to speak the language of the birds and the poet writes as if he were a bird."

*

Allan Graubard's poems, texts and plays appear internationally in leading and small venues. In 2011, *And Tell Tulip the Summer*, selected poems, was published (Quattro Books, Toronto) along with the two-volume set *Invisible Heads: Surrealists in North America—An Untold Story*. *Roma Amor*, a novella, was published in 2010 (Spuyten Duyvil Press, NY). *Roma Amor & Woman Bomb/Sade* was also published in translation in Albania (Prince Press, Tirana, 2008) while *Hippocampus* appeared that year (Surrealist Editions, Coimbra, Portugal); reprised in Dutch in 2011 (Brumes Blondes, Bloemendaal). Other poems are featured in *Celestial Graffiti* (edited by Ira Cohen), an anthology on surrealism in America (Monte Ávila editions, Venezuela); the Brazilian literary journal *Coyote* (edited by Rodrigo Garcia); and three catalogs, *A Voz dos Espelhos*, for major exhibitions in Portugal, in 2008 and 2009.

As playwright, Allan's *Revolting Women/Woman Bomb-Sade* led the International Solo Performance Festival, Theater Row, NYC, in 2010, with previous runs at hotINK International Theater Festival and Gershwin Hotel Theater (2008, NYC). *Folding Space/Modette* and *Erotic Eulogy*, collaborations with composer/conductor Butch Morris, played in Italy and New York (Teatro Luciano Pavarotti, Modena, Italy & Abrons Art Center, Henry Street Settlement, NYC, 2009). *For Alejandra* premiered in New York and toured to Washington, DC, Dubrovnik, Croatia, and the Sibiu International Theater Festival, Sibiu, Romania (where it was published in translation with national radio broadcast), 2003-4.

Allan writes literary and cultural criticism for *Leonardo: The International Society for Art, Science & Technology* (MIT Press), *Pacific Rim Review of Books* (Vancouver), *Brooklyn Rail*, *Western European Stages* and *Slavic and Eastern European*



Performance & Film (City University, New York).

Readings: October Gallery (London); The Living Theater, Issue Project Room, PS 122, Bowery Poets, Gershwin Hotel, Cornelia St. Café, Soho House, Fusion Arts, Zebulon, Roulette, Book Court, Writer's Room (NYC); Beyond Baroque and California Institute of the Arts (LA); Source Theater, Museum of Contemporary Art, House on "O" Street (Washington, DC); The Supermarket & Poets Reading Series (Toronto); McGill University (Montreal); Garden Street Books (New Orleans) and Cite des Arts (Lafayette), Louisiana…

Selections from *And Tell Tulip The Summer* (Quattro Books, Toronto, 2011)

Tulip

When tulips blossom on their long green stems and sway in the wind like occult masks, vanishing and reappearing with a suddenness that belies their allure, we know that spring is soon to come, and that romance is but another word for murder. That's why we love red tulips and pick them with abandon. They are the sign that we will begin once more the horrible work that marks us one by one by one.

*

Words are not stones
Stones are not words

Yet for one moment
This moment
They seem the same

Words as stones
Stones as words

I hold up a handful of words
As hard, coarse and ancient as stones

Then they vanish
And stones remain

*

After Rimbaud

And how, through it all—the sweaty gill-stuffed forge, the four or five leather banquets strewn with delicacies from every dream, and those low-slung flickering paper lamp trees—can we ever reclaim what once convulsed us? Those crowds tossed up at sunset against very blue blood, their banners and banter impaled on feverous steel bastards, phantom red-crescent moons with organdy polyps and petals of ash…

For a moment I almost believed in it.

Your touch, my cheap memento… Your warm breath in my ear. And that silly perfume from gilt-beveled grotesques…

But when I listened I heard only silence, ancient and bold.

*

Book of Universes

The soft sweet sighs
of a young girl making love

in a poem
from China

1300 years ago

and these bedroom walls quiver
as if they were
thin pressed bamboo sheaves

I listen now
for her slow panting

she who has found
in pleasure

a rhythm
that crosses time

*

Glimmering moon
ghost sun

A timeless rhythm
in and out
of time

*

And Tell Tulip the Summer

by Allan Graubard

Quattro Books, Toronto, 106 pp.

ISBN 978-1926802640

Reviewed by Valery Oisteanu

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"No man understands a deep book until he has seen and lived at least part of its contents."

-Ezra Pound

Allan Graubard can be categorized as an anti-memorialistic poet with a retro existential narrative. *And Tell Tulip the Summer* begins dramatically in 2001 in Sarajevo, where Graubard returned after an initial visit two years earlier. "There is a fountain," he writes and repeats throughout the poem, followed by lines such as "masked by the moon," "scorched by the sun," "raced by the wind," "trained by the stars," "that whittles his hands," etc. Of course, "All those who drink from this fountain will return!" (p. 11)

Graubard forges a personal voice while constructing surreal metaphors and word combinations such as: "slumbering cities," "cross eyed of dawn," "shadowy engines," "forgotten dreams," "tortured fingers," "rotting handshakes," "tumbling infants," "teething hairs," "jagged mirror stain," "human ignition," "singing bloated corps"—all this from the poem "Modette."(p. 31) His technique stimulates our sound-sense; "Because I Did Not Live" (p. 53) for example, requires reading aloud and then creating "exquisite corpses" by proposing other ironic permutations of the words "life" and "live." "Bob Kaufmann" (p. 75), another one of the best in the

collection, declaims, "Kaufman startled by a simple kindness/ in an elfin hole of empire despair;" one can sing it as a blues. And "Butch Morris" (p. 69) is a poetical-musical composition "And from the other side of silence..."

Graubard is an inspired observer who uses a reflective tone, organically grown from a mix of American and European surrealist literature. His literary diagnosis is compulsive, obsessive, and metaphorically disordered, as in "our dreams dream us dreaming them/ And we dance in a dreamless dream of dreaming." (p. 70) His writing, full of raw emotion, visions of gargoyles, and sophisticated language puns, showcases a humoristic slant chock full of erudite vocabulary.

"Tulips sway like occult masks, vanishing and reappearing..." The subject of vanishing and reappearing is one of his favorite frequent motifs. Another is dance: as he puts it, "dancing sparks dance with life." "Dance of Death" (p. 25), after Strindberg, is a Marquis de Sade-like narrative, one of "golden myth sent back by Morse crickets come to evacuate the uncertain sensibility of dead solitary dawn." (p. 67) The poet's conviction that something transcendent is haunting him is illustrated with a masterly hand: "For we have returned/ from each angle/ in this rotating wind from nowhere." (p. 71)

Throughout the book, Graubard as poet-critic dedicates his modus vivendi to neo-surrealist causes, not only locally, but also in Croatia, Romania, France, the U.K., Holland, Venezuela and Canada (to name just a few). Don't fail to drink from this fountain of poems—and you shall return!

And Tell Tulip the Summer

by Allan Graubard

Quattro Books, Toronto, 106 pp.

ISBN 978-1926802640

Review Excerpt by Jim Feast (forthcoming in *Evergreen Review*)

Another color is the poetic horse Allan Graubard rides. His work is steeped in the surrealist tradition. Despite the complex intellectual scaffolding that surrounds this movement, its verse tends to be narrative, not cerebral or reflective... The surrealists are storytellers, taking plots from dreams rather than other genres, and, more often than not, focusing on love, mad love. Key writers in this style, among whom I count Graubard, describe a world filled with wonder, excitement, awe, humor, anything but business as usual.

Here's how Graubard introduces a character, "You came with fox fur stilts // with feet torn by stingers." You can imagine what his first encounter with a woman like this will entail. He approaches one with this pickup line, "It's time we sat down // and swapped faces." His images are extreme, ravishing and rushing upon you like a spilled bucket of lava. But I said surrealist poetry is filled with stories. One of the book's high points, the sequence "Fragments from Nomad Days," describes a desert encounter between the narrator and a mystery vamp. Their relationship takes various bizarre turns, as when he says,"I would step through her eyes, closing each door behind me, one then another and another after that," and includes an invocation of the surrealist project I noted at the outset, the dream of making life creative through and through, here expressed by noting the reverse,"I accept my lot, which is something quite different from making peace with the world! The spirit of my anger would never allow me to collapse so thoroughly that I would perpetually mistake modern life for what I desire."

This last sentiment helps point out that...Graubard, while [seemingly] acclimatized to his lot, is perturbed by the multiple failures, injustices and criminality he sees around him. It might seem this has led him to tell surrealist tales that might light a fuse under readers, who, admiring these offbeat fictions, will grasp his view. But such a supposition is too facile. After all, who picks up a book of surrealist poetry except someone who is already miserable? I don¹t mean they are morose beings, but rather to make this more specific, they are dispirited and near defeated by the lackluster and shallow quality of most personal relationships in our menacingly evil society.

And Tell Tulip The Summer seeks to turn a page, not by demonstrating what human connections, especially love affairs, would be like in a freer society, one, to keep being concrete, is organized on either socialist or communal anarchist principles, but by graphically instancing what the feeling tones of such loves would be: ever-unexpected, ever-dangerous, ever-entrancing.

*

Science and Conscience: the Life of James Franck

by Jost Lemmerich, English translation, 2011

Stanford University Press, Stanford, CA, 367 pp.

ISBN 978-0804763103

Reviewed by Wilfred Niels Arnold, Westwood Hills, Kansas

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For two decades before 1939, and throughout World War II, German Universities suffered from financial, political, and social stresses. A considerable number of their scientists—particularly those of Jewish background—emigrated to England and The United States. Not only did these displaced people take dangerous personal chances but their actions were subsequently judged by those who stayed home. And some other outstanding scientists were chastised for not doing enough to protect their own departmental members in Germany. The various experiences spawned a special type of memoir.

The present example is the first biography of James Franck (b. Hamburg, 1882; d. Göttingen, 1964). His formal educational venues included University of Heidelberg (chemistry) and University of Berlin (physics) where he completed a Ph.D. degree in 1906. His academic career was interrupted by participation in World War I, from which he emerged with the Iron Cross. In spite of distractions, Franck's scholarly progression was swift. And then, with his professorship in experimental physics at University of Göttingen, Franck enjoyed a happy, productive, and enduring friendship and collaboration with Max Born (theoretical physics). Together with mathematician David Hilbert, they were responsible for the development of a community of excellence at Göttingen, which earned international recognition. Franck (1925) and Born (1954) won Nobel prizes in physics. And then there were the striking number of visits to-and-from top laboratories in England, Denmark, and The Netherlands. The list of major players in this part of the book reads like a who's who of atomic physics. Niels Bohr, Albert Einstein, and Max Planck are featured. An unusually large number of photographs (many from the archive of Franck's daughter, Lisa) are included to show among other things the aging of key characters.

The Nazi takeover with its rules against those of Jewish extraction caused Franck and his family to move to the U.S. and, indirectly, to the University of Chicago. There, he participated in the development of the atomic bomb. Meanwhile, his basic interests shifted to photochemical reactions and the mechanisms of photosynthesis, wherein he made several advances.

The author, Jost Lemmerich, gives Franck good marks for taking care of the scientists who worked with him. They included Lise Meitner whom the Nobel Committee infamously "forgot about" in 1944. On the other hand, it is worth noting that Meitner had to protest (successfully) when Franck favored Ms. Hertha Sponer (an experimentalist of lesser achievement) over Meitner for a local promotion. Later, Sponer became James Franck's second wife. Lemmerich typically leaves any judgmental analysis to the reader. This is indeed a pleasant contrast with the current penchant by the commentariat to find "conflict" wherever they look.

I suppose that "conscience" in the book's title refers mostly to Franck's organized opposition to the dropping of atomic bombs on Japanese cities. He chaired deliberations of a committee, which led to the "Franck Report," June 1945, which is reproduced in appendix II. New readers of this document will find portions of the summary especially engaging. For example, "[We feel that] much more favorable conditions for the eventual achievement of such an agreement [international control] could be created if nuclear bombs were first revealed to the world by a demonstration in an appropriately selected uninhabited area." Franck also advocated excusing the German public at large for the outlandish behavior by Adolf Hitler and the Nazi leaders. Albert Einstein, among others, was opposed to any such easing of blame. In the event, neither the Franck report nor the doctrine of German public forgiveness was followed.

I enjoyed this book and recommend it highly. Some previous introduction to elementary atomic physics and the experimental method is a prerequisite. The wealth of achievement in sciences from this era continues to shine throughout the book and was due to men and women with a deep commitment to understanding nature. I personally believe that science in our time will only return to a comparable state of pleasure and progress when professors are allowed to pursue their own natural and self-determined interests instead of those made by committees on behalf of N.I.H. grants and the like. Finally, I have a comment on the secret flights of Niels Bohr between Copenhagen and the U.S. during the

development of the bomb. According to my colleague, the late Keith Laidler of Ottawa, Bohr's head was too large to be fitted with any regulation, armed services flying-helmet. Anyone who has heard this will never again view a photograph of Niels Bohr in quite the same way.

Jost Lemmerich (b. 1929) is a German physicist-turned-historian who studies 19th and 20th century physics. This volume was translated into English by Ann M. Hentschel, from the German edition (2007).

Cybertext Poetics: The Critical Landscape of New Media Literary Theory

by Markku Eskelinen

Continuum Books, London & New York, 2012, 462 pp.

ISBN 978-1441124388

Reviewed by Jan Baetens, University of Leuven

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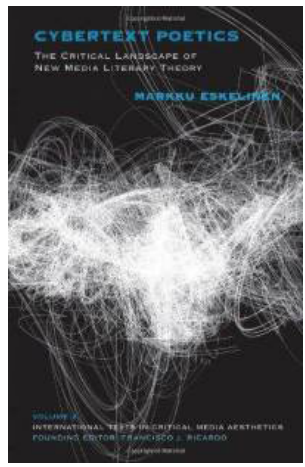
A prominent representative of *ludology*, the academic study of games, Markku Eskelinen has gathered in this impressively fat book (with frequently inserted recapitulative figures, but totally deprived of any other illustration) his essential thinking on the subject. However, one should prevent the reader from the very start that the scope of Eskelinen's book is strictly formal and theoretical: what he intends to establish is a general framework for the description and analysis of all texts that can be produced and read today. More specifically, his ambition is to list the various dimensions that can be distinguished in a literary text, whatever form such a text may take, and to study the combinatory principles that rule their use.



The starting point of this research is twofold. First there is the observation that the countless media transformations of the last decades have given birth to an almost infinite number of new works and new text types that can no longer be accounted for within the framework of traditional, i.e. print-based literary analysis. The case of games, which Eskelinen rightly considers an example of such a new literary form, introduces features that are so different from what can be reasonably conceptualized in classic terms that literary theory can only either ignore these new forms or miss their qualities and interest by identifying them as exceptions, anti-narrative constructs, or idiosyncratic items that don't have any place in any taxonomy, whatsoever. Issues and aspects such as simulation (versus narrative) or the multi-layeredness of time and space (not just as parameters of fictional representations, but as basic features of textual production and reception) play here, of course, an essential role. Second, and this is no longer an observation but a theoretical claim, there is the conviction that the solution to the above mentioned problem is not to split the field of literary studies in two subfields: print culture on the one hand and digital-born culture on the other hand. Although this is still the default option of most literary scholars, who most of the times defend the incompatibility between print modus and digital modus, Eskelinen takes a different, much more homogenizing stance. For him, both print and digital-born texts should be studied with the help of the same (but expanded) conceptual and analytical devices, and his whole book is an (convincing) attempt to demonstrate the usefulness, if not the necessity of this overall approach. The refusal to draw a strong line between both domains does not imply, however, that Eskelinen is obsessed with creating a new general and all-encompassing theory. His goal, which is both more modest and more ambitious, has to do with the elaboration of a toolkit, i.e. of a list of aspects and dimensions as well as a certain number of proposals and hypotheses concerning their concrete use. Interpretation of specific works is something that falls out of the scope of this book, which must be read as what it is: a theoretical inquiry into the parameters of what we mean by a literary text today (and even within this field Eskelinen is mainly concerned with narrative literary texts).

The study of narrative is boundless and the exceptional dynamics of the field makes that it has become very difficult to keep a reasonable overview of everything that is being done, undone and redone, often simultaneously. The first impression that one takes from Eskelinen's book is that the author has an extremely clear view of his material. Not

only does he know very well the basic and less basic discussions on most key aspects of (formal) narratology, he also succeeds in establishing always a lucid hierarchy between authors and theories he considers essential for the construction of his own model and authors and theories he discusses, mainly in order to test and challenge the consistency of his proposals. Throughout the book, and given the author's strong belief that it has no sense to develop digital-born literature as an autonomous field, Eskelinen relies on two major references: Gérard Genette (and to a lesser extent Gerald Prince) as far as classic narratology is concerned, and Espen Aarseth as far as cybertextuality is concerned. The foregrounding of Genette, a classic structuralist whose work has often been criticized as too rigid and narrow by representatives of post-classical narratology (a less formalist, more culturally and contextually oriented update of formalist narratology), comes as a big surprise. Very rapidly, however, Eskelinen manages to convince his reader that the general framework outlined by Genette is actually more open and flexible than that of most post-classic narratologists (whose ideas are often discussed in a polemical way), so that the merger with unforeseen categories and realizations is easier in his case than in the case of those post-classic narratologists whose models are, according to Eskelinen, less inspiring when it comes to open print-based theory to newer forms of textual thinking. Eskelinen's second major reference is Aarseth's cybertext theory on "ergodic" (or if one prefers: interactive) literature, as being developed since the mid-nineties, which remains for him the best possible way to understand what new textual practices such as, for instance, hypertext fiction or games, can bring to our definition of text and narrative.

Next to the merger of Genette and Aarseth, the plea for a unified theoretical approach is undoubtedly a fine achievement of this publication. The implementation in textual theory of many new concepts and insights made possible by experiments or discoveries in digital literature and games is generally stimulating, although not always easy to read, for Eskelinen's concern with typologies and their combinatorics confronts the reader with an endless and sometimes quite boring number of criteria, aspects, parameters, dimensions, levels and all their combinatory rules. The relevance of all these lists can of course only be made "acceptable" by the analysis of concrete and specific works, but the purely theoretical program of *Cybertext Poetics* explicitly refrains from doing so. Moreover, Eskelinen proposes a convincing and healthy discussion of the misunderstandings and prejudices that surround the notion of ludology, the new discipline that is often seen as an anti-narrative or anti-literary methodology and theory. What Eskelinen clearly shows is that this debate is a false quarrel: narratologists do not have to fear ludologists, and ludologists should not see narratologists as their institutional adversaries. Both should work towards the elaboration of a broader conceptualization of what a text is and how narrative can be thought of in a technologically enhanced society. What is missing in Eskelinen's book, however, is a discussion between the positions of ludology and those of "unnatural narratology", a recent subfield within post-classic narratology that "analyzes and theorizes the aspects of fictional narratives that transcend or violate the boundaries of conventional realism. It affirms the distinctive nature of fiction, identifies nonmimetic aspects of ostensibly realistic texts, and gravitates toward unusual and experimental works that reject the conventions of mimetic and natural narrative" (cf. *Dictionary of Unnatural Narratology*: (http://nordisk.au.dk/forskning/forskningscentre/nrl/undictionary/). From an institutional point of view, this absence is a pity, and one can only hope that the publication of this book will reopen this crucial debate.

The Oxford Handbook of Sound Studies

by Trevor Pinch and Karin Bijsterveld (eds.)

Oxford University Press, Oxford, UK, 2012, 624 pp.

ISBN 978-0195388947

Reviewed by John F. Barber, Washington State University Vancouver

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Science, technology, and medicine have long histories of reliance on visualization—charts, graphics, telescopes, microscopes—as the basis for the knowledge and understanding they seek. *The Oxford Handbook of Sound Studies* questions this notion by showing how listening has contributed to scientific knowledge in significant ways.

Editors Trevor Pinch, Professor of Science and Technology Studies at Cornell University, and Karin Bijsterveld, Professor of Science, Technology and Modern Culture at Maastricht University, and their collection

of international contributing authors, examine the central position of sound to human experience, arguing that sounds and music are embedded in human life, art, commerce, and politics in ways that impact our perception of the world, often in ways that we do not notice.

Through an extraordinary series of case studies—sounds of industrialization, the sounds of automobiles, underwater music, and nanotechnology, for example—the authors explore new forms of listening practices and discuss public problems like noise pollution, hearing loss, and new sound and music-related technologies that seem to foreshadow the demise of the amateur musician.

In their introduction, Pinch and Bijsterveld position sound studies as a flourishing endeavor incorporating several disciplines and a range of methods including acoustic ecology, sound design, urban studies, cultural geography, media and communication studies, cultural studies, the history and anthropology of the senses, sociology of music, and literary studies.

"One of the aims of our book," they write, "is to offer readers a better understanding of this contested position of sonic skills . . . in knowledge production" (11). Listening modes are proving more and more valuable, Pinch and Bijsterveld argue, across sites of knowledge production, and the chapters they collect for this book provide multiple contextualized insights into how, when, and under what conditions listening has contributed to knowledge dynamics beyond seeing.

The chapters cover new and old sources of sound production, capture, storage, and consumption, as well as various ways of transforming or "transducing" sound to another medium that allows it to be more easily stored and transported. With the digitization of sound and novel technologies like samplers and synthesizers, listening becomes increasingly more technologically mediated leading, on one hand to "technostalgia," the desire to produce and listen to sounds (especially music) using vintage electronic instruments, and on the other, the creation of new genres of music such as "remixing" and "mash-ups" (19).

Chapters are grouped to examine particular aspects of this approach: shop floors and test sites, the field, the lab, the clinic, the design studio, the home and beyond, and digital storage. Each chapter offers original research on the material and cultural practice of sound as experienced in science, technology, medicine, art, commerce, and politics. Chapters feature an impressive array of example practices, from classical antiquity to current day, and outline new types of listening practices.

A companion website provides listening samples keyed to specific chapters.

In the end, *The Oxford Handbook of Sound Studies* discusses persuasively a breadth of sounds—birdsong to underwater music to television advertising—current-day digital practices for sound in video games, movies, iPods, and computers, and challenges readers (and researchers) to rethink the way they hear and understand the world.

The Universe in Zero Words: The Story of Mathematics as Told through Equations

by Dana MacKenzie

Princeton University Press, Princeton, New Jersey, 2012, 224 pp.

ISBN 978-0691152820

Reviewed by Phil Dyke, Plymouth University

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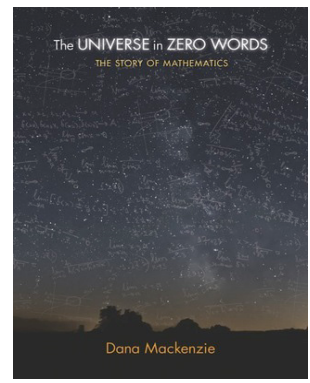

This is a book about the History of Mathematics. It's a nice title, but although each chapter is headed by an equation, it is really an excuse for some historical mathematical anecdotes. That said, it is brilliantly written, and this reviewer who has taught historical aspects of mathematics for a number of years enjoyed the book and learned some details that were unfamiliar. The author possesses a wonderful skill in presenting technical material to those without the facility to understand the mathematics. For those in the mathematics business, it is always enjoyable to see this being done skillfully. The layout of the book is interesting; it is presented in four sections with

each section containing self-contained chapters, 24 in all. The first section will be accessible to everyone as it centers round ancient mathematical material, numbers, Pythagoras' Theorem, and simple geometry. The second section goes from solving cubic equations to calculus and Euler's application of number theory. There is a brave attempt at detailed explanation, but there will be a thinning out of the readership here, like cyclists breaking away from the peloton. Section three tackles more advanced stuff; we have some of the works of Gauss, Hamilton, and Galois. Strange geometries, solution of algebraic equations, Fermat's Last Theorem, and the analysis of spectra are all here. This is full of difficult concepts, but the analogies and descriptions are, in my view, successful. Finally the author goes for broke and attempts to get through relativity, quantum mechanics, Cantor, and Gödel, and the incompleteness of mathematics, chaos, and financial derivatives. This is understandably less successful, and I think only the previously grabbed will get through all of this material. In summary a refreshing look at highlights from the History of Mathematics and a welcome addition to the literature, written in a very accessible style.

Debates in the Digital Humanities

by Matthew K. Gold, Editor

University of Minneapolis Press, Minneapolis, MN, 2012, 532 pp.

ISBN 978-0816677948

Reviewed by Dene Grigar, Washington State University Vancouver

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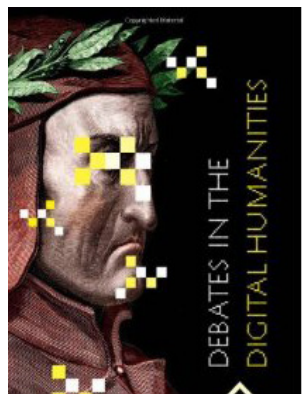
Just as its title suggests, *Debates in the Digital Humanities* explores the various issues in contention among scholars of the digital humanities (or "DH"). Those of us paying attention to *The Chronicle of Higher Education* or the Modern Language Association's (MLA) *Job Information List* are probably aware that DH has been touted as the hot new "Thing" (ix). But as Luke Waltzer reminds us, "the digital humanities is not new but rather the latest stage of inquiry at the intersection of digits and the humanities that stretches back to the 1940s" (338).



What the digital humanities is emerges as the first of six issues under debate. For Matthew Kirschenbaum, it is "scholarship and pedagogy" that is "public," deeply connected to "infrastructure," "collaborative," "depend[ent] on networks of people" who live "online" (9). For Kathleen Kirkpatrick, it can be "understood as a 'nexus of fields within which scholars use computing technologies to investigate the kinds of questions that are traditional to the humanities, or, as is more true of [her] own work, ask traditional kinds of humanities-oriented questions about computer technologies" (12). Lisa Spiro tells us that it is a field whose core values include "openness," "collaboration," "collegiality and connectedness," "diversity," and "experimentation" (24-30). Rafael C. Alvarado argues that "digital humanists are simply humanists (or interpretative social scientists) by training who have embraced digital media and who have a more or less deep conviction that digital media can play a crucial, indeed, transformative, role in the work of interpretation, broadly conceived" (52). Tom Scheinfeldt likens DH's "heavy reliance on instruments, on tools" to that of scientists (57) and tells us that scholars involved in DH are "more concerned with method than...theory" (59). Others, not mentioned here, weigh in with many more articles and with blog posts that further describes the field. The points I am making are twofold: First, the book's approach to scholarship involves a lived practice, with each author providing his or her own perspective that may or may not conflict with the other authors' take on DH––and in a way that does not denigrate but, rather, broadens understanding. Second, this is the same approach used in the five sections that follow, and, so, the book makes for a lively and welcoming read.

Following the first section, "Defining the Digital Humanities," comes Theorizing the Digital Humanities, Critiquing the Digital Humanities, Practicing the Digital Humanities, Teaching the Digital Humanities, and Envisioning the Digital Humanities. The repetition of the verb form reflects the sentiment of progressivism currently associated with the field. A forward thinking approach underpins the way in which the book was produced ("three distinct stages of peer review" xii) and the various forms in which it will finally appear (the printed book and 'an

online, expanded, open-access webtext" xiv). Though *Debates in the Digital Humanities* is well over 500 pages in length, there is no fat in it; all essays contain important information and concepts relating to DH. Taken together, the book as a whole and every essay in it is a must-read for anyone who claims to be a digital humanist whether she or he works in theory, pedagogy, and/or practice.

As one can imagine, a book of this length, organized into six sections of 29 essays and 20 blogs posts, and penned by 43 leading DH scholars covers a lot of territory; more would have made the book unwieldy. So, my next comments speak to ideas touched on in the book but ripe for future development of other publishable studies.

First, I want to see more information about tenure and promotions issues. David Greetham's essay, "The Resistance to Digital Humanities," details the challenges DH scholars face in regards to work counting as scholarship and not service (438-451). Also helpful would be examples of tenure and promotions guidelines that can be adapted for use by others.

The book also leaves me wanting to learn more about projects undertaken by DH scholars, especially those outside of the U.S., Canada, and the UK. Waltzer provides information on several: *Hypercities*, UMW Blogs, and "A Living Laboratory" (343). In other words, what is the breath of "experimentation" (28-29) valued in DH?

Third, I would like to know more about the relationship between the DH and other computer-oriented academic communities so that we can tease out the unique qualities of DH and get a sense of overlaps. How is DH different from media art or film and video studies where practitioners also utilize computing devices for their work, often collaborate in teams, and struggle to explain how their work counts as scholarship? Since the late 1980s the Computers and Writing Community, for example, has been extremely active in theorizing and developing sound pedagogies for using computers for scholarship and teaching––and have already worked through many issues, such as gaining support for digital-based projects for tenure and promotions, engaging in cultural critique, and collaborating in teams, to name a few. Two important scholars of Computers and Writing, Cynthia Selfe and Doug Eyman, are referenced in Elizabeth Losh's "Hacktivism and the Humanities" (179-180), but there are literally hundreds of others working at U.S. universities and colleges. What lessons can we learn from them and the projects they have undertaken?

My final two comments add my own perspective to the digital humanities.

Lisa Spiro asserts in "This is Why We Fight" that the DH needs to "produc[e] a values statement" in order to "provide the foundation for the digital humanities," listing those associated with the "aesthetics and values" of the humanities ("inquiry, critical thinking, debate, pluralism, balancing innovation and tradition, and exploration and critique" 19). She goes on to propose new ones mentioned previously in this review ("openness," "collaboration," "collegiality and connectedness," "diversity," and "experimentation"). It seems to me with the growing lack of support for the humanities in and outside of the academy, that one additional value that may help scholars bridge the gap between academe and the world beyond––and, so, demonstrate to our various stakeholders why studying the humanities is so needed––is "problem-solving." Perhaps we need to go beyond questioning and critiquing established norms, authority, policy, theory, approaches, etc., and lead the way in finding answers to those questions and solutions to those critical problems our communities face. Bryan Alexander and Rebecca Frost Davis hint to this concept in their essay, "Should the Liberal Arts Campuses Do Digital Humanities?," when they stress the need for "community engagement" (384).

Finally, many of the book's the authors allude to computer technology as a *tool*. In an age when mobile devices, are, for many of us, an extension of our hand and extend our online lives, as Kirschenbaum suggests, to "24-7," and computer technology is so ubiquitous that communicating, driving, telling time, paying for groceries, etc. are dependent upon them, it is time to rethink our relationship with computers. If we are makers of things like a digital archive of a literary writer like John Barber's Brautigan.net project or a mobile app for teaching about a historical site like Brett Oppegaard's Fort Vancouver Mobile project, or a 2D animated poem like Thom Swiss's "Shy Boy," then computers are not tools that help us do what it is we do, but rather the medium in which we work. It is a fundamental shift in thinking about our relationship with digital technology that can help to delineate the difference between the humanities and the digital humanities.

Rethinking a Lot: The Design and Culture of Parking

by Eran Ben-Joseph

The MIT Press, Cambridge, MA, 2012, 184 pp.

ISBN 978-0262017336

Reviewed by Jan Baetens, University of Leuven

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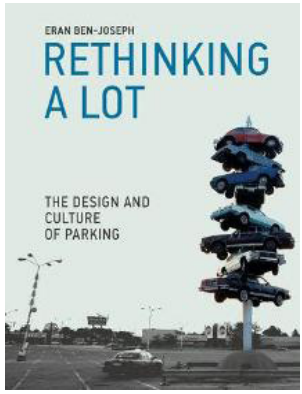

A former city planner and urban designer in Europe, Asia, the Middle East, and the United States and currently professor of Landscape Architecture and Planning at MIT, Eran Ben-Joseph has written an inspiring and thought-provoking book on what can be defined of one of the most strange places (or non-places) of modern life and culture: the parking lot, both overwhelmingly present in our daily life (in certain cities parking lots cover more than one-third of the space!) and bizarrely invisible (for being so self-evident, so 'empty', so deprived of any other than merely functional occupations).

The aim of the book is twofold: first of all to describe, more particularly the parking lot, as opposed to the parking garage (which is not taken into account in this study), with all its facts and figures on the one hand and its still recent but already very rich history on the other hand; second, to make room for innovative thinking, for the parking lot is there to stay, despite (or perhaps due to) the growing awareness of the problems caused by its mechanical expansion and unimaginative design, which has not really changed since the 1950s, when the rapid suburbanization of modern cities provoked totally new patterns of mobility and immobility inside and outside our towns.

The very first strength of this book is, of course, that it opens our eyes. All of sudden, it confronts us with a wealth of material, ideas, and questions on something that we always wanted to know but were too distracted or not smart enough to ask: what is a parking lot, where does it come from, how is it used, who plans and designs and manages it, what difference does it make, how does it change our environment, etc.? The answers to all these questions are often breathtaking, and Ben-Joseph is a marvelous guide into the unknown world of the parking lot. The extremely well-thought out design of the book, not only lavishly illustrated (yes, pictures of parking lots can be beautiful and offer a lot of food for thought) but also exceptionally well laid-out (it will be difficult to find another book in which the interaction of text of image is so smooth and natural), increases the pleasure one has in entering a world that may have been presented also as gruesome, depressing, asphyxiating, ecologically disastrous, and, above all, revoltingly ugly. For the author, who is not blind for the many deficiencies of the parking lot, does not approach his subject as a modern Cassandra. He relies instead on the past and present problems of the parking lot to start making a blueprint for new forms of making, using, and transforming it.

This is, indeed, the second major quality of the book: not just its belief in more pleasing and responsible parking lots but also its concrete suggestions and proposals, well illustrated by the discussion of some (alas still quite rare) real life examples of how that new future can be imagined. Ben-Joseph's thought-experiments go into two directions: He proposes all kind of remediation of current aesthetic, architectural, ecological flaws and, moreover, he discusses also alternative (for instance social and cultural) non-parking uses of the parking lot.

The enthusiasm and the drive that characterize this book are contagious. On a subject that epitomizes one of the many hidden negative side effects of modernization, Ben-Joseph has written an inspiring and even feel-good book, which will prove very useful for a wide range of readers. The interdisciplinary approach of the author, who brings together urban studies, cultural studies, history, ecology, and aesthetics, is a good example of what social design can and should be.

The Self-Made Map: Cartographic Writing in Early Modern France

by Tom Conley

University of Minnesota Press, Minneapolis, MN, 2011, 392 pp.

ISBN 978-0816674480

The Face of the Earth: Natural Landscapes,

Science and Culture

by SueEllen Campbell

University of California Press, Berkeley, CA, 2011, 334 pp.

ISBN 978-0520269262

Reviewed by Mike Leggett, Faculty of Creative Arts, University of Wollongong, NSW

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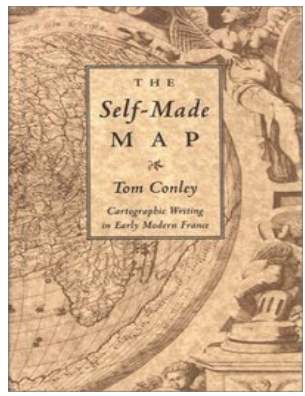
Politics, and (therefore) national and personal identity are at the core of these two publications. The analysis of the remarkable period of European (and therefore) world history during the early modern period of the 15th and 16th Centuries in the first, provides the call for the kind of topographic descriptions compiled during the early part of the 21st Century in the second. Then as now, proliferation of technology and political change provide the background to these accounts, overtly in the first, occluded in the second.

Since the time of the cosmographer Ptolemy 1500 years before the early modern period, cartography had been held, like many other technologies, subservient to the principalities of warlords and the belief systems centred on the Church of Rome. The technologies emerging in the 15th Century – printing, perspective drawing, written forms of the vernacular, scientific method, and other matters of the Renaissance – began the process of rolling back superstition and the power vested through religion.

Maps are of fascination for our quotidian moments and occasionally become essential for our survival (even) to those on the move. A map confidently organises data gathered from the physical world and we accept its greater knowledge and authority as expressed in neutral appearances. We have only to remember the colours applied to groupings of countries, and projections favouring their placement in the frame, to know this is not true. These realisations, a placing of oneself in the world, are the maps of the mind at the centre of Tom Conley's fascinating account.



He begins by providing a window onto an arcane world, (not unlike our own though of a different era), and the inexorable processes through which knowledge was extended beyond the Court and the Church of Rome. The focus is on the various kingdoms that were to become the French nation, though the overall project employed 'European' experts of the day moving (and being moved) to the research and production centres. Earlier travel writings complete with woodcut 'snaps' of scenes and activities sold as well then as they do today. But these lacked uses as tools to soldiers and traders, camp followers and mercantile pioneers – what was required was greater accuracy and brevity.

Individuals like Oronce Finé are traced as they think their way through from the cordiform 'whole world' map view, alerted to the affordances of 'the grid' by both mapmakers and typographers, to the regional almost localised renditions. Writings, from itineraria way-sheets to the sojourns of Rabelais's characters, concomitantly raised the desires of the traveling classes and their expectations of adventures to be had abroad, in the imagination and as experience, on the real roads and byways described in word and image. The bounds of the worldview began to spread with the continuing colonisation of the New World and, "in the singularization of experience that affects cartographic writing", in the island book, or *isolario, (*described as the beginnings of ethnography by 20th Century scholar Claude Lévi–Strauss). Andre Thevet's *La Cosmographie Universelle* took a form that layered in all manner of fact "that refuses to concede to an atlas structure", the precursor of other written forms, (from Swift, to the present day television documentary or celebrity adventure?)

The shift from woodcut to copperplate technology permitted advances in the acuity of the reproduction of drawings but the discipline of the atlas asserted itself in the work of Borguereau, in a perspective form and viewpoint that would be recognised by users of current internet map tools. The royal commissioning of this, like the corporate sponsors of today's manifestations, had a purpose beyond the altruistic – the consolidation of spheres of influence and profit. The Iberian destruction of the peoples of the New World motivated by plunder and religion was the turning point for the emergence of the 'internationalist' essay writer, the three Frenchmen, Montaigne, du Voisin and René Descartes. The carefully analysed differences in their cartographic writing en-

able Conley to arrive at a sentence that carefully locates the reader, the text and its writer. "One can move into space by surveying and arrogating it, and one can make it virtual, seemingly self-made, when a cartographic process is adjusted to the imagination of one's origins, growth, works, memory, and living itineraries."

Michel de Montaigne observed in his seminal *Essais* that "we need topographers to provide specific accounts of the places they have been." This Conley paraphrases as aiding in "the art of writing and composing a work that can extend itself in mental directions that will move long enough and far enough to yield a verbal geography that can be experienced through both intellectual and physical means." Responses to the call over the centuries have been slight, from popular windows on the world like National Geographic, to some twenty writers, several from Colorado State University, who provide accounts in *The Face of the Earth*, not of the rural byways of medieval France, but of the remote areas of today's planet. A series of edited expressions of the culture that constructs our sense of 'the natural world' is offered, as "intriguing and suggestive examples of the many ways that we and our earthly surroundings are tied to each other." 'We' it must be pointed out concentrates primarily on the United States, Great Britain and Australia.

Four chapters, each with about a dozen sections describe the dramatic zones of internal fire, volcanoes and geysers; climate and ice; wet and fluid; and desert places. 'On the Spot' accounts describe the experience of being in such places and are interspersed with the more objective descriptions using the interdisciplinary languages of the sciences and humanities. A final chapter moves into the complexities of mankind's relationship with the physical world, steadfastly maintaining its neutrality, planted in the domain of the empirical. The contradictions of Heidegger's *dasein*, 'being-there', and the clear need for affirmative remedial reconstruction of the human role within the biosphere are left for the reader to imagine if not desire. Clearly the book is intended to elevate the knowledge levels of city-bound high school students, to stimulate and encourage expeditions to sparsely populated places, experience wilderness areas, to create space for mapping of the self to begin, for understanding the forces shaping the landscapes of history and the contemporary world. As a source book for constructing agendas it is admirable, though as there is not an image to be seen, it will appeal mainly to the already committed and serious student.

That student could be further galvanised by Conley's paraphrasing of Lévi–Strauss, "...we can only offer cosmetic reasons for granting humans the right of temporary residence in the nature of things. The gratuitousness of human presence in the world could not have failed to vex cartographic writers of the early modern age as well."

The self-made map approach to writing of the 16th Century, created for the first time a spatiality of narrative, a form that was perfected not in the 19th Century novel but through the development of narrative in 20th Century cinema, a subject about which the author is also a recognised contributor.

Conley's book is an engrossing read because to this reader, so much was new and expressed in such fulsome and scholarly detail. Thus it was a 'slow' read as, often using unfamiliar but resonant humanities-based terminology, so much background needed consulting. At times the detail discussed in the illustrations and maps is beyond visible comprehension on the (octavo) page and this reader had to track down larger images on the internet. (Perhaps a simultaneously published website containing links to images could have benefitted both these publications?) Fortunately, as with the genre of books that have followed the pioneering early modern writers, the images available have proliferated.

Global Icons. Apertures to the Popular

by Bishnupriya Ghosh

Duke University Press,
Durham, NC, 2011, 383 pp.

ISBN 978-0822350040

Reviewed by Jan Baetens, University of Leuven

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Global Icons is a book on the power of "bio-icons", highly visible public figures capable of raising immense affects in local and global audiences. More precisely, Bishnupriya Ghosh studies three of such icons, all female and all South-Asian: Phoolan Devi, India's famous bandit queen (who will surrender to police and after many years in jail become a member of parliament in 1994, the voice of the voiceless), Mother Theresa (who had to become a media star in the late 70S before being accepted as a Catholic saint), and

Arundhati Roy (the Indian writer who after her Booker Prize in 1988 became the spokeswoman of environmental activism). The study, however, does apply to all global icons, South-Asian and others (but why not confess that it is a relief to see that star and celebrity studies are not condemned to focus on Lady Gaga Di and tutti quanti).

Each word of title and subtitle matter here, and deserve a small comment. By using the word "icon," the author uses on purpose a multilayered concept that underlines from the very beginning the fact that the images under scrutiny cannot be reduced to their mere objecthood: it is their social life that matters, and that life is dramatically material. Global icons are not just images that exert a strong influence or that are being admired (or hated, of course), but also images that are being produced, circulated, received, and transformed in ways that can only be understood if one traces the material context in which these processes take place (as shown for instance by the role played by *Time* magazine, the BBC, Magnum photographers, local newspapers, online souvenir shops etc. in the gradual canonization or debunking of Mother Theresa). In this regard, it should be clear that for Ghosh the icon includes a strong verbal component: visual representation and storytelling cannot be separated, and all her examples highlight this interaction very well. Second, by using the word "global", Ghosh stresses another aspect of their multiplicity and ambivalence: the fact that these images function locally as well as globally, but never in similar terms (as seen as well in the posthumous debates on the "ownership" of Mother Theresa, whose recuperation by the Vatican was in contradiction with the claims of the local population, for whom the nun was "their" saint). An icon, the author argues, can only become global if its meaning can be reoriented toward new agendas and new expectations, but in all cases the permanent blurring of boundaries between the local, the glocal and the global are paramount to the success of the icon. Third, by using the term "the popular", Ghosh makes a strong statement on agency, making a distinction between "populism", which puts between brackets the differences in a given social context (that of the people surrendering to a unified whole, often manipulated by media concerns or political leaders) and "the popular", which leaves room for the grassroots formulation of local and particular demands and which supposes a dynamics of empowerment (a thesis that is not automatically accepted in global media studies, in which often a strong accent is put on the homogenizing and alienating effects of the media).

The major merit of *Global Icons* (but the book has many other important qualities as well) is to propose a rematerialization of the icon. The image, here, is once again the material object and the nodal point of a wide range of materially organized and determined communicative acts, and this dramatic emphasis on the image's body as well as the materiality of its ceaseless interpretations and reinterpretations can only be welcomed in a scientific context that emphasizes very heavily the cognitive aspects of hermeneutic processes (of course cognitive studies are not by definition tempted by dematerialization, on the contrary, but the hypermaterialist stance of Ghosh is an excellent reminder of the necessity of reading images and their meaning making as observable, describable, historcizable artefacts). The great model of the book is undoubtedly the work of Antonio Gramsci, and *Global Icons* can certainly be read as an exercise in hegemony studies. However, the range of the author's references is much broader, so that the book can also be used as an overview of icon (and even iconology) studies: "classic" authors as Barthes, Panofsky, Peirce, and Bataille, among many others, but also more recent critics such as Dyer, Negri, Belting, and Butler, here as well among many others, are presented and discussed with great clarity and relevance, so that *Global Icons* has everything to interest both beginning and advanced readers (this too is a great quality, for it is not easy to write for a double audience, while managing to convince each of them).

The book of Ghosh is an endless source of discoveries and provocative thinking in the field of postcolonial studies and the way in which she continues to disclose throughout the whole book always new dimensions of the three examples studied is admirable, but beyond this discipline it offers also many innovative insights at the crossroads of

star studies, audience studies, and critical theory. It offers an extremely valuable contribution to the study of the "life" of icon.

High Society: Mind-Altering Drugs in History and Culture

by Mike Jay

Thames and Hudson, London, 2012 [2010], 192 pp.

ISBN 978-0500289105

Reviewed by Jan Baetens, University of Leuven

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High Society is both the title of an exhibition presented at Wellcome Collection (London, 2010) and a book derived from the curatorial work of Mike Jay, a well-known scholar specializing in the cultural history of drugs. As such, it is a wonderful accomplishment of the not so frequent encounter of scholarly and popularizing efforts that meet here seamlessly in a lavishly illustrated publication that will be of great interest to both scholars and the large audience (the latter will appreciate the fact that the very readable text presents itself without footnotes, the former will find in the final advanced reading section helpful tools for further research; both groups be grateful also for a sober but well-made index).

Jay's book is divided in three parts. In the section "A universal Impulse", he gives a very clear overview of the presence of drugs in all human civilizations as well as of the very different forms and meanings that the use of certain kind of drugs has taken in a wide range of societies, Western and non-Western, natural (or allegedly so) and technologically enhanced, in the present but also in the past. This section helps understand the dramatically multilayered but always thoroughly cultural value of drugs, be it plant drugs (like mushrooms) or laboratory-based drugs (like ecstasy). Jay emphasizes the role of drugs in the construction of human societies and reflects upon their role in the development of the human brain, always insisting on the collective and socially constructed dimension of drugs and taking advantage of the notion of drugs to ask questions on the relationships between the human and the animal. By focusing on the universal character of drugs, Jay does not only foreground that fact that drugs are found everywhere, but that all social groups are to a certain extent dependent, among many other things of course, on drugs, even if not all societies use or forbid the same kind of drugs. In spite of their wildly diverging forms and practices, the drug pattern, which is a cultural pattern of linking the individual and the social, seems to be always the same.

In "From Apothecary to Laboratory", Jay further problematizes the definition of drugs, blurring the boundaries between licit and illicit, drugs and non-drugs, positive and negative. The perspective shifts here from the spatial (as in section I, where the idea is to study the drug phenomenon all over the world) to the historical, more particularly to the ongoing experiments in Western culture, from the Antiquity to the Renaissance, from Enlightenment to the drugs of the future and the discussions on human enhancement. Here as well, the very well-informed study of the ceaselessly growing assortment of possible drugs and their various contributions to often clandestine subcultures, goes along with the emphasis on what is persistent through all changes: the link between the techniques to heighten human consciousness and the construction of human behaviour and social groups. And the examples of opium, cocaine, laudanum, LSD and other drugs do all confirm the basic knowledge already put forward by in Antique medicine: "whether a drug is medicine or poison is a question of dosage" (p. 107).

Section 3, "The Drug Trade", focuses very cleverly on "older" drugs, such as tobacco, opium, and alcohol, and makes clear that the so-called "war on drugs" is an immensely complex phenomenon that cannot be reduced to the dichotomy of "bad" drugs and "good" crime-fighters. Here again, the approach of Mike Jay discusses the many hidden aspects of *laisser-aller* and prohibitionist politics, and the many permanently shifting nuances one has to acknowledge between the many ways of coping with drugs. The final part of this section is devoted to a discussion on the ban on tobacco in the wealthy classes of the Western world, which is analyzed in terms of changing cultural attitudes (and not just in terms of health care considerations and economic s of insurance systems: after all, as Jay astutely observes: smokers do make a positive contribution to the finances of our care systems, for they die sooner and thus help keep under control the exploding costs of an aging population).

Mike Jay's merits in this book are great. He offers a well balanced, historically very rich and culturally very diverse presentation of drugs. His writing can be quoted as an example to all those who want to popularize science. The book is illustrated in a highly di-

dactic yet always very attractive way. And last but not least, one may hope as well that this study makes a positive contribution to ongoing discussion that clearly does not follow the careful and open approach that such a complex phenomenon needs.

Under Blue Cup

by Rosalind E. Krauss

The MIT Press, Cambridge, MA, 2011, 200 pp.

ISBN 978-0262016131

Reviewed by Jan Baetens, University of Leuven

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Although the starting point of this book, the author's efforts to recover short term memory after the temporary brain damage caused by a ruptured aneurysm, may seem very highly anecdotal, *Under Blue Cup* is without any doubt one of the most important publications on medium theory since Krauss's own (and very critical) study on the 'post medium condition' (*'A Voyage on the North Sea'. Art in the Age of the Post-Medium Condition*, Thames and Hudson, 1999). The therapy used to help the author recover her washed out memory made her aware of the fundamental relationship between medium, materiality, time and self - a relationship that she considers basically lost in the kind of art that came after Modernism, i.e. the art symbolized by the *white cube* paradigm of museal presentation and display, focused on the materiality of the medium-specific object. Postmodernism and beyond, which Krauss refers to with the help of the *black cube* model, focuses instead on the experience of a dynamic subject and its primary form of existence is post medium installation art.

The notion of medium is key in any understanding of Modern art, whatever the meaning and scope one may give to this notion. It is based on the conviction that real art (for there are also non-artistic uses of a medium that are called kitsch, a term launched by Clement Greenberg on which Krauss will come in detail) is a particular way of interacting with the specific properties of a certain material support and a certain number of material devices (oil on canvas, for instance). Yet the problem of medium, which any serious artist has to cope with, has been jeopardized by its narrow-minded, simplistically materialist use by the very critic who has been paramount in the momentary success of medium-specific theory, namely Clement Greenberg, both Krauss's model and anti-model: her model given Greenberg's rejection of all non-medium-specific art or kitsch; her anti-model given Greenberg's craving for a purely formalist definition of specificity according to the material parameters of support and devices.

To this view of medium and medium-specificity, Krauss opposes a more complex vision, less teleological (contrary to Greenberg, she does not believe that the goal of an artistic medium is to discover its own specificity, i.e. to progressively abandon all non-medium-specific aspects) and more complex. In this regard, Krauss's basic reference is the work by the philosopher Stanley Cavell, whose work on cinema (*The World Viewed*, Cambridge University Press, 1979), introduced an approach of medium as *automatism*, a notion that for Cavell may replace the worn-out notion of medium, and perhaps also that of genre. But what is an automatism? Mainly the attempt (and, if successful, the achievement) to invent a new rule for the use of a certain 'technical support' (in Krauss's terminology, since Cavell circumscribes the automatism in terms of automatic coupling of sign type, support, and content, but the basic idea remains of course the same). However, the major revolution of the shift from medium to automatism is not just a terminological, but a conceptual one. Contrary to Greenberg et al., Cavell's reinterpretation of medium-specificity as automatism supersedes any essentialist or transhistorical fixation. The rule(s) that define(s) an automatism are open to reinterpretation: a real artist is capable of redefining the automatism, either by inventing a new use of a given 'technical support' (this is for instance what happens when painters shift from figuration to abstraction) or by using a new one (new types of paint or canvas can give birth to new ways of painting, for example). [1]

In Krauss's rereading of Cavell, it is the temporal dimension of medium, automatism, and art that comes to the fore, more particularly the dialectic relationship between memory and forgetting. Here, the main antagonist is McLuhan's media theory, with its strong teleological and non-materialist undertones, and the

main innovation (and this is, in my eyes, a real Copernican revolution) put forward by Krauss in this regard is not only the emphasis on the medium's materiality (which cannot be freely or seamlessly remediated by newer and stronger media, as in McLuhan's view), but also and most importantly her radically structuralist reinterpretation of the tension between old and new. For Krauss, the temporal dimension of a medium (or an automatism, or a genre, or art *tout court*: after all, it is not the terminology that matters most) cannot be reduced to the eternal chain of old and new, of old becoming new, new becoming old, etc., but should take into account that the rules at the heart of any medium use are always at the crossroads of memory and forgetting: Memory, because a rule must bear witness to previous ways of using a medium; Forgetting, because a rule can fall prey to fossilization and must therefore be open to medium innovation and invention, yet always within the limits of the medium's materiality (if not, it no longer possible to set up new rules). The definition of a medium in terms of memory versus forgetting is a real paradigm shift in our thinking of what a medium is, and can be compared with Krauss's seminal article on 'Sculpture in the expanded field' [2], where she had managed to reconceptualize the dizzying chaos of artistic practices that were no longer recognizable as sculpture with the help of the basic opposition, further elaborated in the form of a semiotic square, between 'architecture' versus 'landscape' (sculpture, in such a perspective, is then defined as *non-architecture + non-landscape*). Moreover, this relationship of memory and forgetting is not simply a matter of juxtaposition, of adding-up the old and the new: each artist must permanently reenact (i.e. confirm) and invent (i.e. supersede, reject, transform) the medium, yet not in the linear perspective that may be mechanically inferred from the terms old and new. In art, it can be revolutionary to go back, if this allows for the invention of new rules, new automatisms, new medium uses. Corollarily, it can prove profoundly reactionary and meaningless to leap into the so-called new and the so-called future, if the new and the future forsake the fundamental tension between memory and forgetting.

This 'forgetting' is what characterizes for Krauss the regime of post-medium art, which she had already identified in previous publications as the new art regime produced by 'three things': the postminimalist dematerialization of the art object, the conceptualist emphasis on the verbal definition of the art object, the worldwide success of Duchamp's the readymade (the common feature of these 'three things' beings the war against materiality in art). In *Under The Blue Cup* she adds to other nemeses: deconstruction, whose critique of identity is broadened into a critique of medium-specificity, and the whole range of artistic practices that foreground no longer the object but the subject's free-floating experience of situations (Nicolas Bourriaud's relational aesthetics, Catherine David's anti-white cube curatorship of Documenta X, the political moralism killing the pleasure of the object, and installation art in general are here the main enemies). For Krauss, postmedium art, which forsakes the work with the object's materiality and the history that goes along, does no longer engage with a medium's history. It is therefore no longer a real medium, and proves incapable of building new rules, new automatisms, and new forms of art.

Just as in *'A Voyage on the North Sea'. Art in the Age of the Post-Medium Condition*, where she succeeded in proposing an anti-conceptualist i.e. anti-post medium) reinterpretation of one of the major figures of conceptual art, Marcel Broodthaers, Rosalind Krauss offers in *Under Blue Cup* typically Modernist, i.e. medium-specific rereadings of works and authors that critical peer pressure may partially label as post medium artists, but whose basic attitude is, according to Krauss, deeply committed to the medium's materiality as well as to the medium's automatisms and rules (which are not essential or transhistorical features, but aspects and uses to be discovered trough the hands-on experiments of the artist). The most speaking example of those studied by Krauss, may be Ed Ruscha, whose work is analyzed as the medium-specific 'figuring forth' of a new technical support' of the... car. Ruscha's work exposes what it can mean today to 'drive' and to make sense of being an artist who produces his work not just while driving, but by driving and inventing thus totally new ways of seeing totally new objects. Other major examples in the book are William Kentridge and James Coleman and, to a lesser extent, Sophie Calle or Harun Farocki.

Under Blue Cup is a book whose importance cannot be overstated. A synthesis of Krauss' life-long commitment to medium theory, it is both a thorough discussion with other voices and tendencies in the field and a passionate struggle with contemporary art in the making (yet not from the viewpoint of what is fashiona-

ble today: postcolonial studies and institutional critique). Both elements, theory and practice, are however inextricably intertwined: Krauss judges the art being made today in light of her medium theory, while rethinking this theory under the creative pressure of the best that is being made today. *Under Blue Cup* offers a welcome break with both the political rigor of most critical theory and the theoretical indifference of many cultural industries oriented studies of participatory and convergent media practices. Its exceptionally challenging stances and hypotheses must now be confronted with parallel but not necessarily similar views, such as for instance WJT Mitchell's attempts to reread McLuhan in a more medium-specific way, [3] or Diarmuid Costello's reflections on the ongoing dialogue between Stanly Cavell and Michael Fried. [4] What tomorrow's medium theory will be is of course impossible to foresee in detail, but it is impossible to imagine that *Under Blue Cup* will not play a key role in it.

References

[1] For a more detailed discussion of Cavell's ideas on automatism, see my article "Le roman-photo : média singulier, média au singulier ?", in *Sociétés et représentation ("La croisée des médias")*, N° 10, 2000, pp.51-59. Similar ideas are defended by my Belgian colleague Philippe Marion, who has coined the notion of *medium genius* ("médiagénie"), whose actual meaning is very close to what Cavell signifies by automatism.

[2] *October*, Vol. 8, 1979, pp. 30-44.

[3] "There Are No Visual Media", in *Journal of Visual Culture*, vol. 4 no. 2, 2005, pp. 257-266.

[4] 'On the Very Idea of a "Specific" Medium: Michael Fried and Stanley Cavell on Painting and Photography as Arts,' *Critical Inquiry*, 34:2, Winter 2008, pp. 274-312; see also his forthcoming article: 'Automat, Automatic, Automatism: Rosalind Krauss and Stanley Cavell on Photography and the "Photographically Dependent" Arts', forthcoming in *Critical Inquiry* 38:4 Summer 2012.

Freedom in Entangled Worlds: West Papua and the Architecture of Global Power

by Eben Kirksey

Duke University Press, Durham, NC & London, 2012, 328 pp.

ISBN 978-082235122

Reviewed by C.F. Black

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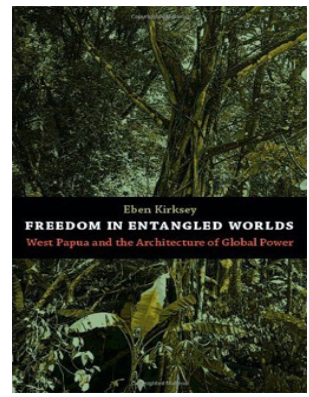
Eben Kirksey, a young anthropologist, sets out to cut his teeth on the outer edges of the known world, believing he was entering the world of the bow and arrow shaped by a pristine mythology in equatorial West Papua but instead found an articulate people with a fully formed vision for their nation's future, as an international player. This political vision is articulated in the concept of *merdeka* (freedom) and the methodological tool stems from the intimate understanding of the growth of a banyan tree.

Kirksey develops his argument by engaging the reader in the magic realism of the *merdeka* the equivalent in some ways to the power behind the 'I have a dream' of Martin Luther King. Into that dream comes the quantum flux of opposition but at other times collaboration. The beauty of the book is that Kirksey articulates the power of the *merdeka* to carry seemingly vulnerable peoples on against enormous odds and brutality by the Indonesian military and the double dealing of the multinationals.

It also brings forth the methodological beauty of the Indigenous intellect and their ability to formulate their own theoretical tools based on the powerful banyan tree, a massive structure that gives off an amazing protective ambiance. Kirksey is influenced by this new political theory and moves from the methodological teachings of Deleuze and Guattari and the abstraction of the rhizome to explain the entanglement of political movements and supplants it with the localized concept of the banyan tree.



Kirksey tells us his goal is to show how freedom in entangled worlds means negotiating complex interdependencies, rather than promoting fictions about absolute independence. He provides us with a kind of dreaming of various actors in the battle over West Papua sovereignty. All players, including the multinational Freeport McMoRan, appear to have their own dreams that construct a reality that at differing points pits them against other realities and at other times allows for convergence and compromise with these oppositional dreams. The battle for the rich resources these unfortunate people find themselves living on comes at a high price and always the innocent suffer. In the West Papua case 47 infant mortalities occurred while Freeport McMoRan was testing

for gas under their village. Such statistics were ignored just as much as the rights and interests of the people.

As Kirksey becomes more engaged in the West Papuans fight for their rights, he makes account of their side of the story for perpetuity, but also finds he is assigned a power he sees as illogical. The West Papuan idea of the world of international politics appears to be naive and misinformed, but still has an appeal and power that draws him in. A dream in which overtime shape-shifts Kirksey from anthropologist to a pseudo messiah able to go to the United Nations and the US Congress and tell the true story of West Papua and the desires for sovereignty of the people, people who wish to share the resources of their country with the world for free. It is a mind-bogglingly generous act, but one that is based on the ancient tradition of exchange as a way of forming political alliances, and a misplaced trust that Kirksey, however, tries to honour through his attempts to influence Congress with the help of the powerful human rights lobby group, The Robert Kennedy Centre for Justice and Human Rights. He is able to, at least, get a hearing with Congress to acknowledge their concerns.

Kirksey's political awakening and journey from the highlands to the hearing before a Congressional hearing is, perhaps, what makes the book a most useful text for students of political science, for there is this arrogance that somehow the elite political world is above the machinations of the poor native in some remote village on the edge of the known world. But, in fact, the native world, perhaps, gives us a clearer view of the bending of the rules. Also it becomes apparent that many would say this encounter is occurring on the edges of the known world, but in fact in resource terms it is at the center of the world of a billion dollar industry. It is an industry that brings this resource from the cloud-covered highlands down and out across the vast oceans to the door of the urban centers of America and so no longer hidden and on the peripheral, but central to supply.

It is a supply that costs in human lives! As Kirksey gives account before the Congress of the murdered activists and the ambush of a group of teachers, including two Americans near the mine and also to the media, we begin to realize he is fulfilling his messianic mission deemed by the *merdeka*. His book also features a many photos, including that of the dead as well as an aerial photograph of the giant tailing swamp that abuts the city of Timika. Readers cannot help ask themselves at what point does the consumer of these resources also take responsibility for their first world lifestyle? Eben Kirksey answers that questioning by finishing the book with a call for an ethical and political transformation through the imaging of open-ended possibilities, a powerful lesson he learnt from imbuing the spirit of the *merdeka* and so the spirit of the land of West Papua.

State of Mind: New California Art circa 1970

by Constance M. Lewallen and Karen Moss

University of California Press, Berkeley Art Museum and Pacific Film Archive, Berkeley CA, 2011, 296 pp.

ISBN 978-0520270619

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This book should probably be evaluated in two ways: as a catalog of an exhibition of specific artifacts and imagery relating to certain artists, and, second, as a general history of conceptual art in its time and place. I value the catalog, yet am puzzled by apparent omissions in its broad historical narrative.

The book begins appropriately with John Baldessari's iconic map of California, where he located on a popular map each of the letters spelling out the state's name and went to those sites, spelling out the letter in a natural material like rocks or logs, with dye or scuffled into the sandy soil. Dan Flavin, Sol Lewitt, and Adrian Piper were artists from the East Coast who exhibited austere and cerebral works in California that inspired its artists to move beyond more traditional painting and sculpture.

While some artwork here seeks a zen-like moment of enlightenment, some of the most compelling work from this time is political and topical. Deadpan photos of parking lots, carports, and every building on the Sunset Strip, were assembled into books by Ed Ruscha, while Howard Fried and Bas Jan Adler produced sequential photographs seeking to shake the miraculous out of mundane daily life. These are contrasted with documentary photos by Fred Londier of 29 arrests of smiling young demonstrators at the 1972 antiwar action before the Headquarters of the 11th Naval District in San Diego. Paul McCarty—later creator of Grand Guignol political tableaux like "Train, Mechanical", George W. Bush robots coupling with pigs to express the artist's dis-

gust at the administration's Iraq war—was producing peaceful slide shows of quotidian urban details in 1971. Martha Rosler's collages brought the Vietnam war home, juxtaposing its violence with exemplary bourgeois households, like Pat Nixon's White House. Mel Henderson installed the name ATTICA in Christmas tree lights upon a Newport Beach hillside a few months after the terrible massacre in that New York state prison. Henderson along with Joe Hawley and Alfred Young wrote the word OIL in nontoxic dye in the water alongside the Standard Oil docks in Richmond, alerting the world to the fragility of their transport process and risk of ecologically disastrous spills.

There were art collectives, like Sam's Cafe (Marc Keyser, Terri Keyser and David Shire). ASCO (Willie Herrón, Gronk, Pattsi Valdez and Harry Gamboa Jr.), who are too often ghettoized to appear only in histories of Latino art and culture, are included in *State of Mind* as vital Los Angeles performance artists. Born around 1950, they may be the youngest artists here. Among the citywide Pacific Standard Time: Art in L.A. 1945-1980 exhibits in 2011, viewers could have compared ASCO's show at the Los Angeles County Museum of Art to their Detroit-originated contemporaries Destroy All Monsters at the Prism Gallery, co-curated by Mike Kelley, who arrived in California in 1975.

The human body was a site of action for Bruce Nauman, Linda Montano, Chris Burden and Howard Fried. Suzanne Lacy, inspired by New Yorker Allan Kaprow's residence at CalArts in Valencia, combined it with community, especially communities of women. The Cockettes were an outrageous troupe of hirsute San Francisco men in glittery drag and outlandish costumes; in the 1980s I was delighted to learn they'd lived in my loft building on Clarion Alley, for I'd read about them at age 14, in Rolling Stone. Julia Bryant Wilson's essay "To Move, to Dress, to Work, to Act" traces their participant Hibiscus to a famous photo of students vs. National Guard troops, where he's a beardless innocent inserting a flower into a guardsman's rifle.

Bonnie Sherk began to bring elements of agriculture and animal husbandry into San Francisco city limits, resulting in the marvelous Farm at the corner of Potrero and Army (later Cesar Chavez) Streets, which thrived for a quarter-century. Lynn Hershman and Alan Ruppersberg created installations referencing, or located in, Los Angeles and San Francisco hotel rooms, respectively. Tom Marioni, Paul Kos and Jim Melchert all did works that interrogated the art-making process itself, as well as the museum as art's premier and privileged site. My hurried list of these artists may read like the whirlwind tour provided in Constance M. Lewallen's "A Larger Stage", the historical essay that occupies about half the book, and details what was evidently a rich and engaging exhibition.

But how complete is this history of California conceptualism circa 1970, even on its own terms? When I was still in high school—a couple years after reading of the Cockettes—*Esquire* magazine ran a multi-page photo spread "CALIFORNIA DADA", featuring what were supposedly some of the edgiest artists on the west coast. There was mail artist Anna Banana, and Irene Dogmatic, in a dog mask and leopard-print shift. Sculptor Clayton Bailey, later to produce memorable robots, was photographed with a Bigfoot skeleton, measuring its "penis bone" with calipers. There were probably five more astonishing notables featured. This article elicited much interest in my teenage art gang in Michigan, as it probably did elsewhere around the US. I'm surprised it's not mentioned in the text, if only as a misleading moment in the popular press about untraditional California art.

In Karen Moss's essay "Beyond the White Cell: Experimentation/Education/Intervention in California Circa 1970" mention is made of San Francisco State College (later S.F. State University) and the Experimental College it initiated in 1965. But there's no mention of its Center for Interdisciplinary and Experimental Arts (CEIA, later Inter-Arts Center), which began in 1954 according to its long-time Director Jim Davis, in a conversation in 1994, when I taught there for a year. The Center lasted about fifty years, until it was disbanded in this century, and included on its 1990s faculty interactive cinema pioneer Christine Tamblyn, political videographer Jesse Drew and radical montage-maker Craig Baldwin. But what was it doing circa 1970? We don't find out here. Or is it and the Experimental College (was it then a part?) conflated in this narrative?

By the late 1970s the San Francisco Art Institute was an exciting center of Punk rock and per-

formance, as Mark Van Proyen affectionately documented in online publication Bad Subjects #51 (2001). And, though also slightly outside of the authors' time frame, mention might have been made of the Conceptual Arts program (later Conceptual and Information Arts; where I got my M.F.A.), begun nearer 1980 by Bryan Rogers and James Storey, then led for two decades by Stephen Wilson, to investigate the intersection of art, science, technology, and a theoretical analysis of culture. This was certainly an institutional affirmation of the creative processes the artists whose work is profiled in *State of Mind* had initiated. Though later works like Carlee Fernandez's "Bear Study Diptych" of 2004 appear in *State of Mind*, and there are helpful mini-biographies of each artist at the back the book, citation of conceptual art still taught at S.F. State and elsewhere would have helped to remind us that California conceptual artists didn't all just give up making art in (or after) the 1970s and go to the beach.

Phenomenal: California Light, Space, Surface

by Robin Clark; forward by Hugh M. Davies

University of California Press, Berkeley, CA, 2011, 240 pp.

ISBN 978-0520270602

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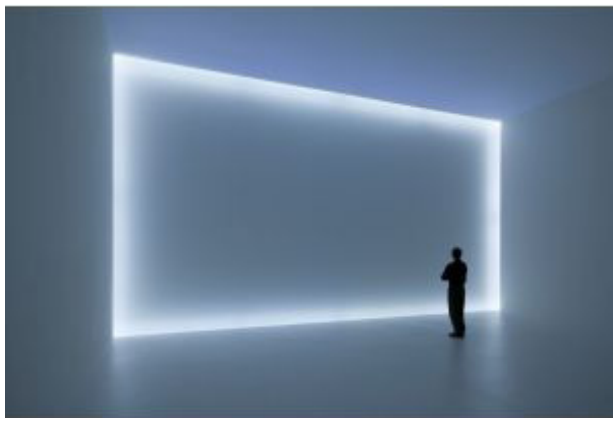
Phenomenal: California Light, Space, Surface is a catalog published to accompany an exhibition by the Museum of Contemporary Art San Diego from September 2011 to January 2012. The MOCA San Diego exhibition formed part of a broader collaboration with the J. Paul Getty Museum and more than 60 other Southern California cultural institutions entitled "Pacific Standard Time: Art in L.A. 1945-1980," that culminated in a major exhibition at the Getty from October 2011 to February 2012. *Phenomenal* aimed to document one aspect of the history of Modernism in Southern California, the "Light and Space" movement, a loosely-affiliated group of artists working in Southern California during the 1960s and 1970s. Some members of the group gained recognition through exhibitions at the Ferus Gallery in L.A. in the early 60s, later to coalesce around a 1971 UCLA exhibition titled "Transparency, Reflection, Light, Space" that featured Peter Alexander, Larry Bell, Robert Irwin, John McCracken and Craig Kauffmann. In five essays, *Phenomenal* explores the work of these artists and others: Ron Cooper, Mary Corse, Bruce Nauman, Eric Orr, Helen Pashgian, James Turrell, De Wain Valentine and Douglas Wheeler whose art, realized primarily through the medium of light, is characterized by an interest in visual perception, process and phenomenology over the traditional materiality of the art object.

Robin Clark's overview identifies key works by these artists that contribute to an understanding of the LA movement. She notes the emergence of certain figures such as Robert Irwin, Doug Wheeler and Larry Bell from various painting trajectories that include Abstract Expressionism, Hard Edge and Color Field. It was in these areas that ideas connected to Minimalism pushed abstraction (yet again) to the reductive limits of art production, to the dematerialized ethos of ideation, the purity of Zen consciousness and self-reflexivity. This was a period in which Robert Rauschenberg, John Cage, and others launched E.A.T. (Experiments in Art and Technology) with Billy Klüver at New York's 69th Regiment Armory in 1966, one of the springboards from which art, music, dance and other transitory performances probed the boundless, museum-less, gallery-less mental space of creativity. Labels attached to alternative foci during the 60s and 70s included Environmental, Ambient, and Phenomenal Art. In So Cal, the mix was also joined to interests in fabrication processes such as vacuum-form molding; new aerospace technologies; resins, polymers, acrylics, fiberglass and plastics appropriated for their reflective, refractive and translucent properties. Despite known relationships to the work of John McLaughlin, whose contemplative grid-based paintings were inspired by Asian art, Phenomenal artists concerned themselves with effects of light, space and energy within purely contemporary sightlines without recourse to metaphysics or symbolic spirituality. Their interest in sensations of confinement, release, isolation, immersion and rapture was conceived perceptually, at once psychologically complex, immediate and exploratory. Even in work not traditionally associated with figures such as Irwin, Turrell and Wheeler, installations referenced Frederick Perls' theories of Gestalt psychology through manipulations of light, space and constructed elements that could induce unexpected human responses. In Bruce Naumann's *Green Light Corridor* installation in La Jolla (1970), for example, a narrow corridor illuminated by green fluorescent light elicited

feelings of oppression and entrapment.



Michael Auping's essay, "Stealth Architecture: The Rooms of Light and Space," describes his own reactions to installations of the 1970's by Michael Asher, Robert Irwin, Maria Nordman and James Turrell. He observes that many of these artworks interrogated relationships between content and context, material and immateriality in ways later set forth in Brian O'Doherty's *Inside the White Cube*, essays concerning artistic space that appeared in *Artforum* in 1976. For some, the perimeters of rooms represented framing devices that prompted distinction and symbiotic interaction between ephemeral experience and the articulated space of architecture. For others, it was space itself, envisioned as a focal field, that became the subject of the artwork as in Michael Asher's 1974 installation at the Claire Copley Gallery in which the empty (aesthetic) space of the gallery constituted the exhibition. Though one of the more fundamental aims of artists associated with this movement was to move beyond the confines (and materiality) of painting to non-relational, non-associative references, Auping compared Asher's work to Yves Klein's gestural *Le Vide* (The Void), a 1959 installation in Paris in which Klein painted the walls of the gallery as if they were white canvases citing a definition of painting as "radiance." Yet Asher's interest in spatial composition, as other artists such as Larry Bell and Robert Irwin, also centered on the visual language of perception, the nature of light and the science of perspective studied since the Renaissance. While Minimalist artists of this period resolutely sought to deny anything but the recent past, rejecting European influence, most would acknowledge that the reductive drive that propelled modern art throughout much of the twentieth century was significantly accelerated by Kasimir Malevich and El Lissitzky. Their Suprematist artworks investigated dimensional relationships between geometric configurations and painting, architecture and space in ways that overturned Renaissance theories of pictorial perspective and anticipated the concerns of later conceptualists who sought to isolate the aesthetic space and its praxis from history.

Dawna Schuld's essay "Practically Nothing: Light, Space, and the Pragmatics of Phenomenology," grounds the work of Irwin, Turrell, Orr and Nordman in the phenomenological philosophy of Maurice Merleau-Ponty whose embrace of cognitive science and descriptive psychology formed the basis of a concept of the body as a membrane through which perceptions about the world are assimilated into consciousness in an ongoing process of "becoming." Her essay does much to further an appreciation of the Light and Space movement's roots in Minimalism and its program of dematerialization though she bypasses Lucy Lippard's influential *Six Years: The Dematerialization of the Art Object* (1973) that traced the emergence of Conceptual art from 1966 to 1972. She points up the importance of experiments conducted between 1968-71 at LACMA in Curator Maurice Tuchman's "Art and Technology Program" in which scientists and engineers were paired with artists in tests that involved sensory deprivation, particularly within an anechoic chamber, a soundproof structure used for astronautic and psychological research. Irwin, Turrell, Wheeler, Nordman and Orr all spent time in the chamber, an experience to which they attributed an increased sensory awareness upon their release. Installations that followed emphasized the enveloping softness of darkness or a nascent encounter with light as inchoate awakening.

In Stephanie Hanor's "The Material of Immateriality" the ephemeral aesthetic of LA art of the 60s and 70s is described as a sophisticated conversion of physical products largely associated with post-war American industrialism into immaterial essence. She considers sheet acrylics, lacquers, cast resins and metal coatings adopted for their surface properties that could be

machined to "almost perfect optical clarity" through flawless polishing. Larry Bell used precision finishes employed by the US Air Force to create the mirrored surfaces of his highly reflective glass cubes; Robert Irwin utilized transparent acrylics banded by metallic centers for Discs whose subtle ethereal transformations from shadow to light, opacity to translucency approximated transcendence.

"Work and Word" by Adrian Kohn ponders the inadequacy of verbal language to approach abstraction, especially in visualizing phenomena that is transient and fugitive. It calls attention to the ambiguity of artist statements that are often obscure and circuitous, frequently resorting to feelings to convey intrinsic qualities of the artwork. Since this problem plagues Light and Space art as well as other works that pose a challenge to photography, it alerts readers to the limits of transcribing certain phenomena into theoretical discourse.

The catalogue contains numerous black and white and full color illustrations of works treated in the text along with a chronological Select Exhibition History (both one-person and group shows), Select Bibliography, Exhibition Checklist and Index. It does not address the overlapping contextualization of Phenomenal artists in exhibitions dedicated to sculpture, new materials or other areas tangential to evolving interests in "primary structures." It does not explore the ideological background of Conceptualism and Minimalism, categories to which several of the more prominent artists have been assigned through their radical involutions of high modernist tenets of flatness, autonomy, surface, shape, edge and pure opticality, qualities traditionally assigned to painting. Nor does it probe debates surrounding Modernism and Post-Modernism unleashed by Clement Greenberg and Michael Fried's redefinitions of painting that triggered reactionary conceptions of sculpture. While the catalogue looks forward to the work of Tara Donovan, Olafur Eliasson, Kimsooja, Rafael Lozano-Hemmer and Spencer Finch as examples of artists who have been influenced by So Cal predecessors, it circumvents Lucio Fontana, Dan Flavin, Julio Le Parc, Carlos Cruz-Diez, Chryssa and the Denise René Gallery in Paris where GRAV/*Groupe de Recherche Visuel* conducted experiments in environmental light manipulations and performance during the 1960s.

The identification of artists included in the catalogue within a range of heterogeneous strategies whose precise coordinates remain at issue (artists such as Michael Asher and Maria Nordman chose not to be included in the exhibition) points up the problematic nature of critically designated movements, particularly ones whose emphases include geographic distinctions and claims of shifting epicenters. This, coupled with the highly complex network of cross-currents exchanged among Pop Art, New Realism, Minimalism, Conceptualism, reductive abstraction and site-specificity during this period, should alert the viewer/reader to the arbitrariness of categorizations that act as scrims through which reception can be filtered much as light and space themselves.

Deadline Every Second: On Assignment with 12 AP Photojournalists

by Ken Kobré, John Hewitt, Producers

58 mins., 2011

Film website: http://www.deadlineeverysecond.com

Reviewed by Amy Ione, The Diatrope Institute

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Ken Kobré's *Deadline Every Second* introduces the viewer to 12 Associated Press (AP) photographers on assignment as they cover breaking news in eight countries. The variety of images is compelling. Sequences show them recording war, political clashes, financial markets, natural disasters, sports and human-interest stories. It is hard to ignore the power of the images of the battle zones in Afghanistan, protests in Israel, terrorist attacks in Pakistan, wildfires in California, the Tour de France, and the events of Sept. 11 in New York City, and the impact that this work has on AP's large audience is equally compelling. Over a billion people a day see the photographs AP generates, which number over one million images a year. The shots are disseminated through 15,000 news outlets throughout the world, and I expect that, like me, viewers will find many of the images in the film familiar.

Part of the success of the film comes from the aesthetic dimension of the work's overall organization. Photojournalism often brings to mind *On Photography* by Susan Sontag, where she argued that our capacity to respond to images of war and atrocity in our rapaciously media-driven culture was being dulled by the relentless diffusion of vulgar and appalling images. Twenty-five years later, in her book, *Regarding the Pain of Others,* she reversed her position, maintaining that

images turned us from spectators of events into witnesses. I found that Kobré's fast-paced and collage-like presentation somehow seemed to allow for both responses to exist side-by-side. One reason for this, and for the documentary's success, is that Kobré not only presents images, he also introduces us to the people behind them because he was given access to the 12 photographers while they were actually shooting the stories presented here. As a result, we are able act as witnesses of more sides than what a single image conveys. We glimpse them waiting for events to happen, see the risks they take, feel the pressures behind each "perfect shot," learn how they wrestle with danger in the field, and appreciate the challenge of processing images in unusual environments.

What it means to be in the middle of things is reinforced as each photographer discusses his or her approach to the complex activity photojournalism is. For example, while many spoke of how they try to focus on the raw events without embellishing, several also mentioned the need show sensitively to human suffering while in the midst of heart-wrenching events. This is mirrored by the way the more emotional images are artistically compelling yet make powerful statements. Indeed, one of the most effective messages of film is that it offers various vantage points on humanity. We see that the dangers the photographers face when covering war and wildfires are not at all abstract. We also learn of the backstory on many images we know.

For example, Richard Drew, the photographer who produced a number of striking photographs on 9/11 talks at length of how it all happened. He was covering a fashion show that day and received a call from his editor telling him to go down to the World Trade Center, something was going on down there, enabling him to take many of the now iconic pictures of the buildings collapsing and people jumping out of the windows. Speaking about it, Drew conveys that he was able to "find" the incredibly wrenching photographs within the chaos because of his internal impulse to capture the story. One image he speaks about is known as "The Falling Man," one of a series of images of a man who jumped out of the North Tower that day. The image won a 2001 World Press Photo award and became the subject of a 2006 documentary film.

Ken Kobré, who is a filmmaker, award-winning photojournalist, author, and head of the photojournalism program at San Francisco State University, used five episodes to structure his fast-moving and focused presentation. The divisions are: (1) News, From Routine to Extraordinary, (2) Earthquakes and Wildfires, (3) Bicycling and Basketball, (4) Presidents to Pilgrims, and (5) Combat and Clashes. The progression reiterated to me the degree to which images have defined our reality in recent years. I liked the way the script conveyed the complex stories behind images. To my mind, we need to have more critical dialogue about how our images impact our world. This kind of production opens the door because it operates on many levels. I was glad to see that the film is often shown in public venues with panel discussions following the screenings. This seems important because when I went to write this review, a few weeks after screening the movie, I realized that my mind more easily recalled the dangerous and tragic portions of the film. Why was it easier to recall these segments rather than the time spent on sports or the photographs of the wax figure of President Obama being delivered to the San Francisco's Wax Museum?

I think the production benefited from having someone who is a photojournalist scripting the project. Kobré traveled three continents to film these outstanding photographers. As a "one-man-band operation" he acted as lighting and sound technician, director, producer and cinematographer all at once. According to Kobré, "When shooting a documentary by yourself, it's hard to control all the technical activities and ask questions simultaneously. The automatic focus and sound level features on the camera allowed me to shoot but still concentrate on my subjects. On automatic, the camcorder itself made excellent exposure decisions."

All in all, this documentary is perfect for the classroom and it is the type of work that should appeal to people in all walks of life. Going into the field with the photographers articulates that photojournalism is often fast-paced and can be dangerous. I was quite taken in by the mixture of compassion and objectivity expressed by many of the photographers. In sum, I highly recommend the movie and strongly recommend seeing it with others so that a conversation can unpack it after the viewing ends.

Automata and Mimesis on the Stage of Theatre History

by Kara Reilly

Palgrave Macmillian, UK, 2011, 232 pp.

ISBN 978-0230232020

Reviewed by John F. Barber, Washington State University Vancouver

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In her new book, *Automata and Mimesis on the Stage of Theatre History*, author Kara Reilly explores the history of automata, automated moving figures of animals or humans whose life-like movements suggest they are alive, as part of theater history, arguing that they constitute the historical precursors for today's machine-based entertainments. Chapters examine the mimesis (the art versus nature) of automata across several centuries and areas of representation.

The central argument throughout is that automata are both performative objects of mimesis and metaphors for the period in which they are explored. Automata, says Reilly, are performers on the stage of intellectual history, deeply connected to cultural history, contributing to ongoing tensions between nature and art, and producing our way of understanding and shaping reality as performing objects in theatrical and technological spectacles.

Reilly proceeds along three routes to position, conduct, and support this study: onto-epistemic mimesis, remediation, and trans-historical study. By onto-epistemic mimesis she means a mimesis "that changes a person's way of knowing [epistemology], and by extension their way of being [ontology]" (7, my definitions inserted).

With regard to remediation, Reilly echoes Jay David Bolter and Richard Grusin's (*Remediation* 2000) positioning of the process of "the representation of one medium in another" as "the defining characteristic of the new digital media" (9). But, as Reilly argues, there is a long history behind cyberculture mimesis ranging backward in time from current-day Second Life avatars to the mechanical spectacles of Ancient Greek drama. Mimesis she argues not only represents reality, but shapes it as well, not as an aspect of social or historical construction, but as an aspect of history itself.

This point lends itself to a trans-historical approach to the study of automata and Reilly argues for a horizontal sense of connection and patterning as part of a participatory continuum. Automata are historical objects that can be explored over time, she says, but, any focus on a particular time period must incorporate a thick description of pre-existing structures and/or artifacts that have led or contributed to the remediation of the artifact at the particular time of its examination.

Following this theoretical underpinning, Reilly proceeds to examine automata across some of their trans-historical sweep. Chapter 1 examines the English Reformation Iconoclasm's fear that the power of art (specifically the representation of life by automata) might surpass the power of nature (God). Despite efforts to erase images depicting biblical subjects, religious icons resurfaced as moving statues in secular gardens or tropes in secular theater. Automata foregrounded anxieties over the persuasive power of images and eventually became the idols of the Iconoclasm movement.

Chapter 2 examines the influence of hydraulic garden automata on René Decartes' mechanical philosophy in his *Tretise on Man*. Descartes, Reilly argues, demonstrates onto-epistemic mimesis when he says, as a spectator of mimesis, he can see no difference between machines built by artisans and objects created by nature.

Chapter 3 looks at French automata created by Jacques Vaucanson and Pierre Jaquet-droz, who both attempted to use mechanical philosophy to make sense of the natural world by creating mimetic mechanical devices that were in turn celebrated by eighteenth-century aristocrats as the ideal. In another example of the power of onto-epistemic mimesis, Reilly argues that the gigantic powdered wigs and round rouge marks on the cheeks of late eighteenth-century women's fashions gave courtiers the appearance of mechanized dolls. On the other hand, this mimesis formed the basis for criticism of the aristocracy as ridiculous autocrats controlled by ineffective mechanical bureaucrats. Reilly offers examples from then-contemporary theatrical productions.

Chapter 4 examines theatrical productions featuring the alluring beauty of E.T.A. Hoffmann's automaton Olympia, whom the protagonist, Nathanael is unable to recognize as a machine, falling deeply in love with her. This trope is reimagined in several later, subsequent theatrical productions, which are also examined. Reilly argues theories and perception of the uncanny, the shocking change from perfect fetish to mechanical monster, emanating from Olympia is representative of women as fetish objects in commodity culture.

Chapter 5 provides a case study of *R.U.R.*, the drama by Karel Capek who coined the now universal term "robot," meaning "worker" or "slave laborer." Reilly argues that robots represent the growing anxiety over the increasing mechanization

of human beings and technological and scientific progress in the wake of suspicion following the atrocities of mechanized carnage during World War I. Where automata are entertainers, robots are workers, or, as the play suggests, killers of humanity. Reilly ends her book with this advent of robots.

Throughout *Automata and Mimesis on the Stage of Theatre History*, Reilly positions the desire to utilize mimesis to construct realities as metaphors for each of the historical periods she examines, crafting interesting intersections between theater history, technology, performativity, and mimesis suggesting that representation not only presents reality, but also shapes and creates reality. Implications for present-day and future mimesis include the continued negotiation between the simulacrum and the real, creating copies or models for the onscreen hyperreal that seem more real than the surrounding world.

Diane Arbus's 1960s: Auguries of Experience

by Frederick Gross

University of Minnesota Press, Minneapolis, MN, 2012, 248 pp.

ISBN 978-0816670116

Reviewed by Jan Baetens, University of Leuven

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That there is a serious problem with Diane Arbus scholarship (to put it more bluntly: that it tends to be slightly repetitive, and stuck into a small number of well-marketed clichés) is not a secret. Neither is it a secret that, despite the efforts of many, such as the editors and guest-editors of journals such as *History of Photography*, this problem has much to do with the overprotective attitude of the Diane Arbus estate, which infamously refuses to grant any authorization whatsoever to illustrate academic research on this artist. It comes therefore not as a surprise that this new book on Diane Arbus, which proposes numerous new insights on her work, contains no images at all and probably refrains also from addressing too much the personal life and biography of the photographer. Triggered to a large extent by a new exhibition, the 2004-6 *Revelations* show that offered not only unpublished pictures but also more than a glimpse into Diane Arbus's notebooks and many of the books present in her own library. This study by Frederick Gross is a timely reminder of the importance of Diane Arbus as well as a wonderful attempt to interpret her work against the grain.

Two major stereotypes, both deeply rooted in the artist's biography, have blocked new developments in Arbus scholarship since various decades: her suicide at age 48, which transformed her into a kind of Sylvia Plath with a camera, and the widely accepted thesis that she somewhat exploitatively focused on one single subject, that of the modern freak (nudists, retarded, dwarfs, transvestites, etc.). In this book, Frederick Gross aims at dismantling this crippling typecasting, not by frontally rejecting it but by proposing a totally different framework intended to supersede most existing understandings and misunderstandings of the work.

The major and dramatic innovation of Gross's approach is the proposal, well-documented, and clearly argued, to study Diane Arbus in light in the tradition of the social panorama and the social portrait gallery. A continuation of the sociological ambitions of all those who, like Nadar, Bradley, Sander, Evans, Frank, and many others (yet none of them in the same vein or in the same spirit), considered photography a means to offer the visual analogon of a certain society, the work by Diane Arbus should be read as a postmodern version of it. The word postmodern here does not imply that the photographer is no longer eager at giving an encyclopedic survey of the social types and roles of his or her social environment, but refers to the fact that this representation does no longer claim to follow preexisting or preconstructed "objective" or "positivist" typologies and hierarchies. Arbus shares with the tradition of the social panorama the craving for a visual disclosure of the real, but this disclosure is no longer illustrative (as in the 19th Century model, where photography is expected to prove by showing what had already been told by others). Arbus's pictures refuse instead the social (class), biological (race) and cultural (ability) assumptions that underlie the available models of explanation, as endlessly repeated by middle-class publications such as *Life* and Cold War events such as Steichen's *Family of Man*. Frederick Gross has the great elegance, which is also a sign of great intelligence, to avoid any political overinterpretation of Arbus's stances, but his comparative close readings of the famous MOMA "New Documents" show, which revealed Arbus to the greater public, and the photo-journalism of the previous decade clearly demonstrates the critical attitude of Diane Arbus's pictures (which the contemporary viewers did not interpret as freakish in the very

first place). A key issue in Gross' reading is the notion of pastiche, which he uses in the Jamesonian meaning of the term to point to a more intertextual way of photographing that takes into account the multilayeredness of the real and the intertwining of subject and image. Each subject does already exist as image, as representation, and it is only the critical dialogue with these existing ways of seeing and showing that make possible the realization of Arbus's fundamental project: the disclosure of the gap between intention (of the artist) and effect (on the reader or viewer) as well as the endeavor of laying bare the gap between the role or the type on the one hand and the individual on the other hand. The individual cannot be seized without the global framing of the social panorama, for no individual exists outside such a frame, but the implicit or explicit categorization of this structure has to be deconstructed by the artist whose work is to show the impossibility to map the individual on his or her role or type.

A second great achievement of Gross's book is to stress the importance of the intertextual dimension of Arbus. The study pays great attention to the magazine culture that has nourished, yet always in a very critical way and one suppose with a lot of editorial tensions, the work by Arbus. The clash between her unusual photo work and the shameless consumer culture that promoted in the other pages of the magazines in which she was invited or allowed to publish her reportages is absolutely amazing, and Gross is the first critic to underline the effects of this often unforeseen montage effects. He is also absolutely right to remind of the importance of Marshall McLuhan's first book, *The Mechanical Bride*, a pioneering essay against the deleterious effects of mass media consumption and advertisement (McLuhan was not afraid of using the term of "media fall out"). Yet the presence of Arbus's pictures in glossies is not only to be read in terms of clash and opposition, for Gross does also provide much evidence of positive interaction with other material, such as the literature that the short story sections of these magazines were publishing and whose influence on Arbus's work become now blatant (a good example is the ongoing dialogue with some short stories by Jorge Luis Borges, whose metafictional universe seems to have had a real influence on Arbus's way of thinking). Besides the strictly literary intertext of Arbus's images, which Gross reads in much detail, there is however also a strong photographical environment, and here as well the close-readings by Gross offer much food for a fresh interpretation of Arbus. Particularly illuminating in this regard is the collaboration with Richard Avedon, an artist whose work is too rarely associated with that of Arbus. Thanks to Frederick Gross, the explicit linking of Arbus and Avedon does not only shed new light on Arbus, it can also help reframe Avedon's work in the larger context of the social panorama.

Last but not least, the intertextual reconsideration of Arbus's photographs takes also a more cultural form. Instead of emphasizing the strangeness or the freakishness of these pictures which at first sight seem so different from other material of that era (yet not of the next one, and Frederick Gross includes also a very detailed overview of all those who, like Les Krims or Cindy Sherman, have been deeply influenced by Diane Arbus), this book offers an exciting rereading of the relationships between Arbus and the 1960's *Zeitgeist*, mainly at the level of the new visions of the body and the bodily involvement of the artist in her work. It should be repeated here that Gross does not enter very much into biographical detail but discusses these issues from a wider cultural point of view. In this regard, his main focus is on two evolutions or phenomena: first the emergence of the happening, which is only rarely associated with the world of photography but which enables him to describe Arbus's method in terms of contact and experience (but definitely not of confrontation or clash); second the spread of conceptual art, whose link with photography is well known but whose impact on Arbus's work had never been analyzed in such a subtle way (an important aspect here is the preference given to subject at the expense of form and what all this entails for the specifics of picture-making in the case of Arbus). Here as well, Gross proves to be a very clever close-reader and his whole book demonstrates that even an artist such as Diane Arbus, whose work and life are so well categorized that there seems to be no need for further research, can be opened again for new readings.

Hide and Seek: Camouflage, Photography, and the Media of Reconnaissance

by Hanna Rose Shell

Zone Books, Brooklyn, NY, 2012, 240 pp.

ISBN 978-1935408222

Reviewed by Brian Reffin Smith

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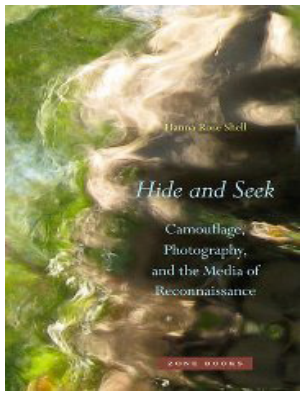

This review must start with a complaint about the book's design. It isn't good enough to have a book on camouflage, necessarily a visual subject, whose illustrations are poorly printed on not very good paper, as if the publishers had no access to image editing software. There is a series of slightly better colour reproductions at the end, but these have a tacked-on air. I am aware that the majority of photographs were low-contrast monochrome in the originals, but it might have been better to forego the colour at the end and spend a bit more on the black and white. Or did someone decide that if the photos were too clear, then the camouflage wouldn't work?

That said, it's an interesting read. There is a lot to be said for 'the gaze' and its studies being directed to what is not to be seen rather than what is and yet more for a study arguing that camouflage is primarily directed to the photographic emulsion rather than the eye. Whether this be true or not, it disrupts our idea of what camouflage may be and broadens any inquiry into areas of media art and cognitive psychology and questions of what is and is not to be seen.

For this reviewer there were two main thoughts that arose. First: are we not all would-be masters and mistresses of disguise? Do we not risk becoming the sum total of the bits of stuff that we stick to ourselves hoping to become what we look like, until all that is left is the outer shell of photos and PR material sticky-taped to wire and papier-maché, with no one actually home?

Second: do we not want to fit in everywhere, like a colour- or shape-shifter? (The author makes much of the 'chameleon impulse'.) There is much in this book about the history and practice of camouflage, but it is really all leading up to the idea that we ourselves practice a kind of camouflage consciousness.

In passing, there is a rich mine of ideas to explore and leads to follow. What would it be like if things had no shadows? (There is shadow-removal theory and technology at work already: entering "shadow removal" into a well-known search engine gives over 70 000 hits, mostly not about cosmetics.) If we really 'fit in', don't we just disappear? But camouflage out of context is hyper-visible! I am reminded of seeing Warhol's 37 foot long camouflage painting in Berlin, which stood out in the *Neue Nationalgalerie* like a sore thumb.

So often, what is to be concealed by camouflage is not a thing in itself, but some aspect or secondary effect of a thing. By attending to why and under what circumstances that may be camouflaged, we paradoxically draw attention to this aspect itself. We start a dialogue between the (of course connected and fluid) 'opposites' of Lao Tzu / Laozi: "…it is on the space where there is nothing that the usefulness…depends." This is a book, also, about hide and seek, about Monty Python's 'How not to be seen', about the sniper as a vehicle for deep perceptual studies and finally about camouflage as anything but green and brown painted material. And like all the most interesting books at the moment, it blurs the distinction between true and false, between our old certainties of something and nothing, of yes and no.

Beyond the Dream Syndicate: Tony Conrad and the Arts after Cage

by Branden W. Joseph

Zone books, New York, 2011, 480 pp.

ISBN 978-1890951863

Reviewed by Stephen Petersen

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"By the time we arrive at La Monte Young, Robert Morris, etc., the boundaries between the mediums become unimportant. There was a milieu which may have consisted only of Young, Morris, myself, and one or two others, and which was never chronicled in art history. This milieu regarded the mystique of the separate arts--painting, sculpture, music, poetry, drama, ballet, opera--as "uptown," as corny. Methods (e.g. minimalism) were freely transferred from one medium to another."-- Henry Flynt, "The Crystallization of Concept Art in 1961" (1994)

Looking back more than three decades after his 1961 invention of the mathematical-musical-linguistic-artistic hybrid that he called "Concept Art," Henry Flynt placed it within the activities of a small group of downtown New York composers and artists, a milieu that he noted was

"never chronicled in art history." The reasons for this oversight, he suggested, have much to do with the fierce defense of medium specificity within historical studies of the avant-garde. A conservative discipline, art history has failed to deal adequately with work that falls between media and methods that "were freely transferred from one medium to another."

This previously uninhabited (art) historical space is precisely the territory covered by Branden Joseph's illuminating study of the composer and filmmaker Tony Conrad, originally published in 2008 and now reissued in paperback. Joseph's approach is decidedly non-monographic; he spends as much or more time on figures such as Flynt whose work intersects in different ways with Conrad as with Conrad himself. Nor yet is it a contextual study that would seek to recreate the ambiance of a time and place (although it does so to a considerable degree). Borrowing a term from the late artist Mike Kelley, Joseph calls his project a "minor history," *minor* in the sense that the word has been used by Gilles Deleuze and Félix Guattari to designate a heterogeneous cultural field, irreducibly different from--yet in Kelley's formulation "parasitical" to--the "major," understood as sovereign and hierarchical. If "minimalism" is a stable (i.e. major) category in the histories of art, dance, music, and film, a "constant against which, whether explicitly or implicitly, other phenomena are measured," Joseph looks rather at those "minor" figures, Conrad foremost among them, who elude categorizing and whose place in the narrative of minimalism has been largely overlooked. "Minor" as used here does not mean less significant but rather outside the dominant discourses, and shifty with respect to linear narratives and object-based histories. And, echoing Flynt's dismissal of the "uptown," it remains "fringe" or low with respect to official culture.

The book's subtitle points to the critical importance of John Cage, whose compositional and performance strategies were based on a withdrawal from cultural authority and authorship and a new relation of work to audience in real time and space, what the critic Michael Fried would famously call "theatricality." The "arts after Cage" are characterized by heterogeneity and hybridity of means, an emphasis on materiality and direct experience, and an implicit (sometimes explicit) anti-authoritarian politics.

The five main chapters of the book cover little more than a half-decade, charting Conrad's trajectory from Harvard mathematics major and violin player to "structural" filmmaker through a series of collaborations and friendships, what Joseph calls a "network of intersecting positions" (p. 74). In 1959 Conrad met experimental composer La Monte Young in Berkeley and soon thereafter immersed himself in musical composition, influenced by Stockhausen and Cage. Although drawing different lessons from Cage, Conrad and Young would closely collaborate in the ambient performances of the avant-garde enterprise known as the Theater of Eternal Music or what Conrad would come to redefine as the "Dream Syndicate." Where they differed was on the ideological import of their sonic experiments (Young tending toward mysticism and idealism and, along with sculptor Robert Morris, toward restoring a sense of control, power, and form to the anarchic Cagean project). Joseph then turns to the philosophical "concept art" of Henry Flynt (a classmate of Conrad's) but also to Flynt's quasi-political ideology of "creepism"--cultural deviance (in multiple senses of the term)--and his embrace of "acognitive culture," namely the realm of wholly unofficial or "uncodified" actions. This leads into a discussion of the short-lived, proto-alternative rock group The Primitives (featuring Conrad along with John Cale, Lou Reed, and Walter de Maria) and the sexually transgressive underground film *Flaming Creatures* (1962-63) by Conrad's friend and collaborator Jack Smith. The book's final chapter considers Conrad's abstract stroboscopic film *The Flicker* (1965-66) in relation to his "investigation into techniques of perceptual and neurological stimulation" (p. 301) and alongside Brion Gysin's "dream machine" as a work that acted directly upon its viewer's nervous system. By trying ultimately to shift the viewer's mode of attention and thereby to afford "new types of thinking" (p. 349), Conrad's work exemplifies and develops the radical legacy of Cage.

Beyond the fascinating and heretofore untold story recounted here, this book is important for the way its method mirrors his subject. Joseph moves across and between disciplinary genres of scholarship, and thereby challenges the reader's capacity to think outside familiar categories. This study sits at the fringes of several academic disciplines and, to its credit, fits squarely within none. To paraphrase Conrad, by shifting our mode of attention it prompts us both to renew and to alter our thinking.

I Must Not Think Bad Thoughts: Drive-By Essays on American Dread, American Dreams

by Mark Dery. Foreword by Bruce Sterling

University of Minnesota, Minneapolis MN, 2012, 304 pp.

ISBN 978-0816677733

Reviewed by Mike Mosher, Saginaw Valley State University

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I've been a fan of Mark Dery for 20 or so years, ever since he quoted something I said on the WELL's forum on teledildonics (computer-mediated sex) in his book *Escape Velocity*. Dery cordially requested permission to do so—back when civility was expected, or certainly valued, in all online discourse—and then, after publication, invited all his correspondents in the region to gather and drink together when he hit San Francisco on his ensuing book tour.

This essential, but sweetly old-fashioned, gentlemanly courtesy in an age of disembodied electronic communication occupied Mark Dery. He had earlier edited an anthology *Flame Wars*, which contained Julian Dibbell's provocative "A Rape in Cyberspace" report on significant abuse in a role-playing game. After *Escape Velocity*, Dery went on to assemble an entertaining collection *The Pyrotechnic Insanitarium*, a title first given to Coney Island amusement parks, freshly bedecked with electric lights, at the beginning of the 20th century.

And he's given us another fine and thoughtful dime museum, each essay as engaging a dog-faced boy. The very conceit behind "(Face)Book of the Dead" recalled Norman Mailer's portentous declaration (made at the time Mailer and Rip Torn were filming Mailer's odd movie "Maidstone") that the similarity between film and death was worthy of further exploration. Dery is often evocative of Mailer's best essays, shaking and chewing on a topic like a dog while succulent fatty insights dribble out.

Like Mailer, the author (and reader) has much fun kicking around issues of masculinity, whether the dubious sexuality of the Super Bowl, of George W. Bush, eccentric specialized porn sites, Madonna's toe in a sexy Versace advertisement, or the disembodied robot voices of the spaceship's computer Hal in "2001: A Space Odyssey" or car in "Knight Rider". As if dressing for the disco—don we now our gay apparel—Dery puts on his most purple prose for these topics, for good effect.

There's much of the grand old tradition of Tom Wolfe's shimmering surface of asides, cultural citations, winks and facial expressions coming through the page. A piece on Lady Gaga (a personage in several of my students' paintings this past Spring semester) is like a prolegomena for one that soon follows, on David Bowie as the representative of the 1970s. Dery re-iterated this appreciation of Bowie as herald of his decade in a radio interview with leftist economist Doug Henwood.

He offers nothing really new on guns, but cites Sontag's "Fascinating Fascism" (the original version that discussed a book of Nazi regalia as well as Leni Riefenstahl), soon jumping from the Kiss Army to Stephen Sondheim, to finally glimpse through the lens of Debord's Society of the Spectacle. In "Shoah Biz", he tackles the issue of Holocaust commemoration, a dangerous third rail of a topic that nearly destroyed the editorial group of the long-running online publication Bad Subjects seven years ago. In this essay I was taken a bit aback when one Auschwitz visitor was described as "hawk-nosed"; is this a Streicher-era stereotype, or an appropriate evocation of a proud raptor?

A visit to the Vatican reminds him of the church's influence upon a vital strain of goth novelists, from DeSade to Anne Rice. He compares martyred Saint Lucy and Saint Agnes, their eyes and breasts held up, respectively, before the faithful on plates, to truckstop waitresses serving the day's special. His rich imagery puts him in the company of the "splenetic contrarian" Camille Paglia, who also regrets the Church's modernization, while also condemning the Church's strictures on birth control for its cost in human misery, including the spread of AIDS. One of his choicest political pieces recognizes zombies as a metaphor for organized labor in our time. He's also not afraid to confront race, calling out American insults to its black and brown populace; I'd like to see Dery on a panel with Ishmael Reed or bell hooks some day.

As we, in our instantaneous age, are faced with the inevitable problem of book production, some of these pieces feel a bit dated. The oldest is from 16 years ago, and several are from before 2000. Perhaps Dery should be collected between covers three times each decade. What he writes hasn't really been superseded by subsequent events and new info, but I somehow fear that after the financial crash ongoing since

2008, and the "global weirding" tipping point of unnatural weather everywhere, that everything has changed so much that 2000-ish perspectives of any kind are suspect. Maybe my awareness of *tempus fugit* is further colored by reliving the enjoyment I felt reading Dery in the 1990s.

The book's last few essays are thematically grouped around medical concerns and mortality, with light belle-lettristic travel writing on eccentric nihilists, the skeletally-decorated Crypt of the Capuchins in Rome, finely crafted Italian medical models with beautiful faces, and multiple meditations upon the Mutter Museum's replica of a Chinese criminal's severed head. I too am a fan of medical libraries, since a college bout of research long ago, a purely intellectual interest in the topic of, uh, social diseases, found me also discovering huge, hand-colored nineteenth-century photographic atlases of skin diseases. The book wraps up musing upon identity and the mind, Dery's thoughts about his intellectually-encouraged upbringing decades ago blossoming sunnily like azaleas during an afternoon spent with his mother, deep in her own isolating Alzheimer's disease. I hope he didn't slip the relic beneath his sport coat while departing the Capuchins' Crypt, but I closed the book suspecting Mark Dery is, beneath the effervescence and urbane disposition, the kind of medieval thinker-commentator who keeps a skull upon his desk.

Ship Shape: A Dazzle Camouflage Sourcebook

by Roy R. Behrens

Bobolink Books, Dysart, Iowa, 2012, 376 pp.

ISBN 978-0971324473

Reviewed by Mike Leggett, Faculty of Creative Arts, University of Wollongong, NSW

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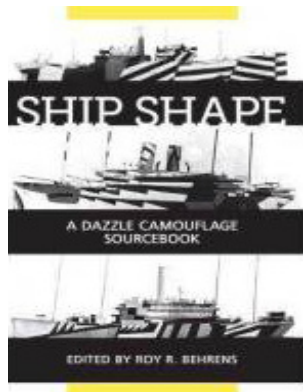
Ship shape by style and *Ship Shape* by name, this is the latest book launched by Roy Behrens in his seemingly endless quest for the last word on matters of concealment. Where the previous title, *Camoupedia – a compendium of research on art, architecture and camouflage*, (reviewed *Leonardo Reviews Quarterly* 1.01, June 2010) provided a prodigious number of leads into the field, the crisp new contribution expands one of the topics adumbrated therein – the matter of protecting as far as possible, the merchant ships of World War One from the U-boat menace.



'Dazzle' was the term used by the British to describe their approach to painting their ships, a practice which at one point the Americans referred to as 'jazz painting'. On seeing photographs of these ships a moment of shock occurs; the violent sweep of shapes and clash of angles assault our visual perceptions. There is a contradiction between the images and what we know of the normally ordered lines and integrated colours of a sea-going vessel; anarchic presentations fly in the face of all that we know of the Merchant Marine and its highly controlled and ordered existence. The impact that these images have today is, of course, unrelated to the affect the painted designs were intended to have at the time on the enemy. The US Navy's approach concentrated efforts on experimenting with colour and varying degrees of visibility. A team at the Kodak Labs in Rochester came closest to science-based methods in the scaling of their observations using the so–named and risible, 'visibility meter'. It was, however, part of measuring the process of denaturing visual memory and confounding tacit knowledge of the natural world. For the most part at first, as we are reminded by several of the contributors, it was all a matter of trial and error.

Experiments with submersibles had been conducted by naval powers for a couple of centuries, but it was not until the late 19th Century technologies of high capacity batteries and Diesel's engines that enabled German submarines to be brought into service; their effectiveness as weapons of war can be measured by the extent of the loss during the conflict of some 5,000 Allied ships. The key to prevention was to accentuate both poor visibility at sea and also the unstable viewpoint afforded by the periscope, and to confound the visual perception of its user, known as the gunner. From the perspective of a metre or so above a rolling sea, there were but brief seconds to gauge course and speed of a target vessel. Designs were planned to make vital dimensions of the ship difficult to fix, thus leaving direction or distance open to estimation; with a torpedo taking several minutes to travel the dis-

tance, errors were bound thankfully, to have occurred.

We get a sense from the photographs of the shock and awe value of the designs applied to ships, combining the ideas of two leading exponents, the British naval man Wilkinson with his attempts to deceive, and the American Thayer's intention to conceal, using his theories of countershading and colour. For me the chapter that most successfully describes the issues was written, (like most of these essays, immediately after the War), by Everett L. Warner for the suitably titled *Transactions of the Illuminating Engineering Society Volume14 No 5*.

Behrens, again acting as editor of the words of observers and participants in the conflict, assembles images to illustrate what is imparted, providing useful captions and footnotes to the array. The downside of this approach is unfortunately made very evident; because the field has been narrowed down to this fascinating but highly specialised area, the full-length articles and papers reproduced, for this reader, became unproductively repetitive. I found myself turning pages after a while to get to the real delights of the book, the illustrations. Even at octavo size, they leapt off the page in shrieking strides of nonconformity.

This, like the previous volume, is no coffee table book and, therefore, a great loss to collectors that these clearly pristine photographs cannot be seen at greater size. (However, a significant number, well referenced here can be seen and ordered online at the U.S. Naval Historical Center Photographic collection.) Following adverse comments from many quarters as to dazzle painting's effectiveness, one of the real measures of success determined by commanders was the situated actions of helmsmen in causing collisions and other accidents attributable to dazzle painted ships. Undoubtedly some ships were successful in confusing the torpedo gunner, escaping destruction and thus justifying the effort expended. The use of different kinds of dazzle in the Second World War shifted from the merchant marine to the warships; aerial surveillance and the greater use of capital ships in coastal bombardment required fresh approaches to the pioneering work so fulsomely covered in this volume. Perhaps the next volume in the series will examine the way in which dazzle aesthetics developed between the Wars?

Ship Shape it is, but I feel it will be less of a leading source book than the previous publication, except to the specialist, but comes complete with a bibliography of some 1200 titles, some 40 from Behrens himself.

The Future Was Here: The Commodore Amiga

by Jimmy Maher

The MIT Press, Cambridge, MA, 2012, 344 pp.

ISBN 978-0262017206

Reviewed by John F. Barber, Washington State University Vancouver

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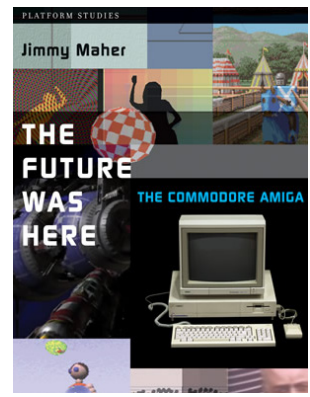
The Platform Series from The MIT Press, edited by Nick Montfort and Ian Bogost, seeks to investigate computing systems and how they enable, constrain, shape, and support creative work as well as to explore the cultural and social contexts in which these platforms exist. The most recent release in this series, *The Future Was Here: The Commodore Amiga* by Jimmy Maher, achieves both these goals with distinction. Maher describes the cultural and historical context in which the Amiga computer was developed, introduced, and eventually faded to obscurity; the features that made this particular computer unique; and explains why this is important with technical rigor, and the grace, elegance, and style often associated with the Amiga itself.



Maher's central claim is that the Commodore Amiga 1000 was the world's first multimedia personal computer. With its palette of 4,096 colors, capacity to store and manipulate color photographs, unprecedented animation capabilities, access to professional tools for video manipulation, four-channel stereo and the ability to utilize recordings of real world sounds, and the capacity to run multiple applications simultaneously, the Amiga was not only the first computer to provide a bridge between the bifurcated world of business and game computers, but the harbinger of present day digital media like digital cameras, Photoshop, MP3 players, YouTube, Flickr, and the blogosphere.

Maher backs these bold claims with individual chapters detail-

ing how the Amiga community of practice brought features and developments from evolving institutional computers to personal computers. For example, the chapter "Deluxe Paint" provides a deep and rich background discussion of the development of features and affordances for the creation and manipulation of digital images now taken for granted when using programs such as Photoshop or GIMP. "SSG and Sculpt-Animate" discusses vector drawing and animation. "New Tex" focuses on the successful efforts to bring desktop video manipulation to the Amiga. "Cinemaware and Psygnosis" details how the Amiga's power, resolution, animation and stereo sound capabilities, and custom chip processing all contributed to the development of realistic, immersive gameplay environments and experiences.

Along the way, Maher is careful, and successful, to realize another goal: to credit and properly document the work of the visionary engineers, developers, and designers who played roles in the success of the Amiga, and therefore influenced our current-day technological world. Additionally, Maher provides insights into the technical, cultural, and economic factors that influenced the Amiga's development and lifecycle.

In the end, the future of the Amiga was hampered by its lack of support from Commodore management, as well as its closed, and limited, hardware configuration and operating system. Both prevented the revolutionary computer from competing successfully in a technological environment turned to modularization and adaptation. But the beloved underdog computer still attracts a loyal following. The Aminet online repository of public domain and open source software for Amiga computers declares itself the world's largest collection of freely distributed software for any computer system. The Amiga remains a favorite platform for the Internet retrogaming community.

The success of Maher's narrative is not necessarily to provide a study of the technology and/or sociology associated with the Commodore Amiga computer platform, although he does so quite compellingly. The original technology of the Amiga is no longer viable, and the community of developers, artists, hackers, and gamers has moved on. While nostalgia might be an easy mark for such a book, Maher's study aims higher, situating the original vision of the Commodore Amiga as a computer to make multimedia and multitasking possible. The success of *The Way the Future Was* is to reveal how the Amiga computer contributed so significantly to the development of today's digital multimedia-rich personal computers.

At once challenging, rewarding, emotional, and insightful *The Way the Future Was* is a compelling read for those interested in the Amiga platform, as well as those interested to learn more about the culture of computing.

Computing: A Concise History

by Paul E. Ceruzzi

The MIT Press, Cambridge, MA, 2012, 175 pp.

ISBN 978-0262517676

Reviewed by John F. Barber, Washington State University Vancouver

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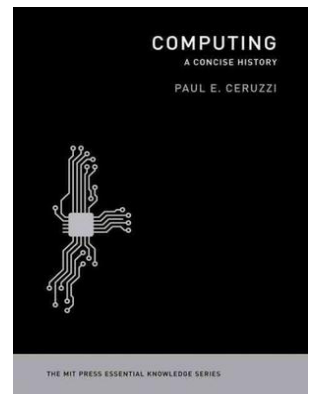
Paul Ceruzzi, a curator at the National Air and Space Museum, Smithsonian Institution, has written extensively on computer history. See, for example, *A History of Modern Computing* (2003, second edition) and *Internet Alley: High Technology in Tyson's Corner, 1945-2005* (2011), both published by The MIT Press. His most recent publication, *Computing: A Concise History*, rather than a specialist text, provides a concise overview for a knowledgeable audience.



To many, the history of computing may seem the story of hardware and software developments from mainframe to social media involving big companies with household name recognition. Ceruzzi, however, offers a more compelling narrative, one that is broader and more useful. He identifies four threads running throughout the development of all computer technology: digitization, convergence, solid-state electronics, and the human-machine interface.

By digitization, Ceruzzi refers to the notion of coding information, computation, and control in binary form, using 1s and 0s. Although traceable back to Gottfried Wilhelm Leibinz (1646-1716), Ceruzzi notes that the so-called "digital" method of control, storage, and calculation was not widely used until the 1930s, and then concurrent with "analogue,"

from which it was not so different until changing electrical states (on or off) were used for communication, a capability not offered by earlier computers.

The convergence thread speaks to many different techniques and technologies, each coming from its separate historical development background, merging into devices capable of performing many different tasks. The result, combined with digitization, is something far more than the sum of individual parts, which, once it surpasses a technical threshold can quickly overtake existent technologies and render them obsolete.

Solid-state electronics allowed computer technology to constantly increase in speed and storage capacity, while decreasing in size, according to Ceruzzi. This begs the question of technological determinism, that technological advances drive history, versus social and political forces driving innovations, thus shaping society, and Ceruzzi argues that both are valid by providing interesting and relevant examples.

The human-machine interface, according the Ceruzzi, goes to the philosophical roots of computing by asking whether, when constructing computer machines, we are trying to create mechanical replacements for humanity, or a tool that works with us in symbiosis. How does one design a machine that takes advantage of humankind's motor skills, our ability to sense patterns, all while providing information we are not good at retaining?

These four threads, taken together, provide the weft and weave of Cerruzi's concise history of the digital information age. His account follows the computer from a room-sized machine to minicomputer to desktop computer to pocket-sized smart phone, each driven by silicon chips, ever decreasing in size while dramatically increasing the machine's ability to control, store, calculate, and communicate data.

For those interested in the fundamentals of computer history, *Computing: A Concise History* navigates a complex world with in-depth, authoritative coverage in terms accessible to the non-expert.

Imagery in the 21st Century

by Oliver Grau, Editor; with Thomas Veigl

The MIT Press, Cambridge, MA, 2011, 424 pp.

ISBN 978-0262015721

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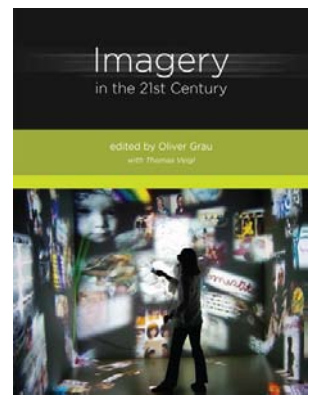
As I began this review I began to think that the refrain "we are surrounded by images today" has lost its impact (despite my being among the guilty users of it). On the one hand, it seems that many of us notice the imagery. Yet, on the other hand, as we increasingly engage with our visual culture certain norms for our critical investigations are also developing. I'm not sure where this leaves us. To be sure, the nature and complexity of our image-abundant culture is extraordinary. Images are no longer sparse and highly treasured. Rather, we have visual social media, scientific imaging tools, and even static objects like paintings populate the ever-changing screens of our mobile and desktop devices. Even those among us who have resisted some of the broad spectrum of electronic options (think Flickr, Facebook, YouTube, thousands of television channels, digital games, and virtual worlds) cannot escape this new world. Posters and window displays offer smartcodes that invite us to connect with the Internet and learn more about whatever the sign is promoting. Always on, complete with sound, are television screens in airports, restaurants and the array of imaging devices that bring us news, sports, entertainment, whatever. Given the state of the "image" today, critical examination of channels of media and communication are needed. *Imagery in the 21st Century,* edited by Oliver Grau with Thomas Veigl, presents a number of perspectives on this theme, highlighting the inroads of media into art and science. It is a valuable contribution to the topic.



Overall, the book offers systematic and interdisciplinary reflections on expanding and novel forms of images and visualization. Drawing on a number of experts, the twenty chapters highlight new efforts to visualize complex ideas, structures, and systems. In today's information explosion the question of where what digital images represent and where they fit in the scheme of things becomes quite prismat-

ic. As a whole, the chapters are quite strong; they do not suffer from the unevenness so common in collections of conference papers, which this book is. Of particular value is the breadth of the essays. Researchers from the natural sciences and the humanities explore the wealth of diverse functionality that images have evolved to offer to our lives, that includes lab applications, social commentary, humanistic questions, and experimental art projects. The spectrum of topics include: database economy (Sean Cubitt), telepresent images (Martin Schulz), ethical boundaries (Eduardo Kac), the emergence of a future web-based video aesthetic (Thomas Veigl), brain research (Olaf Breidbach), medical illustration (Dolores and David Steinman), interdisciplinary practices (James Elkins), the role of source code (Wendy Hui Kyong Chun), the interface (Christa Sommerer and Laurent Mignonneau), the museum (Peter Weibel), cellular automata (Tim Otto Roth and Andreas Deutsch), cultural analytics (Lev Manovich and Jeremy Douglass) and a digital version of the Warburg Image Atlas (Martin Warnke). Even this abbreviated list offers a glimpse into the diversity of efforts to expand visual competence through providing cross-disciplinary exchanges among the arts, humanities, and natural sciences. While this range makes the volume a valuable tool for examining this subject across disciplines, the title, *Imagery in the 21st Century*, is likely to seem a rash overstatement in a few decades, given that the century has hardly begun.

Chapters focusing on applications and innovations offer the most of substantive value, in my view. "Toward New Conventions for Visualizing blood Flow in the Era of Fascination with Visibility and Imagery" by Dolores Steinman and David Steinman falls into this category. Well written and comprehensive, these authors set the stage by pointing out that medical images (drawings, woodcuts, engravings) have always played a key role in educating practitioners and knowledge development. They then follow with case studies that illustrate their efforts to represent blood flow in the context of the living body and conclude with some commentary on medical imagery as art and in popular culture.

James Elkins' chapter, "Visual Practices across the University: A Report," also stood out. Elkins presents a brief summary of a book called *Visual Practices across the University* that was published in German in 2007 and is little known outside of the German-speaking world. The essay summarizes an exhibition project that was initiated by sending email to faculty in the sixty-odd departments at University College, Cork asking for exhibition proposals from anyone who uses images in their work. What stood out in his commentary is how differently scientists, humanists and artists think about images and imagery. In this case, he found that while most visual work in the university is done outside of the humanities, most of this work is invisible because the routine image making and image interpretation is not considered as important to the goals as what the images represent and the science that they make possible.

Oliver Grau, the editor, is a Professor for Image Science and Dean of the Department for Cultural Studies at Danube University, the author of *Virtual Art: From Illusion to Immersion* (2003) [1] and the editor of *MediaArtHistories*. His collaborator, Thomas Veigl, is on the scientific staff of the Department for Image Science at the Danube--University Krems. Their opening chapter, Introduction: Imagery in the 21st Century, sets the stage well and is available at http://mitpress.mit.edu/books/chapters/0262015722chap1.pdf. Grau's concluding section on "Media Art's Challenge in Our Societies" offers an overview of image studies today. Parts of the chapter are useful but, because some sections in it are so focused on his professional efforts to meet today's challenges rather than the challenges overall, the text read like an infomercial at times.

Throughout the book it is clear that there are the endless options for image manipulation and that while new media presents us with both interactive opportunities it also raises challenging questions (about human autonomy, entertainment, interaction, etc.). The editors note:

"Images increasingly define our world and our everyday life: in advertising, entertainment, politics, and even in science, images are pushing themselves in front of language. The mass media, in particular, engulf our senses on a daily basis. It would appear that images have won the contest with words: Will the image have the last word?" (p. 6)

Perhaps images will have the last word. On March 12th of this year (2012) the *Encyclopaedia Britannica* announced "it will cease publication of the 32-volume printed edition of its flagship encyclopedia, continuing with the digital versions that have become popular with knowledge seekers in recent decades." The press release also noted that "[*The Encyclopedia Britannica*] was originally

published in Edinburgh, Scotland in 1768 and has been in print continuously ever since [2]. When I grew up, like many of my generation, this book was like browsing the web. I used to love to turn the pages, looking at the images and reading the articles that related to images that caught my fancy.

Of course, the Grau book itself raises another side of the question about whether images will have the last word. At this point in time it is not available electronically although sections of the text (without the images!) are on Google Books; moreover Google Books does not offer active links to all the many, many websites the Grau book references. Amazon's page for the book does not link to a Kindle version. Instead, Amazon has a link asking visitors to tell the publisher to offer a Kindle version.

So, will images have the last word? Perhaps. Or perhaps we need to ask: Is it a good thing for images to have the last word? I did not think that the depth of this kind of question was fully addressed in the book since its focus was on the importance of understanding images as vital and dynamic parts of our world today. Thus, my primary concern about this volume, which I recommend overall, is that the reflections and analytical approaches offered did not seem to balance the euphony and cacophony of our experience today. While I'm not exactly sure how this relates to whether images will have the last word, I do know that at times all of the changing images surrounding me feel very cacophonic. As a participant in the movement is to reverse the dominance of textual sources in our approaches to knowledge, as we celebrate our visual abundance, visualization methods, the distribution of images, and how imagery benefits our lives; it seems foreign to have evolved to the point that I think so much about the visual noise. Even in this book I found that some of the projects seemed strikingly cacophonic, and thought that the theoretical assumptions of the authors overall are more biased toward euphonic reactions to our visual culture than the harshness and discordant qualities that are congruent with our visual culture?

Perhaps the next step is making sure we address that the cacophonic side is actively included in our critical analyses or imagery. Grau does stress that using an historical lens is an aid in understanding our imagery today. This perspective opens the door for a balanced analysis of the visual and textual and I support him in this effort. Therefore, while the book is only a slice of the imagery picture today, I think readers will gain much from spending time with *Imagery in the 21st Century*.

References

[1] See my *Leonardo Review* at http://leonardo.info/reviews/feb2003/GRAU_ione.html

[2] "Encyclopaedia Britannica To End Print Edition, Go Completely Digital," http://www.corporate.eb.com/?p=508.

On Time in Film / DVD

by Takahiko iimura

DVD, 1972-2007, 32 mins., 2007

B&W and col., sound.

ISBN 4-901181365

Performance / Myself (or Video Identity)

by Takahiko iimura

DVD, 1972-1995, 29 mins., 2008, B&W, sound.

ISBN 978-4901181389

Air's Rock

by Takahiko iimura

DVD, 1985-2008, 29 mins., 2008

Col., sound. $US60.00 (personal); $US250.00 (institutions)

ISBN 978-4901181396

Distributor: Takahiko iimura Media Arts Laboratory, http://www.takaiimura.com/

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Takahiro iimura is a senior figure among contemporary Japanese and international artists and has been working with film, sound and video since the 1960s. He was one of several Japanese who, coming from a 20th Century tradition of avant-garde intervention, contributed to the Fluxus group in the 1960s. The delicate nature of the analogue mediums of film and video requires that art works are now presented in digital format; over the last decade iimura has gradually been archiving his significant output to DVD and other mediums more durable than acetate and vinyl.

Previous reviews in *Leonardo* have been of work originating on videotape: *Observer/Observed* reviewed in *Leonardo* 35.1; and the documentary projects, *John Cage Performs James Joyce* (1985) and *Fluxus Replayed* (1991) reviewed in *LDR* February 2007. One of the DVDs in this review originate from 16mm film that brought to the fore the ontological project he has consistently pursued, described by Malcolm Legrice in his 1977 book, *Abstract Film and Beyond*

as being a "…detailed examination of our perceptual and conceptual mechanisms..." iimura's work with film-making was recognised at the 1963 Brussels International Experimental Film Festival; by the end of the 1960s he had begun to produce work with video and for the next decade moved easily between both mediums until the 1980s and 1990s when only one film but 32 videos were completed; two of these appear on the DVD *Air's Rock*.

Moments at the Rock was made in 1985 during a visit to Uluru, the monolith in Central Australia*. The video reveals the natural rock feature emerging from the darkness, whilst a pulsing sound measures time and changes in the image, a camera and a small screen becoming visible in the foreground. As the day becomes lighter and the camera operator moves in and out of the view, we become accustomed to the edifice and a series of incidents, either human, the ambience of the location or induced by the apparatus and system delivering the experience. The liner notes inform us that the system is based around a cheap domestic camera; picture break up, colour distortions, a jagged rendition of the pristine scene before it render an abstraction of time and space, and possibly mirror the mythologies that surround Uluru and the spiritual significance it has for indigenous people. But given the name and nationality of the artist, the significance of space and time, *ma*, in Japanese culture also becomes a resonance within the system of meaning. (Another of iimura's works, *Ma Space / Time in the Garden of Ryoan-ji,* explores links between film time and the famous five hundred year old garden in Japan). The longer piece on this DVD, *A Rock In The Light* (1985-2008), takes the footage gathered by the camera seen in the earlier video and using images of Uluru electronically superimposed inside the same image, but shot at a different time and combined with a series of slow dissolves, which again subsumes the famous image, placing it instead into the reflexive space of the viewer. With a soundtrack made by Haruyuki Suzuki, electronic sounds penetrate the space and follow the changes made in the visual element, as both accompaniment and commentary.

Sound and visual time signatures are encountered in the much earlier works *On Time in Film*, but these use no potent image like Uluru as counterpoint; the screened experience is just light and darkness. These works had a considerable influence when I first saw them during a festival in London during 1973, a version of them now on the DVD. A medium sized darkened room with film projector at one end and screen at the other and long loops of opaque 16mm film with clear frames cut into them. The title of *24 Frames Per Second* (1975) describes not only the rate at which 16mm film passes through the projector but also the schema for the progression of the film, understood during viewing as fractionally extending the durations between light and darkness before reverting to the durations between darkness and light.

This is a perceptually engaging process, experienced again in *Timed 1, 2, 3* (1972) when by counting durations, changes can be predicted by the viewer, becoming a kind of participatory game between filmmaker and viewer. Developing the theme in a later work, *One Frame Duration* (1977) the element of surprise is added; by not following a perceptible system, the change from light to dark, or dark to light, or from black and white to colour curiously comes as a shock, sometimes synchronising with a percussive sound. The extended periods of lightness have the added drama of dirt and hairs registering the 24th of a second basis of the filmic phenomena, as these random elements flick uncontrolled through the telecine gate, as the image is converted to bits of data.

These films, in being transferred to the digital domain, reminds us that whilst the conceptual genesis may be medium specific – the physical manipulation and preparation of the filmic material being sculptural in action, and its rendering through a projector being unique in visual and audio detail on every screening occasion – the conceptual comprehension of the experience, given reasonably similar projection circumstances, can remain in close proximity to the originals across the years that have intervened.

In the *Performance / Myself* DVD, the digital version shows us what audiences encountered when the seven pieces were first delivered with analogue video, with little sacrifice made to medium specificity; but the rigour is no less than with the films. When artists first starting working with video in the mid to late 1960s, the most popular object to point the camera at was, of course, the artist, him- or herself. These pieces, though we see iimura in them, are not personalised expressions about the psycho or physical state of the artist in private performance; they concentrate rather on the system of representation conveying the sounds and images and the spaces between artist, system and audience.

In the earliest work, *Self Identity* (1972), only one minute long, the basis of the investigation is setup, with his off screen voice alternately confirming his name that he has just stated to the camera. He returns to this some years later in *Double Identity* (1979) as he again confirms or denies his presence in the earlier piece, on the monitor by which he sits. In *Double Portrait* (1973) he processes, in sound and vision, similar confirmation and denials of identity, (in conjunction with his partner Akiko), whilst being seen from different quadrants through which the performers turn. *I Love You* (1973) employs similar systemic strategies, likewise using captioned subtitles to confirm or counter the heard assertions.

In these early days, video post-shooting editing was unsatisfactory compared to the cleanness of film editing and accounts for many tapes being unedited in the making of completed art pieces or editing done on-the-fly using some form of video switching or mixing box through which two or more close-circuit cameras (CCTV) could be recorded to tape. iimura's tapes essentially problematise the time intervals between what it is we see and hear; in other words it is not immediately evident whether a cut has been made after shooting or during shooting. The implication is significant in the exposition on time / space, viewed / viewing and place / location being presented. *I Am A Viewer, You Are A Viewer* (1981) returns to systematically exploring the state of viewing the works on video – but also by implication the act of viewing film – as an audience 'performing' the reflexive act, ending, "...you view yourself". The following year the performance develops and becomes a series of presentations in the public realm between 1982 and 1995. *This is a Camera which Shoots This* is enacted in a gallery space using a similar CCTV configuration seen in the earlier works. We see the artist but not until the end, as essentially it is the closed-circuit system being explored as a series of vignettes. In *As I See You You See Me* develops the theme in the same space with an audience present and visible; now the procedures draws iimura into sharing the space within electronic space as well as physical space whilst edits, mixes and superimpositions become part of the performance between cameras, monitor screens, artist (and off-screen assistant?).

These are complex works to describe in a short review, particularly as they rely so centrally on duration and the nuance of systems of visual and aural representation. Their migration to the domestic format DVD introduces an element of viewer control, not available in previous renditions of the work; the fast forward and reverse options provide the audience with a measure of interactivity with the work, thus providing further opportunity for reflection on the elements present. The sets of DVDs provide a vivid insight within the oeuvre of one of Japan's most influential artists and practice-based philosophers. The editions will of course when the time comes, need to be migrated by collecting institutions to next generation technologies. The hope is that this is undertaken with as much care and commitment as exhibited in the DVD collections prepared by the artist himself, Takahiro iimura.

Notes

* Formerly known as Ayer's Rock, the title of the DVD, Air's Rock, is a misspelling of the colonial name but a possible reference to the location, a place of wide open spaces.

Open Access

by Peter Suber

The MIT Press, Cambridge, MA, 2012, 230 pp.

ISBN 978-0262517638

Reviewed by Rob Harle
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This is a very important book, which, I suggest, is a must read for all scholars and researchers who publish their own work or consult the peer-reviewed published work of others––in other words, virtually all academics. As Suber notes, catching the attention of overworked, underpaid academics is a difficult task. Understanding the basics of Open Access (OA) publishing is not really a career option anymore but a core requirement. The time taken to read this well written rather slim volume will repay the reader many times over.

Open Access is not to be confused with Open-Source software or open educational resources. If you do not know the difference between *green* OA and *gold* OA, or the difference between *gratis* OA and *libre* OA then it will definitely reward you to find out, this book explains these modes of OA publishing in clear detail.

Peter Suber is a Faculty Fellow at Harvard; Senior Researcher at the Scholarly Publishing and Academic Resources Coalition; and Research Professor of Philosophy at Earlham College. He is known as the *de facto* leader of the worldwide OA movement. The book is divided into 10 sections covering all aspects of OA including; copyright, economics, future scenarios, policies, funding agencies and so on.

One does not need a crystal ball to see that the current *laissez-faire* capitalist economic model is no longer globally sustainable. Recent global financial disasters and difficulties indicate that a new sustainable model is urgently required. OA and OS are part of that new model and the rapid expansion and acceptance of these movements and associated practical outcomes is an encouraging sign. Very few would expect a company not to make a profit but it is the size of the profit that is the contentious issue. It is difficult to justify the outrageous cost of commercial Office Software Suites when OS applications, such as Open Office, are totally free, equally as good and completely compatible!

If you doubt the relevance of this obscene profit making to academic publishing, Suber presents the sobering fact that the largest journal publisher earned higher profits than the world's largest oil company, "In 2010, Elsevier's journal division had a profit margin of 35.7 percent while ExxonMobil had only 28.1 percent." (p. 32)

If this extreme profiteering is not distasteful enough and damaging for libraries and public knowledge, it is even more so because all authors provide their research papers at no charge to the publisher and generally relinquish copyright as well! My partner is constantly lamenting the fact that I get no payment for my peer-review editorial work nor for my own published academic papers. As Suber notes this is the way of the academy and has been so for close on 350 years. Academics write for impact and the advancement of public knowledge, not money.

Open Access as Suber explains throughout this book is really a win-win situation when analysed carefully and without being motivated by the agenda of greed driving publishing companies. This greed is holding back knowledge, reducing access by the smaller institutions to research findings and reducing journal subscription rates dramatically. Even Harvard and other top universities have had to clip their library budgets in recent years. With the Internet and electronic access one would expect the reverse to be true.

The quote below was included in an email I recently received from the *International Journal of Medicine and Medical Sciences* for a CFP. It illustrates Suber's thesis perfectly and indicates that the "writing is on the wall" so to speak for academic publishers who refuse to accommodate OA in their business plans.

"IJMMS is an Open Access Journal. One key request of researchers across the world is unrestricted access to research publications. Open access gives a worldwide audience larger than that of any subscription-based journal and thus increases the visibility and impact of published works. It also enhances indexing, retrieval power and eliminates the need for permissions to reproduce and distribute content. IJMMS is fully committed to the Open Access Initiative and will provide free access to all articles as soon as they are published"

It is interesting to consider that virtually everyone in society is hurt by unnecessary fiscal restriction to research papers and data. Advances in medicine may be held back because of lack of access, this affects those waiting for a cure for a disease as well as frustrating the researchers trying to find the cure. It is not only urgent high level research that suffers. So called, developing nations, have appallingly limited access to academic journals (and the Internet). A paper I recently peer-reviewed showed they have just as important and urgent cultural concerns as we do, in this case the destruction of their traditional buildings.

By insisting on (at minimum) *green* OA for your research papers and other published work the OA movement will gain more momentum and result in a better and more equitable world.

Looking for Bruce Conner

by Kevin Hatch

The MIT Press, Cambridge, MA, 2012, 418 pp.

ISBN 978-0262016810

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It may perhaps be true that Bruce Conner's contributions to the art of the last half of the twentieth century, and up to his death in 2008, are now secure. Still, as the first book that examines his oeuvres over the full course of his life, surely it will help in keeping him present for us – as he should be. For not only are Bruce Conner's works unique. They evidence an artist who eluded categorization, recreating himself several times, and whose verve inspires. You can find it in his assemblages, drawings, films, paintings, and conceptual works. You can also find it in his history, including the humoresque of his run for San Francisco Supervisor in 1967 with his cute baby photo on his election poster. Perhaps the 5000 plus citizens who voted for him knew something we don't?

A Wichita, Kansas native, Conner emerges elsewhere in that

"City by the Bay" during an intimate period of counter-cultural renaissance as the 50s turn to the 60s. His circle is diverse and prominent: poets Michael McClure and Philip Lamantia, artists Jay DeFeo and George Herms, filmmaker Stan Brakhage, to name a few.

Known initially for his assemblages, built up precisely from found materials --stockings, feathers, cardboard, bicycle wheels, wax, a distressed couch, what have you (prompted by his fascination with San Francisco junk dealers) -- their effect is savage and magnetic. After a time, ill content to keep running in place, he side steps the critical attention he has gained by turning to film, when the underground movement is first finding its feet.

His influence, again, is immediate. Commonly but not always using found footage, his first, discretely titled "A Movie," reveals an amateur with the eye of a master, and a cutting technique to match. Subversive visual rhythms pitched to near hysteria infuse "Breakaway," shot, as we are told, "in one long exhausting session" sans found footage. The ever-poignant "Report" captivates the Kennedy assassination. "Marilyn Times Five" portrays erotic obsession, his and ours. There is the terrible beauty of "Crossroads," an orchestration of a U.S. Navy sub-surface hydrogen bomb explosion, which fascinates each time I view it. Should I mention his collaboration with David Byrne and Brian Eno, "America Is Waiting," an idiosyncratic forerunner of music videos, and there are more.

With Conner, however, "more" is not simply quantitative but entails variety and space; a sufficient space in which to live on a page or canvas, for one. Throughout his years he composes inkblot and intricately detailed drawings, exhaustive efforts, the best of which have a rare and disturbing delicacy. Later he embraces collage, which evolve from a surrealist axis to a more personal and probing composite that refines external influence.

Kevin Hatch, who authored the study, concludes it by commenting on Conner's search for originality, his refusal to dance to the critical measure of his time, what that meant, and how he did it.

Independence, intimacy, and revelation are values that Conner lived by and that infuse his works, ever vibrant, funny, erotic, caustic, and elegant. If this study facilitates our engagement with them and their creator, then they will abide within and between us just that much more, a measure of our rapport with the world we face and the world we desire; a borderland that we cannot entirely possess.

Cinema's Alchemist: The Films of Péter Forgács

by Bill Nichols and Michael Renov (eds.)

University of Minnesota Press, Minneapolis & London, 2012, pp. 271

ISBN 978-0816648757

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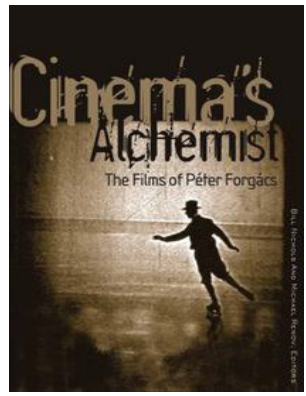

For a couple of generations worldwide, home movies and other films for private use were often people's first experience with moving images. This was—and perhaps still is—a distinct experience and quite particular practice, since each of these movies were by and large made and watched by the same people, usually recruited from a small, intimate family circle. Rather than having makers and spectators, home movies are as a consequence better characterised as having "participants", to use the term proposed by Roger Odin and Eric de Kuyper about these films. [1] For decades, moreover, this experience was enriched by the reduction prints, often in abridged versions, of commercially released films of all genres that were for sale on the home entertainment market; and in this context, such prints could also be used as 'stand-ins' for places or events a family had visited or witnessed. So, whether 'homemade' or purchased, the home movie, as practice and as experience, constitutes a significant

fact of film history. This in itself should be reason enough for a film archive to include home movies in its collections as one particular instance of cinema's many manifestations in terms of technology, use, purpose, venue or audience.

Yet with home movies a potential problem emerges. Because it is fair to expect (certainly in the case of publicly funded archives) that, once accepted as an asset to the collections, the effort and money invested in the preservation or restoration of these films must somehow be accounted for in public access and activities, including open screenings. But here, the routine, unproblematic asynchronism that recording equipment introduces may suddenly leap centre stage and cause a feeling of discomfort, as it now allows *unratified* spectators to inspect demeanours and interactions which they were not meant to witness (let alone participate in). This is not, of course, about looking at recorded improper behaviours (although home movies may contain those as well). Rather, this is about the clash between, on the one hand, the typical carefree-ness of home movies, the result of their specific participatory character and participants' willingness to play along, confident that the screening of the recorded antics will be restricted to their inner circle, and, on the other hand, about the impropriety of another category of viewers watching the films instead of them. This is what makes the access and exhibition of home movies both interesting and tricky for any archive that decides to keep them (and, in the absence of any policy, silent neglect is often the default solution).

Admittedly, this problem, this discomfort does not seem to be a widely felt obstacle to the reuse and appropriation of this type of film. De Kuyper writes that as home movies age they become historical or anthropological documents of "other times, other customs, other lives", adding that this is a recent shift, effected by the rise in audio-visual culture, particularly the "insatiable appetite" of television for images of the past. [2] As a result, more often than not the home movie images preyed upon by filmmakers or their researchers for historical programmes are subsequently pressed into service as mere lively illustrations for phenomena of much wider scope than most private footage ever laid claim to. Thus, in order to become historically or anthropologically representative images, home movies must effectively *cease* to be records of private life. To tell its big tales, the mainstream practice of 'devouring documentaries' obfuscates the nature of private film, if not the variety of cinematic practices *tout court* (the anecdotal character of much newsreel footage or the propagandistic aspects of many other 'factual' genres are often suppressed, too; in many cases, elision of the soundtrack suffices). For home movies, then, to be re-used while retaining their identity without causing discomfort, Odin has argued that a reframing, a shift in perspective has to take place. [3]

Cinema's alchemist: the films of Péter Forgács is the first English-language collection of essays devoted to the oeuvre of an artist who has built his filmmaking career on the reuse of home movies. [4] In his capacity as collector-archivist and found footage-filmmaker of these materials Forgács has evidently thought deeply about the problem of reframing, since he, too, deploys them within the framework of wider historical events: the social, political, military, cultural, and moral turmoils of Hungary and, in later works, of various European countries during the mid-twentieth century. Although his focus on home movies was partly determined by limitations on access and mobility, as we learn from Scott MacDonald's interview in the book [5], Forgács must have realised that the very concreteness of film images makes them fundamentally unsuited to show "wider historical events". (Mainstream compilation practice, therefore, usually resorts to the rhetorical figure of metonymy, making singular instances, with the help of narration, stand for complex and/or long-term processes and events.) The first two episodes of his Private Hungary series, THE BARTOS FAMILY and DUSI AND JENÖ (both 1988), were largely edited out of private materials in his collection, accompanied by his sparse narration identifying people, occasions, and locations, and aided by a few invasive measures (freezing, slow motion, etc.). But besides these measures Forgács, over the course of his filmmaking career, has with increasing sophistication and certitude combined other (audio-) visual materials with the home movie materials. As a result, he doesn't so much show historical events as evoke them by setting up relationships (of contrast, repetition, etc.) between the two types of materials. In other words, it is the *combination* of private films and other materials through which history is made, if not visible, then certainly palpable. In that sense, 'alchemy' is a very apt term for what Forgács has been doing.

The success of his reframing is to a certain extent reflected

in the lack of reporting on feelings of discomfort throughout the book. But it is not the same sort of absence of concern. For one thing, *Cinema's alchemist* largely consists of academic papers, written up after repeated viewings (albeit not always accurately reported) of Forgács's films—uneasiness, after all, is something one can overcome. More importantly, the interventions Forgács performs in his films on the materials he has collected circumvent, or preempt, that uneasiness. That may be the reason why Odin, in his essay a propos THE BARTOS FAMILY, can blithely write: "[I] n home movies, the characters look toward the camera, which is to say, toward us. Some of them address us directly." No, they don't; that's a delusion. We are looking at them, but they merely look (or rather: looked) toward the cameraman, toward a co-participant. If it were otherwise, he would have had no need to write at the end of the paragraph, "[E]ach shot ends with a direct intervention by the enunciator: a freeze-frame. Thus Forgács intends to signify to us that these social actors look at us (i.e. they concern us)." [6] Even then I doubt they do; I prefer to think that such interruptions of the flow of the subjects' activities allow us, today, to inspect their fleeting expressions and gestures for a longer time, so we can form an opinion about and become engaged with them and with the films they now form part of. As a matter of fact, they don't even have to literally 'look at us' to concern us. [7]

Odin's slipping on the freeze frame nevertheless points up the considerable work done, unlike the selection of 'significant' moments for your average historical TV compilation, to keep the materials in focus. Actually, while the measures Forgács has taken in his films are aimed to dissipate our discomfort, they also preserve the homeyness of the home movies, as their connections to the wider world, if any, are mostly incidental and untroubled. The first casualty of these measures are our own (received) opinions. A good example comes from his film BOURGEOIS DICTIONARY (1992), in which Forgács has subtitled a scene on the basis of lip-reading. What we learn is being said doesn't reveal anything significant beyond the trivial. But at the same time he has preempted our own stereotyping—our 'world knowledge'—and potentially easy dismissal of the people in the images as, say, self-satisfied bourgeois. He cleans the slate and presents them as everyday individuals. And then, when *he* links the films to the wider world, Forgács is able—in the words of Michael S. Roth, in one the most moving contributions to the book—"to preserve the ordinariness of his subjects even as he frames them in extraordinary times." [8] History is not permitted to overshadow the materials he has collected, excerpted, and recombined for his own films. (It should be said at this point, though, that this statement reflects the tenor of the book, in which private films that were made purposely for posterity are not considered. I think this does a disservice to Forgács's oeuvre, as it limits the range of materials he has worked with and misses the opportunity to deal with, notably, ANGELOS' FILM [1999], a work that contains the most remarkable and heroic instances of such filmmaking by Greek patrician Angelos Papanastassiou, scenes that were shot—and later, at the 1947 Nuremburg trials, indeed used—as evidentiary material of the atrocities committed during the German occupation of Athens.)

Although the papers in the book are of quite uneven quality, the most interesting contributions, along with Scott MacDonald's thoughtful interview and introduction to it [9], are about identifying and formulating the ways in which Forgács has gone about reframing his materials—their juxtaposition with voice-overs, more official audio-visual materials, and/or titles, etc.—in order to balance home and history, the private and the public, the particular and the general. A rough division can be made between, on the one hand, the essays by Michael Roth, Michael Renov, and Malin Wahlberg, who all tend to emphasise the nature of the reframing, the stuff the "rim of the frame" (Goffman) is made of: for Roth this is the notion of ordinariness and how it relates to the limits of the representation of trauma, the Holocaust in particular; Renov situates it at the intersection of the historiography of the Holocaust and the history of documentary, crediting Forgács with elaborating "the analytic and expressive functions of documentary [that] have remained largely underdeveloped." [10]; while Wahlberg's essay is rooted in the notion of indexicality and describes the arc of the trace as an ontological sign, of things "that-have-been" (Barthes), to one that, in an archival context, makes one aware of its fragmentary, essentially incomplete nature. [11] Kaja Silverman, Tyrus Miller, and Whitney Davis, on the other hand, tend to focus more on specific measures to realise these reframings. And it is, I think, no coincidence that the latter authors' essays are largely or wholly devoted to two of Forgács's works—the

abovementioned BOURGEOIS DICTIONARY and WITTGENSTEIN TRACTATUS (1992)—in which the process of reframing is taken to another level. That is to say that whereas most of his films are the result of reworking a series of home movies made by one individual or family, these two are based on a selective, reasoned 'catch' of his entire collection of home movies. Here, the excerpts remain anonymous in order to better function as the building blocks for a more reflective and reflexive approach to the materials. While both are camouflaged as categorical documentaries, BOURGEOIS DICTIONARY obliquely traces the gradual but inexorable disappearance, in fact and in historiography, of Hungary's Jewish population between the early 1930s and late 1940s, while WITTGENSTEIN TRACTATUS is, one the one hand, the pictorial half of a diptych with Wittgenstein's *Tractatus logico-philosophicus*, and, on the other, a meditation on the signification of moving images—most cogently summed up in a Wittgenstein quote from Forgács's narration: 'How hard it is to see what is right in front of my eyes.'

What is it, indeed? One may argue that the anonymity of the excerpts here takes us as far away from the sense of watching home movies as those that are compiled in standard TV documentaries. However, in these two films their very anonymity has two seemingly contradictory effects that serve one and the same purpose. First of all, it contributes to their individuality, because the excerpts are not made to 'agree' with whatever context they are inserted in. Instead they resist, not only easy historical interpretations, but also explanations of what they themselves are about, one reason being that we often have no way of telling what the subjects' own opinions were about what the world was doing or what they were doing. The trace they left is truly incomplete to the point of illegibility; any attempt at attribution is futile. And that, secondly, makes the excerpts impersonal. Forgács does not elicit our emotions and sympathies, at least not beyond the normal transcultural effect of identification. Emotions (discomfort, for instance) would stand in the way of engagement. Because, in order for his 'alchemy' to work, Forgács invites us to think.

One trace, though, is pretty clear. Like in most of his other films, even in these reflective, reflexive compilations the most unimaginable event of the European mid-twentieth century—the systematic eradication of the Jewish population, in Hungary and elsewhere on the continent—is always present, however inarticulate (while WITTGENSTEIN TRACTATUS is primarily a philosophically-based, cinematic treatise, the person Ludwig Wittgenstein, in Miller's words, "is a singular instance of the Central European Jewish bourgeoisie that constitutes Forgács's primary focus in his documentary explorations." [12]). Indeed, the absence of Hungary's history, particularly of its Jewish population, in the Hungarian public debate—as well as, of course, in moving images, being the most unsuited event of all—was an incentive to the making of these films. That, incidentally, makes Kaja Silverman´s argument to overcome archival hesitation and—wisely—re-use these potentially unsettling home movies so compelling. Their re-use, she writes, is not just "ethically justifiable", but "ethically *imperative*" (emphasis in the original), as "most of the people who appear in Forgács's source material have died twice—once physically and once mnemonically. The first of these deaths is irrevocable, but the second is not." [13] And it is the moral responsibility of our and later generations to do the remembering; another 'Lest we forget'.

Of course, that phrase is used in commemorations of a variety of traumatic events, from slavery to the First World War to 9/11. As Silverman's essay is part of the section 'The Holocaust films', it should go without saying that the systematic persecution and murder of Europe's Jewish population certainly makes the films' re-use imperative; and of course it contributes to Forgács's films' impact. But as dictatorship, war or genocide go on, the sense of unimaginable doom need not be unique to the films Forgács has collected or, for that matter, to other private films from that time. This type of film's very innocence of wider concerns makes one realise that any home moviemaker today may not know either what threats might be in store for him: everything always seems to happen someplace else. (Although, alternatively, nowadays there may be a simple division of labour between technologies: a home moviemaker today, in Iran, Mexico or Greece, may well reserve, say, his cell phone for recording *and* disseminating the things that he does know threaten his well-being or life.)

From an archival point of view, Silverman's exhortation, compelling as it is, still would involve ways of making spectators *want* to watch—and remember (and in her essay she describes two such ways). Paul Ricœur, quoted in the book, wrote: "The docu-

ment sleeping in the archives is not just silent, it is an orphan. The testimonies it contains are detached from the authors who 'gave birth' to them. They are handed over to the care of those who are competent to question them and hence to defend them, by giving them aid and assistance." [14] Forgács's extremely competent aid and assistance—creating emotional distance in order to engage today's spectator, combined with a thorough historical knowledge—is a model for archives (and TV programme makers) to emulate and come to terms with a type of film material, if not *types* of film material, whose (film) historical significance still suffers from unfamiliarity and uneasiness.

Notes

[1] Eric de Kuyper, 'Aux origines du cinéma: le film de famille', p. 16; Roger Odin, 'Le film de famille dans l'institution familiale', pp. 35-37. Both essays are published in: Roger Odin (réd.), *Le film de famille: usage privé, usage public* (Paris: Méridiens-Klincksieck, 1995).

[2] Eric de Kuyper, *op. cit.*, p. 13.

[3] Roger Odin, 'Reflections on the family home movie as document: a semio-pragmatic approach', in: Karen L. Ishizuka, Patricia R. Zimmermann (eds.), *Mining the home movie: excavations in histories and memories* (Berkeley-Los Angeles-London: University of California Press, 2008), pp. 261-264.

[4] A Dutch-language collection of essays was published on the occasion of awarding Forgács the prestigious Erasmus Prize. See: Max Sparreboom (ed.), *De kunst van Péter Forgács. Erasmusprijs 2007* * (Amsterdam: Balans, 2007).

**The art of Péter Forgács. The 2007 Erasmus Prize*

[5] Scott MacDonald, 'Péter Forgács: an interview', pp. 8-12.

[6] Roger Odin, 'How to make history perceptible: THE BARTOS FAMILY and the *Private Hungary* series', p. 139.

[7] I commented on this type of intervention in my essay 'No more holy innocents', in: *Cultural memory* (Amsterdam: Praemium Erasmianum, 2008), pp. 8-15.

[8] Michael S. Roth, 'Ordinary film: THE MAELSTROM, p. 77.

[9] Scott MacDonald, *op. cit.*, pp. 3-38. The editors failed to inform the reader that this interview was already published in 2005, in MacDonald's *Critical cinema 4: interviews with independent filmmakers*, at another press.

[10] Michael Renov, 'Historical discourses of the unimaginable: THE MAELSTROM', p. 92.

[11] Malin Wahlberg, 'The trace: framing the presence of the past in FREE FALL, pp. 119-134.

[12] Tyrus Miller, 'Reenvisioning the documentary fact: on saying and showing in WITTGENSTEIN TRACTATUS and BOURGEOIS DICTIONARY', p.179.

[13] Kaja Silverman, 'Waiting, hoping, among the ruins of all the rest', p. 102.

[14] Quoted in: Malin Wahlberg, *op. cit.*, p. 124.

Hiroshi Sugimoto: Memories of Origin

by Yuko Nakamura, Director

WOWOW, Inc., Japan, 2012

DVD, 85 mins., in English and Japanese

Reviewed by Giovanna L. Costantini

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Hiroshi Sugimoto: Memories of Origin, a documentary produced by Japanese television WOWOW, opens with the artist immersed in a reflecting pool behind a large format camera as he photographs "Infinity" (2006), an abstract aluminum sculpture commissioned for the Art Center at Château la Coste, France. From a spherical base in the water, it rises in perfect arcs to the sky where it dematerializes into space. Part of a body of work titled "Mathematical Models," it represents a transformation of mathematic and geometric principles into computer-generated solids produced from Japan's most advanced machining tools. Like his photographs of sculptural renderings of trigonometric functions in the series "Conceptual Forms" (since 2004), Sugimoto's interest in pure, elegant lines, starkly controlled contrasts, integrated design and stable form reflects his desire to create aesthetic models of reality, to concretize thought, and to render visible "invisible facts" as he calls them, internal to the artist. "His work expresses unseen objects, the world within the heart," observes Tadeo Ando, architect of the Château La Coste Art Center.

For over 200 days filmmakers followed Sugimoto across the globe, from the shores of his native Japan where he first began to photograph the renowned "Seascape Series," to his studio in Chelsea, New York where he is shown at work with his assistants. Positioned between two worlds, one deeply inspired by tradition, the other oriented towards the future, the film conveys the pristine beauty of Japan's natural landscape with its rocky bluffs and mist-shrouded mountains, as well as the soaring skyline of the modern metropolis, the built environments of New York and Paris driven by ambition, progress, and commerce. It is an intimate glimpse into the life of the artist, one in which Sugimoto speaks openly about his work and contemporary art. Interspersed with selections from his major photographic series, it recreates something of the artist's inner journey towards enlightenment, imbued with the past, inquiring of the present. "Thousands of years of human history are within me," Sugimoto reflects as he climbs a ladder to a promontory where he stands overlooking the sea and the horizon.

In the studio Sugimoto prepares films for his 2009 series "Light-

ning Fields," a dramatic body of monochromatic photographs whose effects recall the stunning calligraphic brushwork of Song Dynasty (960-1279) ink paintings. After years of painstaking trial and error with different metals and apparatuses under varying atmospheric conditions, he employs a 400,000 Volt Van de Graaf generator to charge a metal ball with static electricity. Polarized by metal plates onto which he positions large sheets of photographic film, he etches electrical currents emitted from an electrode directly onto a transparency. The sparks create intricate abstractions that give the appearance of meteoric showers, treelike branches, silken tendrils and the delicate vascular tissue of living organisms. Luminous, the images seem to exert a strange magnetic power over observers who draw to them as moths to a flame. In other studies, he discharges the electrical current into Himalayan salt water to produce diaphanous, ethereal effects of watercolor. As an experimental composer, he creates other impressions by chance, through tests with insulated instruments that include a fine mesh grill used to roast gingko nuts, a needle inserted through the end of a wooden stick, and kitchen implements such as wire whisks, egg beaters, measuring cups and slotted spoons. "Ordinarily it would be a failure, but it is interesting," he observes pointing to an effect of winter static in the corner of one of the works that appears to form a constellation.

In some works Sugimoto confounds perception as in his celebrated Diorama series. In these picture-box scenarios, reiterations of representational imagery in art, dead animals are juxtaposed with specimens that appear to be alive, each frozen, taxidermied, confined within the static displays of New York's Natural History Museum. The series questions relationships between natural and artificial environments, the real and the imaginary, through graphic contrasts that heighten tension between a sense of lifelessness and ferocity.

His later work focuses increasingly on the recovery of Japan's collective memory. In an antique market in Japan he holds a small handwritten text and ponders its scale. "If you read books, you only acquire knowledge," he says turning its fragile pages. "But you can feel directly from the objects. Obtaining the old books can give you so many things. Just knowing about them and actually feeling them are totally different. You experience the proportion of the objects, and it starts to sink in."

"It's like human wisdom," reflects Tadeo Ando. "He is uncovering human wisdom from 30 or 40 centuries ago and it is his intellectual world. I think people are strongly inspired by his intellectual world. He can see what we cannot see."

Self-taught in architecture, he attempts to revive Japan's lost architectural concepts through the reconstruction of an ancient Shinto shrine. Asked to rebuild the deteriorated Go-Oh shrine, whose origins date back to the Muromachi Period (1338-1573), he sought to recreate an "imaginary architecture" in keeping with ancient Shinto worship. "Animist worship," wrote Sugimoto, "was thought to have focused on sites in nature where some special quality or force was felt." In "Appropriate Proportion" (2002) he attributed the shrine's ineffable source of power to a giant rock. Since the shrine was comprised of three main parts, a Worship Hall, a Main Sanctuary and a Rock Chamber reminiscent of a tumulus, he dug out the underground chamber by hand so as not to disturb the ancient spirits. Into the chamber he then laid rough-hewn optical-glass steps to create a "stairway of light." Illuminated by the sunlight the glass stairs shine as crystal. They join the celestial and terrestrial worlds in a stream of luminosity.

In 2011 Sugimoto served as producer, composer, and art director of a revival of "Sonezaki Shinju" (The Love Suicides at Sonezaki) a play based on an original manuscript by the famous Japanese dramatist Chikamatsu Monzaemon (1653-1725). It was staged as a lost type of Bunraku performance, an ancient form of puppet theatre that originated during the Edo era (1603-1868), a period in which neo-Confucianism, ethical humanism, and rationalism flourished in Japan. It was also during this era that art rose to a high level of refinement through such styles as *ukiyo* (the floating world) of Hokusai (1760-1849). Bunraku combined chanters, Shamisen players and large puppets whose complex, expressive heads and hands were carved from wood and repainted before each presentation. Puppeteers operate in full view of the audience, garbed in black robes, some with black hoods over their heads.

One of the most compelling segments examines the artist's installation at the ruined Power House, on Cockatoo Island for the 17th Sydney, Australia Biennale. The site's haunting atmosphere of deterioration, corrosion and abandonment fascinated Sugimoto for it was a vast industrial complex that had once been filled with mighty generators,

steam engines, smokestacks, switches and electrical controls. Now the plant and its machinery lay buried under layers of dust as thick as volcanic ash. The surroundings provided an evocative setting for Sugimoto's sacred and profane appositions, his inversions of energy and inertia as positive and negative electrical charges. Against the shadows of engine rooms filled with steel equipment, Sugimoto's "Lightning Fields" flank a quasi-ceremonial stairway constructed in a series of stages with intervening platforms. The negative images of the "Lightning Fields" have been reversed to positives, illuminated by glowing light boxes. At the pinnacle of the stairway, a 13th century sculpture of the deity Raijin, God of Thunder, presides atop a high wooden column. He is fearsome, potent, animated by the same hidden forces that surge in Sugimoto's artworks as "sparks floating in water." On close inspection one sees incandescent, microbial images that the artist compares to sperm—recollections of beginning that Sugimoto finds very beautiful.

From a place on the coast overlooking the sea, Sugimoto inspects the site where he plans to build a Noh theatre. He wants to leave this theatre for the next generation so that persons may see and feel what he has experienced during his lifetime. Noh is a highly symbolic dance drama performed on an outdoor stage beneath a temple-like roof supported by pillars at the four corners. It is the oldest surviving form of Japanese theatre, originating in the fourteenth century when it was presented by male priest-performers attached to Buddhist temples. Derived from a term meaning "talent" or "skill," Noh survives today in much the same form as in the past with a repertory of traditional plays identified with Buddhist themes. The tempo of a Noh performance continually fluctuates in keeping with the Buddhist view that the world is in a state of continual flux. Comprised of choreographed elements and stylized costumes, the main character wears a mask imbued with magic power. Expressing a powerful, all-encompassing emotion that builds to a climax at the close of the play, the mask is meant to conceal individuality. It elevates the play's main action beyond a presence in this world to an otherworldly dimension.

As an historical personage in Noh theatre who returns to the world to find spiritual release after death, Sugimoto returns to a cliff overlooking the ocean that holds deep significance for him. It is a site of memory where he remembers a train ride he experienced as a child in which he emerged from a tunnel to glimpse the sea:

"When I trace back that memory," he recalled, "I realized that it was my very first memory of my life. At that moment I thought, 'Oh, I do exist.' Consciousness of being alive emerged. Until then, everything was vague; I had no consciousness of my existence. So the vivid memory of the ocean had a certain impact that I still remember. The consciousness of being alive is the birth of awareness, of my being as an entity. But when we see it on a long clock, this awareness is the same as the evolution of human beings, evolving from apes to people. I came to the realization that I was alive. It also made me realize that I would die some day. So I thought, 'Is there anything worth doing in my life?' The last phrase in the medieval epic *Heike Monogatari* (*The Tale of the Heike*) was great, when they fall in battle at 'Dan no ura.'"

"We see what must be seen and disappear in the sea."

Radio: Essays in Bad Reception

by John Mowitt

University of California Press, Berkeley, CA, 2011, 248 pp.

ISBN: 978-0520270497

Reviewed by John F. Barber, Washington State University Vancouver

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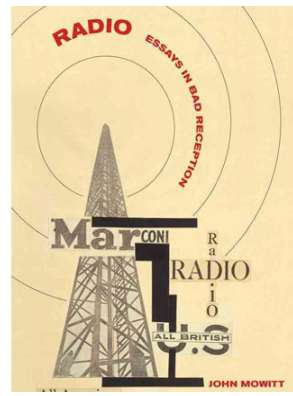

Studies of radio, a technology for the broadcast distribution of voice and other aural content wirelessly across distance, have historically focused on the medium, or the history of that medium. *Radio: Essays in Bad Reception*, by John Mowitt, breaks this tradition and looks at radio as the effect dissemination of voice and other sounds across radio networks has had on modern conceptions of community and the transnational, historical dimensions of broadcast culture. This new approach moves radio beyond a mass medium of seduction and manipulation, common themes in current media studies programs, and broadens its examination into areas such as cultural studies, communication, and history of technology.

As a founding technology for the twentieth century, radio has drawn the attention of theoretical and philosophical writers such as Jean-Paul Sartre, Walter Benjamin, Jacques Lacan, Frantz Fanon, Martin Heidegger, Theodor Adorno, and Raymond Williams. All have used radio as the focus for their ideas and/or reflections regarding how and why radio has come to matter, particularly politically, to phenomenology, existentialism, Hegelian Marxism, anticolonialism, psychoanalysis, and cultural studies. Mowitt examines this central role of radio in the history of critical theory through the lens of the relationship between philosophy and radio, the first such endeavor, seeking to position radio as a cultural technology and an apparatus with a social and political history. In short, he sets out to study scholarly interest in "the object of radio studies" (3).

Each of the book's six chapters are essays or "thought experiments" in which Mowitt attempts "to trace how the problem that is radio arises within and between various philosophical and theoretical projects" and examines how thinking about radio "produces effects that not only scramble intellectual alliances but also the sociohistorically given contours of intellectual life" (16).

Chapter 1, "Facing the Radio," articulates an array of contacts, both in agreement and not, in the areas of philosophy, politics, phenomenology, physiognomy, and psychoanalysis.

Chapter 2, "On the Air," examines the interplay between using radio as a means of philosophical / political communication and as a provocation to philosophical / political thought. Specifically, Mowitt examines the problem posed by radio for Marxist philosophy as seen through the confrontation between George Lukács and Jean-Paul Sartre and the collaboration between Bertolt Brecht and Walter Benjamin.

Chapter 3, "Stations of Exception," uses Frantz Fanon's essay, "Here Is the Voice of Algeria," to examine the role radio has played in decolonization movements in Africa and elsewhere. Here Mowitt argues that we must think about the status of voice in political confrontations, especially when discussing communications.

Chapter 4, "Phoning in Analysis," examines three sites of encounter between radio and psychoanalysis: Erich Fromm's role in the Princeton Radio Research Project, two radio lectures by Jacques Lacan, and statements made by Féliz Guattair regarding free popular radio stations, particularly the Bologna-based Radio Alice. The result is "a twisted set of queries about the conditions, the channels, of psychoanalysis and psychoanalytic teaching" (17).

Chapter 5, "Birmingham Calling," examines, again, Marxism and philosophy as part of the role radio played in the founding of the Centre for Contemporary Cultural Studies at Birmingham (England). Again, the power of radio is questioned with regard to its abilities to transform organizational structures of humanistic knowledge.

The final chapter, Chapter 6, "We Are the Word," examines the Modern Language Association's foray into radio, "What's the Word?," prompted by attacks on the organization by culture wars conservatives. Mowitt tracks the relation of radio to education by the philosophical and political problems discussed in previous chapters.

Throughout, Mowitt does not attempt to replace the earlier thinking, theories, or intellectual practices about radio with later, more current conceptions. Instead, he seeks nuances of language and definition that allow the continual examination of how the earlier remains active in the later. The various rhetorical and expository shifts in his writing as he switches fields of discourse, audience, and register are intentionally mimetic of tuning a radio, seeking better reception beyond the noise of feedback and static. This "bad reception" says Mowitt, results from being either too much inside, studying radio as an object, or too much outside, studying radio as a technology. The proper placement, he argues, is in the middle where it is apparent that radio is calling out for more. But what? Mowitt's text is a response, "trimmed to the shape of the letter(s) of that call" (21).

The Koran: The Origins of the Book

by Bruno Ulmer

Icarus Films, Brooklyn, NY, 2010, 52 mins., col.

Distributor's website: http://www.icarusfilms.com/new2010/koran.html.

Reviewed by Jonathan Zilberg, Plymouth University

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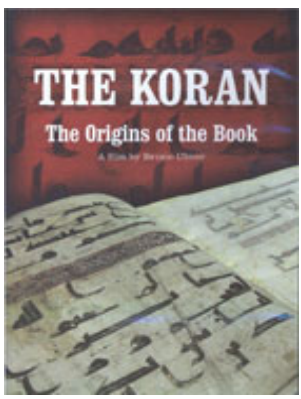
Essential viewing for anyone interested in the history of Islam, the purpose of this film is to make public the study of the earliest period of the canonization of the Koran and specifically to document a collaborative manuscript preservation and research project underway in Germany at the Corpus Coranicum under the direction of Angelika

Neuwith in collaboration with Francois Deroche and Immam Ferid Heider. [1] This fascinating story begins in 1972, after an earthquake in Yemen in which the ancient mosque of Sana'a was partially destroyed. Hidden behind a wall, revealed in the debris, was a collection of pages and fragments of Korans dating back to the first century of Islam. The radical significance of these fragments is that they predated the standard version of the Koran known today and that they were different. As the Koran is understood to be the unchanged original written record of the revelations received and communicated by the Prophet Mohammad, the film treads as gently and respectfully as possible on such dangerous hallowed ground.



The Prophet's continuous revelations began in Mecca in 609 and continued for the next 23 years until his death in 632 CE. The Sana'a fragments that are at the heart of this film's genesis date back to 680 CE––that is, within the first half century of Islam. They show not only how the sequences of revelations, the paragraphs known as *suras*, differed but also how the original texts were in places edited by covering over and changing words. While the latter potentially theologically seismic detail is not explored, nor the nature and content of the many *suras* that were not included in the standard Koran but some of which survived nonetheless, these are the kind of extraordinary details revealed here. They will tantalize the scholarly viewer, particularly those with historical and hermeneutic interests. The film will be sure to inspire considerable debate on the historical diversity within Islam and can be exceedingly useful in any introduction to the history of texts and doctrinal conflicts in world religions.

Two fundamental problems, however, bedevil the film. First, the notion that there is a difference between Western scientific study and Islamic scholarship repeats itself throughout the film almost as a matter of principle. While non-Muslim Western scholars are represented as rational scientists capable of "scientific analysis", that is value free analysis, Muslim scholars are, to put it bluntly, portrayed, even by themselves, as incapable of rational, scientific study of these new documents recording the earliest history and diversity of the Koran. Second, at no point in the film is there any recognition of the issue of interpretation. Not only are these serious issues for academics interested in Orientalism, colonialism and hermeneutics but also the latter is an arena of major contention in the Muslim world. As no Muslim scholar is on record in this film commenting upon this evolution or on matters of interpretation, one gains the impression that in the Muslim mind (an extraordinary idea in itself of a unitary and essentialized Other) it appears unimaginable that one could question the canonical version of the Koran or disagree about the nature and structure of the content. These criticisms aside, the film succeeds admirably in conveying a sense of the intense religious devotion Muslims have for the Koran.

To end on the subject of art, science and religion, the film provides tantalizing glimpses into the ecumenical history of Islamic civilization in terms of the decorative arts and architecture. [3] For instance, in some of the illuminated pages of the Koranic manuscripts found at Sana'a, the border elements clearly reference architectural details of the Great Mosque of Damascus particularly the ornate hanging lamps. We also learn here that in the Umaayad period when Abdul Malik designed iconic Islamic buildings such as the Ummayad Mosque, Byzantine Christian craftsmen were employed in the construction and decoration of mosques. The consequence was that the Christian mosaic tradition extending back to ancient Greece entered into Islamic architectural history. One would naturally want to explore the history of other design and material traditions such as that of stained glass and whether they are part of this particular decorative arts fusion. Lastly, there is an even more powerful example of the shared history between Islam and Christianity in which we are able to see how the tomb of Jahya (John the Baptist), the Church of St John the Baptist, has been incorporated into the center of the Ummayad Mosque and venerated by Muslims ever since. In all this the film has enormous potential for inter-faith discussions above and beyond its value for teaching about the history of Islamic religion and civilization, art and architecture, and bookmaking. One of the greatest values of this film then is how it takes both Muslims and non-Muslims, theists and atheists, into deeply

sacred spaces that one would never have otherwise been able to enter, the pace serene, the images as beautiful as the music and recitation, the echo of the revelation gently reverberating across time and into the future.

Notes

[1] See Tom Holland. "Where Mystery Meets History." *History Today*, May 12, 2012, Volume 62, Issue 5, pp. 19-24. For exceptional elaboration, see the multiple articles in "Aux Origines de Coran", *Religions & Histoire*, Janvier-Fevrier 2008, No. 18, pp. 12-65 and Pascal Buresi, *Histoire de l'Islam*, Juillet-Aout 2007, Dossier no. 8058. Also see the *Encyclopaedia of the Qur'an Online*, 2007, Brill Online Resources.

[2] See *Dangerous Knowledge: Orientalism and Its Discontents*. Robert Irwin. 2006. Woodstock: The Overlook Press.

[3] See *Islamic Art*. 2001. Florence: SKALA and "From the Prophet to postmodernism? New world orders and the end of Islamic art", Finbarr Barry Flood in *Making Art History: A Changing Discipline and its Institutions*, ed. Elizabeth Mansfield, pp. 31-53. Routledge: New York.

Trade of the Tricks: Inside the Magician's Craft

by Graham M. Jones

University of California Press, Berkeley, CA, 2011, 308 pp.

ISBN 978-0520270466

Reviewed by Brian Reffin Smith

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We are fooled no longer by magic, we suppose. We know that it is applied psychology. Unless we are extremely innocent, we look left when the magician would have us look right. We keep our eye on the ball even when apparently far more interesting action is happening in the hat. We know that we must, as quickly as we can during this performance, suspend, reverse, question and deconstruct our normal ways of looking at the world, at least if we are to have a hope of working out how he or she does it. But we almost never succeed. Even if we know for sure - we suppose - *what*… that at *this* moment, he is really doing *that* in the other hand, we still cannot see *how* it is done.

And so, despite our cunning, despite many magicians even playing with this, giving us meta-level or false distractions and signs, clues that are not clues but then again might be, even *telling* us not to be distracted… despite all this, we end up where and what we were before, lost and suckers.

Only once have I been able - I supposed - to work out in real time what was going on. It was on a TED video of a magician, who moved his hands over a person who couldn't see the movements, and the person told us what the magician had done. I saw the performer rub his hands on his jacket just before, and assumed that there must be static electricity involved, making the participant's skin tingle or hairs on her arms stand on end. Then - the so-and-so - the magician did it in a way that showed it could not possibly have been done like that, and I was curiously relieved.

There are several books, and numerous articles in the scientific and popular press, on how cognitive psychologists, not to mention the intelligence services, are learning from and collaborating with magicians, who have insights into our ways of making sense of the world that conventional investigators might not. This book does not address that issue directly, but rather returns to the craft, illuminated by a psychological and, especially, anthropological approach. And this is excellent, because surely we are, in 'reality', in so many areas of our lives, research and art, bouncing back and forth between the how and the what, the theory and the practice, always knowing we need both, always able to focus only on the one or the other, grooving round the circle or, better, spiral of deduction and induction, the old separation. The magician… ah! The magician knows this! The magician can multi-task! She has realised the alchemists' dream, and reunited opposites in a sparkling flash of gold, or at least iron pyrites, fool's gold. The inner becomes the outer, the male and female are (re-) united, heaven and earth are no longer rent asunder, that which was concealed is made visible whilst that which was in sight disappears and the rabbit was in the hat all along, except, no, it couldn't have been. Or, to return to a recurrent theme of these reviews, perhaps not a rabbit in a hat but a cat in a box, you know which one I mean.

The Trade of the Tricks, subtitled 'Inside the Magician's craft', involved its author living with the tribe, as some anthropologists insist one should. He apprenticed himself, met many magicians, did shows, and became a member of the Fédération Française des Artistes Prestidigitateurs, for almost the entire story is set in France, one of the main centres of old and 'new' magic, with sometimes firm support from the Ministère de la Culture.

The book is full of delights of the tricks, in many senses, of the magic artists. They cunningly steal, dissemble, hide, and flaunt their mysteries (how unlike other artists, not to mention scientists). They endlessly discuss magic, to the point of entirely ignoring performances

to sit at the back manipulating coins or cards.

One of the 'new' magicians (though with a long working history) he discusses is Abdul Alafrez, whom I had the privilege of inviting a couple of times to the art school in which I taught in France where he stayed for hours helping the students in a makeshift but astoundingly effective magic workshop to partially disappear. He also uses computer programs, advanced technology of all kinds, and has worked with musicians, theatres, opera, scientists and artists: this book not only fascinatingly lays bare the craft, mores, sociology, anthropology and tendencies of magic; it also reminds us how magic, in numerous ways, can inform the whole gamut of fields in which *Leonardo* readers might be interested. It's also quite funny.

New Art/Science Affinities

by Andrea Grover, Régine Debatty, Claire Evans, Pablo Garcia, Thumb

Miller Gallery at Carnegie Mellon University + CMU STUDIO for Creative Inquiry, Pittsburgh, PA, 2011, 190 pp.

ISBN 0977205347

Reviewed by Brian Reffin Smith

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Most of us have too many ideas and not enough time. We perhaps tend to shy away from books that are surveys or collections of art or technique in our field, fearing distraction or disappointment. This would be a mistake were the book to help us see our own ideas from a different perspective, able to be realised in new ways. My definition of a good art show is one which makes me want to run home and do work, perhaps unrelated directly to the exhibition's contents. 'New Art/Science Affinities' is a book that made me want to do new, and revisit old, things.

New Art/Science Affinities' is jointly published by The Miller Gallery at Carnegie Mellon University and the STUDIO for Creative Inquiry. It is a 'sprint book', written and designed in one intensive week by Régine Debatty, Claire L. Evans, Pablo Garcia and Andrea Glover, with designers Luke Bulman and Jessica Young of Thumb.

No space here to list the sixty-odd artists and collaborations covered, some well known, some not, and anyway that's not really the point, which is that from postnatural history to Maker works, from politically infused digital art to rendering incinerator pollution visible by lasers, from tissue culture as art to real snails carrying real snail-mail, from hacking and subverting newsfeeds to Arse Elektronika (sic and LOL), the book is quite subversive, very stimulating, and perhaps slightly too skewed towards the natural sciences: one might have wished a bit more from collaborations with physics, mathematics, materials science or research *qua* research. As a 'snapshot' created on the run over seven days, it necessarily portrays a quite particular moment and choice. Still: an excellent read.

The design really is excellent - a most interesting and useful (and deeply subjective!) timeline of art and science intersections is printed on warm, yellowish paper that lends everything an air of retro and up-to-dated-ness at the same time, and I guess that's about right. One does, as so often, miss an index; but given the draconian time constraints and the absorbing and provocative (rather US-centred, though trying not to be) timeline, it isn't the end of the world in this case.

What's more, if you don't buy the book (available from Lulu but at 45.75$!), you can download the PDF file for free (quite legally - they make it available in this form): just look for the title in a well-known search engine.

Alien Phenomenology: Or, What It's Like To Be A Thing

by Ian Bogost

University Of Minnesota Press, Minnesota, MN, 2012, 168 pp.

ISBN 978-0816678976

Reviewed by Brian Reffin Smith

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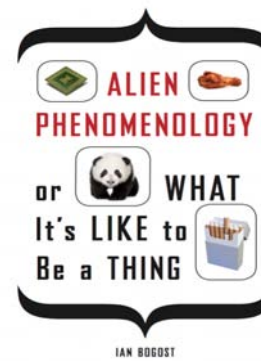

Well, the things they say! Do we attend enough to things? Or to change the emphasis, do we pay enough attention to *THINGS*? No, it still doesn't really work. So used are we to dealing, in normal discourse, with things as just stuff, that the title of *Alien Phenomenology or What It's Like To Be A Thing* comes as an almost transgressive shock.

It goes skipping over living graveyards, shorn of the dead, bats on past the philosopher's *Fledermäusen* and past post-humanism.

Connected to the pleasingly named OOO or Object Oriented Ontology, Ian Bogost's book makes us re-examine our philosophical relationship to that part of the universe that is not the minuscule 'us'. For those who thought it was a bit of a stretch to include (just some?) animals, systems and artificial intelligences, it may seem absurd - or in this reviewer's case delightful - to happen again and again in this text upon lists of things that demand, Bogost argues, to be seen as perceiving and interacting, even if he has to use metaphor to do so. But as Gregory Bateson used to argue, we need to see computers as metaphor machines, able to handle syllogisms such as 'Men die, grass dies, so men are grass'. He told me he wanted a 'computing Greek, not Latin', the latter being perhaps too pornographically meticulous. As professor of digital media at Georgia Institute of Technology, and as a video game designer, Bogost may naturally want his ideas to be seen in virtual worlds. But it goes beyond that, beyond 'mind and nature' so to say, back into - I was going to say 'our world' - the world of things. And that 'back into' is just me being human about it, because of course logically there would be no such distinction, though some things are more equal than others.

If we read just a few of his randomly or carefully chosen names of things, we are forced, again rather joyfully I find, to consider plumbers, cotton, bonobos, DVD players and sandstone, or the unicorn, combine harvester, the colour red, methyl alcohol, quarks, corrugated iron; bats (Nagel's 'What is it like to be a bat?') are "both ordinary and weird, but so is everything else: toilet seats, absinthe louches, seagulls, trampolines." Especially when you read this book. Just as the word 'hetereological' (words that cannot refer to themselves: is heterological heterological?) looks more and more alien the more you consider it as a thing in itself, this text alienates every thing, in a good way.

He also wants us to do and make things, to become practicing philosophers in the sense that a doctor would be no good if she just read textbooks. I am dusting off my old Meccano (Erector Set) collections and seeking exploded diagrams of anything, or any thing, not to understand how a submarine or iPad works, but to marvel at the thingness. But does part A27 love, or do harm to, or appreciate part C7? Is it ethical to screw in a screw? Anyway, ethics is itself a 'hyperobject', 'exploded to infinity'. There is no panpsychism here, for it all comes down to nothing/everything, unless you want to postulate the Higgs boson as a unit of consciousness, and let's not.

Of course, we are not really insulated from the idea that things have things to say and do - eighteenth and nineteenth century stories told by household objects*, 'I am a camera' etc. - but these are really saying things are 'like' other things. This book is different, for it asserts that everything, perhaps even that which does not exist, and certainly including us, is alien and metaphorical. As he proposes, it's not turtles but metaphors all the way down.

You might like or loath Bogost's possibly over-heated but apparently necessary use of metaphor and simile in his argument - roasted chilies lose their skins and are like the wounds of Christ, gypsum dunes resembling a white shoreline in a Žižek daydream never reach the sea - is the Baroque elaboration making up for the absence of a tune? - but if you want to see what the OOO Zeitgeist is about, and be jolted out of human-centred complacency, this might well be the book to read. The pilot of a crashing aircraft is encouraged by air traffic control to "Say your souls, say your souls" (i.e. how many on board?). Well, the things they say! Perhaps we should say our things.

There are useful notes, a bibliography and, for once, a good index.

* They are called 'it-narratives': *The Memoirs and Interesting Adventures of an Embroidered Waistcoat* (1751), *A Month's Adventures of a Base Shilling* ([c.1820]), *The Life and Adventures of a Scotch Guinea Note* (1826) - it was almost always 'adventures'.

When Biometrics Fail: Gender, Race, and the Technology of Identity

by Shoshana Amielle Magnet

Duke University Press, Durham and London, 2011, 224 pp.

ISBN 978-0822351351

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Biometric technologies used for the confirmation of individual human identity, are a persistent example of a technological

vapourware, probably more familiar to most of us from science fiction than from their slow increase in use in personal travel documents, such as passports and fingerprint locks on cars and laptops. However, particularly in the post 9/11 United States, the biometrics industry is currently expanding, landing multi-billion dollar contracts in border control, adding to its existing footholds in law-enforcement, welfare, and prison management. Focusing on five main themes surrounding the technology, *When Biometrics Fail* provides an historical overview of the growth of the industry since the 1970s. Using evidence from a range of contemporary sources, journalism, media and recent research published on biometric technologies, Magnet demonstrates rather compellingly how these technologies fail to live up to Daston and Galison's (2007) concept of 'mechanical objectivity,' the idea that machines are capable of making unbiased judgements owing to the privileged link to the physical world (and lack of subjectivity) with which they are associated by marketers, computer scientists, politicians, and the media.

To this end, *When Biometrics Fail* offers a damning analysis of the technical problems that dog biometric identification, many of which stem from the premises on which individual difference is defined. Magnet explores the implications of these limitations with reference to the range of sites in which biometric technology has been implemented, exploring the social problems that it is posited to be able to solve and showing that in many cases its effect is only to hide, or exacerbate, these problems. As Magnet argues, biometrics fail because they are discriminatory both in the methodology used to identify individuals and also in the social implications of the manner and sites in which it is implemented (prisons, welfare, border control). Further, there is a wider and deeper problem throughout that cannot be separated from the bias of the users of the technology. This is that the basis of the whole enterprise is on the false premise, the idea that the biological body can be fixed upon as an enduring, digitisable, and recoverable document, an idea that has been challenged in the scholarship of thinkers like Donna Haraway and Judith Butler and invoking the critical concept of 'corporeal fetishism'. It is this model of biological identity as an essential and fixed quality that is both out of date in so far as the humanities have understood the body for considerable time (notions such as gender are no longer considered only biological rather than performed) but also positions the body as a commodity.

In four short chapters Magnet makes clear the practical impact of these assumptions and faulty models of biological identity, both dated and troublingly linked to discredited scientific ideas of biological race and practices of profiling and reading the body such as physiognomy. By discussing these assumptions as they manifest in the way in which biometrics are applied, Magnet identifies a range of cultural problems that stem from the acceptance of the technology as a cure-all. She is also not slow in pointing out that the research in this area is painfully unaware of how out of date its approach is; the concepts that she draws upon to question it are now basic to the canon of gender and technology studies. In addition to this, the models of objectivity that these technologies invoke in order to state their authority are long discredited and highly simplistic in scientific terms.

The opening chapter analyses what can be seen as broadly discriminatory aspects of how biometric recognition is achieved. One example, retinal scanning, is only effective on light coloured eyes because of light reflections in darker corneas that interfere with the camera's view of the veins in the retina, making the technology as it has been developed in Western laboratories, biased in favour of a particular population. Magnet very effectively places a number of these problems that seem to constitute in-built biases in the technologies, in contrast with the arguments of industry professionals and law enforcement officers automated biometric systems are superior to humans because they are unable to discriminate. Technical limitations that are easily brushed under the carpet in a scientific lab or paper, take on a life of their own when the technologies are implemented, and the assumptions that underlie them are played out in the real world. In an analysis of the techniques of biometric identification, the apparent naïveté of current research and biometric identification techniques shows the extent to which cultural assumptions and essentialist para-

digms underlie the methods by which researchers identify and train systems to make identifications. For example, the use of 'soft' biometric differentiators, i.e. sex and race, invoke what appear to be extremely limited ideas about which detectable characteristics might offer evidence of male or femaleness, such as hair length, and signifiers related to dress and other markers of gender (such as an individual's décolletage and the amount of skin showing or wearing a tie).

Magnet also discusses the industries' exploitation of U.S. prisons as a testing site for the implementation of technologies like hand geometry scanning. In a chapter titled "Acres of Skin" (after Allan Hornblum's 1999 text on the exploitation of American prisoners as medical research subjects from the 1940s to 70s) she discusses how this method of counting prisoners (an activity undoubtedly carried out for their own safety as well as keeping track of their whereabouts) interferes with prisoner's rights to refuse to give biometric data but also results in prison spaces where the watcher is no longer human and no longer able to infer that prisoners are protesting, hunger striking, depressed, or sick, or even (as familiar from science fiction, and as Magnet tells us, in recent crimes) still attached to the body part being scanned. Another case study shows how the industry has targeted another state apparatus to which another large population is subject, the U.S. welfare system, with the implementation of mandatory fingerprint scanning in a number of states. Superficially the goal of this has been to reduce the number of individuals making multiple claims for assistance and have on the surface appeared successful. Enrolment in the benefit system has dropped. However, as Magnet points out, this change has been argued to be a result of the discrimination against immigrant populations who are unwilling to submit for fingerprinting because of fears that this will interfere with their applications for permanent US residency (p.88). Therefore, the apparently unintended side effects of implementing these technologies appear to have a far less 'objective' and non-discriminatory consequences than their supporters argue.

As Magnet describes it mechanical objectivity is "a visual trick to hide subjectivity from view" – a subjectivity that is associated with discriminatory bias (a bias which she points out appears with the introduction of new anti-terrorism laws post 9/11 to have become more and more clearly detectable in the attitudes and behaviour of both UK and U.S. police). The ideal of a machine system that can identify both individuals and specific traits without the involvement of a potentially biased human observer is one that, as Daston and Galison (2007) tell us, a notion was historically short lived in much of the sciences; she does not note, although it is an observation often made by those studying a range of imaging technologies focused on the body (Dumit, 2002; Saunders, 2008; Joyce, 2009), and that this ideal of objective machines is regularly invoked by developers, users and salespeople.

Some aspects of this critique could be explored further, and the text offers much evidence that would support further meta-analysis, particularly in terms of how the technological functions of biometrics are understood. While we might accept that subjectivity invading the process of identification is a failure of the technology, an anti essentialist position would question the legitimacy of any technological system of categorisation that makes a claim to truth. In the case of biometrics, identification technologies offer a trade-off between what is affordable, possible, and pragmatic, which can be enriched or limited by ideas of what can be mapped onto or discovered as manifest in the body. In particular, the concepts of power and institutional control that themselves impact on the way in which these systems are understood, interacted with, or resisted by their users that seem central to this discussion are not invoked as often as they might be.

The synthesis offered by *How Biometrics Fail* suggests a further reappraisal on philosophical terms of what these technologies actually are, how they factor into human action and experience as well as being themselves expressions of a particular way of seeing. The book, therefore, offers further compelling evidence of the entanglement between the social, ideological and imaginary functions of technical systems and their purported use, but apart from its discussion of the transformation of the concept of the international border, generally it does not offer an alternative understanding of biometrics, taking them only at face value, as technical devices, and not repositioning them as the manifestations of particular set of ideas or desires on the part of their makers and users.

Magnet argues in her final pages that biometric technology does not need to be perfected, because it cannot ever achieve what it claims, to map a range of cultural ideas onto a biological, but ever changing, body. This

is where the thrust of the book, and its intervention lies, not in discussing the technical failures of biometrics, but in identifying some of the key and catastrophic problems caused by a partially fictional technology that claims to do the impossible. The result is a useful synthesis of the activities contemporary biometric industry, providing a compelling dissection of how the idea of a science of biometrics fails, and a timely critique of an industry and its claims which exploit a misconception about the human body and use technological fetishism to posit the solution as a high tech – and therefore ethically unproblematic -solution to a range of problems that have serious political and humanitarian consequences.

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3-D Displays and Spatial Interaction, Vol. 1 From Perception to Technology

by Barry G. Blundell

Walker & Wood Ltd., Auckland, NZ, 2011, 391 pp.

ISBN 978-0473177010

Reviewed by George Shortess

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This is the first volume of a monumental work that crosses a number of disciplines as it provides the basis for understanding 3D displays. My perspective for this review is as a vision researcher who has done research on binocular systems and a visual artist who has been working with computer systems for many years.

The overall organization and approach to the material is excellent. After presenting a general overview of the topics to be covered, the author discusses the basic physics and physiology of the visual system. In a very helpful style that is carried throughout the book, he presents the essential information and then provides references for those readers interested in pursuing particular topics further. For example in Chapter 2, on visual perception, the author covers a great deal of background material, emphasizing those aspects that will be most relevant to his later discussion of 3D displays, while giving references for the reader who is interested in other aspects of perception or who may not have the necessary background.

The level of presentation, while giving some detailed and technical accounts, does not get lost in jargon. It is written in an intelligent and engaging style.

I also appreciate very much the author's use of history. He points out and gives credit to early workers who, while they did not have the technology of today, understood and made use of the principles to create image-making devices that are the forerunners of some of today's more advanced technological systems. A good example is in Chapter 7 when he discusses Pepper's Ghost that made its first appearance as a theatrical device in the 1860s. It involved using a large glass plate onto which ghostlike images were projected such that they appeared from the audience perspective to be on stage. Since they were images and not solid forms, they could be made to appear to pass through solid objects. More recent adaptation have used the same optical principles but with digital projection and with plastic film replacing the large breakable glass. This historical approach emphasizes the principle that science and technology are incremental and that to understand and to appreciate current technology we need to know its history. This also allows the book to remain a valuable resource, even as the field naturally moves ahead rapidly.

Anyone interested in gaining a firm understanding of the current practice of 3D display technology would find the book a great beginning. I highly recommend it.

Lines of Control: Exhibition at Johnson Museum

by Iftikhar Dadi (Cornell University) and Hammad Nassar (Green Cardamom), Curators

January 21 — April 1, 2012

Exhibit website: http://museum.cornell.edu/exhibitions/lines-of-control.html

Accompanying Catalogue

Lines of Control: Partition as a Productive Space

by Iftikhar Dadi and Hammad Nassar (eds.)

Green Cardamom, London

and Herbert F. Johnson Museum of Art, Cornell University, Ithaca, NY, 2012, 238 pp.
ISBN 978-1934260227

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It has been often observed that the Partition of India and Pakistan in 1947 did not get fully commemorated in public imagination, say, through a museum, a ritual or some kind of dialogue that would acknowledge and memorialize the experiences of the people who were unsettled by this act that left nearly 3 million dead and 15 million displaced. "Lines of Control," curated by Iftikhar Dadi and Hammad Nassar at Cornell University's Herbert F. Johnson Museum of Art, was a recent exhibition that gathered over 40 works in varied media that dwell on the theme of borders, particularly the lines that got drawn as colonial empires physically receded in the last century. As suggested by its title, the India-Pakistan Partition was the provocateur for this show, but the exhibition cast a wider span, gathering artists from Africa, the Americas, Asia, and Europe. Navigating the galleries of the Johnson Museum, one was overwhelmed by how divisiveness has been normalized as a geographical and political fact of our times. But one was more struck by the exhibited artists' persistence in embracing the complexities inherent in border experiences — complexities that cannot be erased or simply wished away by the drawing of neat lines marking national territories. What are the epistemological consequences of the act of drawing borders and lines of control? And where do human experiences of borders sit in a world that in academic parlance is increasingly punctuated with the prefix 'post' (-colonial, -modern, -industrial, -national, -digital, -human)? The exhibition provocatively raised these questions.

New York-based Seher Shah's large-scale, impressive collages foreground a key problematic in thinking about colonialism and the borders it continues to engender. Shah overlays images of Islamic, Baroque and colonial architectures, and historic photographs researched from sources such as the Royal Geographical Society, creating very nuanced — delicate, measured and rich images that expose us to multiple civilizational and cultural perspectives. Shah's collages resonate with a critical distance particular to her position as a second-generation artist from the subcontinent. This critical distance is necessary to relativise, through juxtaposition, colonial discourse with its ties to linear perspective. This serves to reveal how colonialism constitutes a particular worldview contrasting from and competing with cultural imaginaries such as, say, those within Islam. This visual rendition of competing perspectives, quite resonant with the strategies of early Constructivism, is a much-desired move through which to decenter colonialism and advance critical thought beyond linear and causal understandings of colonial encounters and hierarchies, which can prove quite limiting. The theme of perspectivalism is advanced in Jolene Rickard's *Fight for the Line* – a work that asserts Onkwehonwe peoples' claim upon their homeland from which they have been displaced by American settler colonialism, the very land on which the Johnson Museum stands. The work deploys projected images and signage as a gesture to reclaim this land — a strategy resonant with other native artists, too. Through this, the viewer is situated in a tense zone where modern nationhood is thrown into sharp contest with native nationhood. As we stand before this work that interrogates US political supremacy, we cannot but conjure links with *other* territories, outside mainland USA, where the US intervenes politically and militarily. And so *Fight for the Line* opens up what Rickard terms an 'ethical schism': 'The US claims to be a beacon of justice globally, yet has not fully reconciled its ongoing colonial settler status in relationship to indigenous peoples in North America' (202).

If *Lines of Control* critically raises the links between borders and colonialism, it also calls into question the relations between contemporary arts and technologies. Many of the borders and control lines in this exhibition have been mediated through some or the other form of technology, and one could almost plot a history of border technologies navigating this exhibition. But very judiciously and subtly *Lines of Control* resists a technological-progressivist discourse with the result that we are confronted, in the same space, with works spanning advanced digital image technologies, wood-cut prints, video installations, and traditional *zari* (metal-wrapped thread) embroideries, to name a few. This rich conglomeration of technologies is only to the advantage of the exhibition's theme underlining its urgency and constituting a necessary counterpoint to the celebratory discourse of new media arts from the subcontinent that have been the fare of much European and North American curatorial interests within the last decade. Pakistani artist Rashid Rana's

All Eyes Skyward During the Annual Parade (2004) seductively draws the viewer into a composite life-size photographic image of a Pakistani crowd seeing a spectacle in the sky during a national parade. Sensing fuzziness in this image one is drawn closer to it and only then is it revealed that the image has been digitally composed through a colour-sensitive assemblage of stills from blockbuster Hindi films such as *Sholay* and *Umrao Jaan,* among others. Here, digital image technology serves to unravel a political-cultural dichotomy — the people looking up to a military spectacle partake in the state's discourse that constructs India as an 'enemy'; and yet the minute film stills through which this image is composed gesture to popular culture and the people's fantasies fostered by Indian cinema, itself often accessed through smuggled VHS tapes. A more acutely reflexive move occurs in Duncan Campbell's installation *Bernadette* (2008) that is an assembled footage portrait of Northern Irish activist and politician, Bernadette Devlin, known more famously for being the youngest member of the British Parliament. Drawing footage from various sources in England, Ireland, and America, Campbell constructs a portrait whose reflexive vocabulary deconstructs its subject. I am here referencing political-modernist film theory's take on deconstruction wherein the moving image apparatus reveals its own workings thus unsettling dominant ideology. But Campbell's piece pushes beyond reflecting the apparatus at work in a technical sense and imbues the deconstructive move with an explicit political agenda — the revelation of how media constructed Bernadette Devlin as image through techniques of camerawork, sound recording, editing and her very performance before cameras.

While the media works at *Lines of Control* reflect the multi-layered and complexly negotiated *re*-presentations of border-experiences and figures, works in other media at the exhibition usher us into a more critically daring zone — the realm of intimate personal memories, desires, and interpretations pertaining to displacement and the imaginations its fosters. One of the most impactful bodies of work was New York-based Zarina Hashmi's prints that contemplate upon exile, dwelling spaces, borders, maps, and language, here Urdu. Hashmi's prints reflect a disciplined engagement through which personal experience is historicized and historical fact personalized. Aamir Mufti's eloquent essay *Zarina Hashmi and the Arts of Dispossession* in the exhibition's catalogue — *Lines of Control: Partition as a Productive Space,* elaborates on this. Mufti Hashmi's work is decisively exilic providing a 'critical perspective on nation-states as the universal political form of our times, the social crises and conflicts they seem to repeatedly generate, and their marginalization and victimization of those social groups that are deemed to be non-national peoples' (91).

Lines of Control has been an ambitious undertaking that has effectively expanded discussions of partitions, borders, and lines of control beyond singular geographical locations. This is a crucial move that inaugurates new questions and lines of thought in the study of cultural, technological, and political phenomena and experiences in our times. The exhibition's catalogue is a vital text that weaves together scholarly and artistic thought on borders and modern nations from varied locations and contexts. Salah M. Hasan's *Sudan: The Tumultuous Road to Partition* and Jolene Rickard's *Minds in Control* are two particularly perceptive pieces that complicate neat histories of colonialism, raising the arbitrary nature of post-colonial states. Sitting in a complementary relation to the exhibition this catalogue will serve as a useful resource for scholars and practitioners of the arts and sciences alike.

Beyond the Brain: How Body and Environment Shape Animal and Human Minds

by Louise Barrett

Princeton University Press, Princeton, NJ, 2011, 304 pp.

ISBN 978-0691126449

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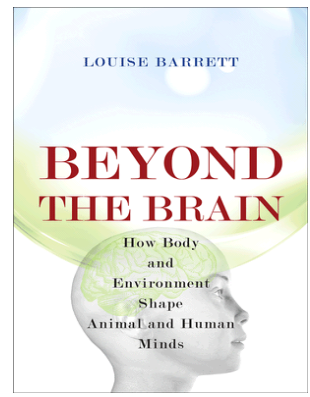

When a chimpanzee stockpiles rocks as weapons or when a frog sends out mating calls, we might easily assume these animals know their own motivations--that they use the same psychological mechanisms that we do. But as *Beyond the Brain* indicates,

this is a dangerous assumption because animals have different evolutionary trajectories, ecological niches, and physical attributes. How do these differences influence animal thinking and behavior? Removing our human-centered spectacles, Louise Barrett investigates the mind and brain and offers an alternative approach for understanding animal and human cognition. Drawing on examples from animal behavior, comparative psychology, robotics, artificial life, developmental psychology, and cognitive science, Barrett provides remarkable new insights into how animals and humans depend on their bodies and environment--not just their brains--to behave intelligently.

Barrett begins with an overview of human cognitive adaptations and how these color our views of other species, brains, and minds. Considering when it is worth having a big brain--or indeed having a brain at all--she investigates exactly what brains are good at. Showing that the brain's evolutionary function guides action in the world, she looks at how physical structure contributes to cognitive processes, and she demonstrates how these processes employ materials and resources in specific environments.

Arguing that thinking and behavior constitute a property of the whole organism, not just the brain, *Beyond the Brain* illustrates how the body, brain, and cognition are tied to the wider world.

Brunelleschi's Egg: Nature, Art, and Gender in Renaissance Italy

by Mary D. Garrard

University of California Press, Berkeley, CA, 2010, 448 pp.
ISBN 978-0520261525

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Brunelleschi's Egg: Nature, Art, and Gender in Renaissance Italy is a study of the Italian Renaissance that argues the visual arts both anticipated and mediated the profound shift in the concept of nature from the organic worldview to the scientific perspective that took root at that time. According to Garrard, the gendered status of nature, the perspective of feminized nature's history, and the biases of masculinist art history shaped her counternarrative. In particular, she argues that around the fourteenth and fifteenth centuries we can identify a demotion of the female role from the elevated images of the Virgin to the more mundane role of the female as the facilitator of patriarchal reproduction. Moreover, during the High Renaissance, we see a neo-patriarchialistic art; the nuclear family was culturally celebrated in imagery that now conceives it as husband-wife-children, rather than the mother-child, further putting the Nature and the feminine in its place. By the end of the sixteenth century, the time we associate with Caravaggio and the Carracci brothers, "the desire to return to aesthetic clarity and logic, the growing interest in practical applications of new technologies, and the rise of the new scientific objectivity are related to each other through their opposition to a feminized Other" (p. 310). Overall, as Garrard argues her case, going through evolving art and styles, she frequently points out exceptions to her generalizations, none of which deter her from her vision. Indeed, she writes:

"There are many ironies . . . [One is] that the stranglehold and taint of feminized style, perpetuated in Florence long after Caravaggio's virile style had transformed art elsewhere, was finally broken by a female artist, Artemisia Gentileschi, who brought both Caravaggism and a new gender dynamic to the Medici court of Francesco I's nephew, Cosimo II" (p. 312).

Clearly, large and complex domains are engaged in this study. Frequently the analyses challenge assumptions so woven into both art and cultural history that we do not see them to raise questions. Others (e.g., Carolyn Merchant and Evelyn Fox Keller) have argued that the Western concept of nature changed significantly during the Renaissance. Garrard builds on their work. Like these writers she notes that it was during this period that philosophies of nature moved from a view of the natural world as an organism imbued with mind, or "soul," on an earth that was itself understood as alive and intelligent, to the early modern "scientific" conception of the world as a machine that lacks both intelligence and the capacity to move itself, created and maintained by a divine outside being. What Garrard adds to this earlier research is a revolutionary perspective that considers how and where art fits within this evolution.

The book opens with a philosophical overview, reviewing the gendering of nature from prehistory through the Middle Ages. With this foundation in place, Garrard forwards the focus to case studies of major Renaissance figures such as Brunelleschi, Masaccio, Botticelli, Leonardo da Vinci, Michelangelo, Pontormo, Giorgione, and Titian and some discussion of various schools. This robust approach

allows her to create the well-researched and sophisticated study. Detailed analyses present her view on how art was an ingredient in a downward revision that moved the feminine Nature from a divine and generative power into the lowly physical nature of rocks, trees, and clouds. Given how refined the research is, I think the all readers are likely to take away different things from the book, based on how much knowledge they bring to the topic, their own backgrounds and predispositions, and whether (or not) her unusual approach resonates with their own scholarship. Such a breadth of reactions seems appropriate for this kind of hefty (it weighs over 5 pounds) volume because its heft also translates into a well researched, philosophically rich, stimulating, thought provoking, and quite contrarian volume.

I was drawn to the book by its enticing title. It seems Garrard chose how and where she takes issue with scholarship that extends out from the design and construction of Brunelleschi's dome for the Duomo of Florence, Santa Maria del Fiore, which was carried out between 1420 and 1436. More specifically, Garrard sees this feat as a symbol of the triumph of technology over nature. What this "triumph" means in terms of the art of that time is the theme of the book.

The standard canon tells us that, according to Vasari, the decisive moment in Brunelleschi's winning of the dome competition for this project came about when the many aspiring contenders gathered to present their models for crowning the cathedral. Unlike the others, Brunelleschi produced no model or plan; instead, he brought forth a simple egg, proposing that whoever could make the egg stand upright on a flat surface should receive the commission. Each master failed to make the egg stand on its end. When it was his turn, Brunelleschi lightly broke the end of the egg on the marble, leaving it to stand on its shards. Garrard sees this story as a key component in a contest between art and nature. The "egg" is a natural form and, as others have argued as well, the rebirth of the arts in the Quattrocento was stimulated in part by an effort to reassert human control over nature's chaos, an idea interwoven with the outbreak of the plague of the previous century. Her conclusion is that:

"Having discovered one of Nature's secrets in the structural strength of the egg, Brunelleschi makes the egg perform for him, putting it to larger use by imitating Nature's mysterious designs on a grand scale. The concealment of his sources, both in the apparently cryptic egg demonstration and in the hiding of the dome's true structure behind ribs that tectonized its breast- or egglike form, may bespeak an unacknowledged competition, between the creative powers of Nature and those of the artist. At this stage, art's special powers are not articulated directly, and Nature is still credited as the source . . . Yet, as the dome's actual construction showed, Nature's living structures could be improved upon, if they were set in larger and permanent form . . . art could create entirely new kinds of order, marked by mathematical rationality rather than organic design" (p. 45).

In her view, the "core meaning in the Quattrocento [is] the struggle of the male hero, whether Hercules, Daedalus, or the artist, to escape the domination of female Nature" (p. 51); "Brunelleschi's transcendent solution, a triumph of mind over matter, was consonant with a familiar humanist claim that the difference between nature and art was *mind* (her italics, p. 50); and the completion of the dome and related projects gave Florence a symbol that transformed "the nurturing and protective powers of the Virgin into a bright new vision of security and progress as promised by technology" (p. 53).

It is an interesting thesis, particularly since I'm more acquainted with the view that Brunelleschi's insight was not a complete epiphany so much as it was inspired by re-publication of Vitruvius' *De Architectura*, which describes Roman machines used in the first century AD to build large structures such as the Pantheon and the Baths of Diocletian, structures he would see for himself as papal architect. It is also important to note that she does not place this idea within a vacuum. Because the egg as a symbol is so important to her story, she presents Vasari's account, compares several other scholarly positions on the account and competition, analyzes the pros and cons of the egg story, and reminds us of other art historical "eggs" (e.g., Piero della Francesco's *Brera Madonna (Madonna and Child with Saints and Federico da Montefeltro)*, c. 1472-74).

Her views on Masaccio also show how she places her ideas within the traditional canon. Arguing that Masaccio wanted to work like a designer, like God, she points to the self-portrait he painted in his *St. Peter Enthroned* and states that all of the enthusiasm about his work with perspective has clouded the way he re-positioned women. For example, Eve apart, not a single female appears on the entire left wall of the Brancacci Chapel, and only a handful or women are seen on the other walls, solely

in passive or caretaking roles (p. 75). Here, too, the ideas are presented within the context of his art's development.

"The almost obsessive focus of scholars upon the innovative perspective construction of this fresco [Masaccio's *Trinity*] has distracted us from another original feature: its assertive rejection of matrifocal holy kinships, a genre the artist obviously knew well. Masaccio replaced these with a patrilineal image . . . The exceptional "trinity" of St. Anne, the Virgin and Christ Child [found in the Masolino/ Masaccio *Sant'Anna Meterza*] is supplanted by the canonical masculine Trinity. God the Father and His Son command the central axis, while Christ's earthly mother stands to the side, displaced" (p. 70).

A tome as large as this survey covers so many topics that every reader will inevitably come across ideas to savor and details with which to find fault. This was the case for me as I read. What was most pronounced was that, as a woman, I really wanted to applaud the feminist scholarship but, as an artist, I found much of the gender-specific arguments seemed too much like specialized art-speak. I found the sections that resonated the most were those where she talked about the art rather than the philosophical counter-narrative she was promoting. For example, when speaking of Botticelli's *Birth of Venus*, she points to "an abstract pattern [that] is developed [and] sets him apart from many of his contemporaries" (p. 114). This discussion of some abstract elements in his work seemed more tangible to me in terms of art and less amorphous as well. It stayed with me to a greater degree than many of the verbal abstractions used to make her case.

In fairness I should note that Garrard looks at Botticelli's development toward an abstraction of his own invention as an extremely important component of his competitive challenge to Nature. I should also note that some of the case studies, for example the discussions of *Leonardo* do a good job of balancing the artist's art with the philosophy. Regardless of what the text is emphasizing in any part, the many, well-produced images make it easy to engage with the words.

Mary D. Garrard, a well-known feminist scholar and art historian, spent years developing this penetrating study. As noted, she incorporates some scholarship from the field of feminist studies, but the thrust of the argument is presented through the language of art history. Following the long-standing academic tendency to elevate philosophical perspectives over contextual history, the words often seemed densely abstract. Because of this, I kept wondering why she didn't draw upon writers such as Gerda Lerner, who documented the twelve-hundred-year struggle of women to free their minds from patriarchal thought. Still, even with its fault's, the book is masterful and no doubt a study that will engage Renaissance scholars for years to come.

The Art of Cruelty: A Reckoning

by Maggie Nelson

W.W. Norton & Company, New York, NY, 2012, 304 pp.

ISBN 978-0393072150

Reviewed by Allan Graubard

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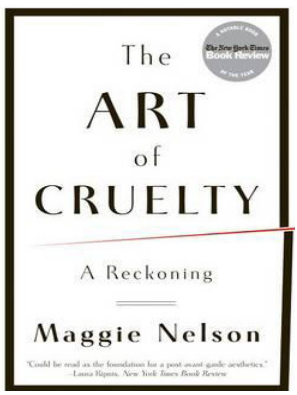
I was initially attracted to this book by way of its title. Discussing the art of cruelty may reveal something about it that I had not thought of or encountered before, whether in real time or virtual performance or as imaged, sounded or written. Of course, cruelty abides with and between us. We can't escape it. We provoke it, support it, condemn it or shy away from it as we can. It resonates or it does not, it leaves us shaken or numb, or passes through us as simply another incident among all too many we have managed to endure. Being a victimizer or victim, of course, is something else, and there the term "art" loses meaning. When directly inflicting pain or having it inflicted on you, what space is left for you to find significance within it: little to none. And for those others who may watch, are they anything more than voyeurs? Commanding agents to do your dirty work can open the door to a kind of artistry, however horrifying it might be. But even here the terms bifurcate and ethical considerations come to the fore, as they should.

So this book offers perspective on what makes the representation of cruel acts, and cruelty, artistic, and what does not. That is to say, what gives to such acts the values we attribute to art and the values we attribute to bad faith or simple disgust: from personal revelation, the clarity in embracing something you did not before in just this way, or a revalued ambivalence, for example, about the work and how it plays or culminates or something of both, to an exorcism of, or service to, neurotic, *agit prop* or other compulsions which might shock but rarely inspire.

In each case for Nelson, attentiveness couples with nuance before the work, and that relationship is primary. That she does not practice what she preaches methodically, lend-

ing to her discourse an aleatory character, doesn't prevent her from making use of it well enough – an aspect, I am sure, that contributes to the notice her book has received. She plays intellectually, her subjects artistically. Shall I mention just a few? There is Sade, Nietzsche, Artaud, Dix, Kafka, Brecht and more currently Abramovic, Fassbinder, Mendieta, Antin, the Yes Men, Holzer, and others, a compendium of creators we have encountered in one or another ways, balanced on both ends by Bacon and Plath with a tether to Buddhist perspectives that sometimes left me curious, not so much as to why but why not; it's about time.



Nor does she avoid questioning the rote tradition that "avant gardes" do violence to what preceded them, the better to gain advantages precise to their momentum. Complicating this, of course, is the need, as expressed by those she admires, with few exceptions, to do just that -- to strip away, excoriate, cleanse, subvert and otherwise defenestrate given values and styles; as if such aggression best enabled them. Certainly, it is a phenomenon worth discussing despite the oft-echoed death of the avant garde. Somehow, ghost or not, it stalks us. And somehow its predicates illuminate and beguile. What else have we less played out here but a kind of compassion that we rarely acknowledge or use, including the deep possibility of humor and irony by way of it, and other riches still largely in the wings?

Most striking for me about this book, though, is its temporality. By that I mean two things: its currency, in terms of the artists, writers and film-makers Nelson explores, with one composer, Cage, and their value over time. While explaining why a work interests her and may interest us, I also came away with a peculiar sense of evaporation, of entering an alternate or parallel scheme whose values slip away. This is not to say that Nelson forgoes her aim. She doesn't. But, and perhaps this is a sign of the times, it diffuses into a shifting landscape where insights emerge and vanish, and whose overall significance diminishes as a result. If I bring into this consideration the ever-present tides of real politick, whose cruelties are immediate or insidious, and the deluge of virtualities that orbit about them, this act of interpretation enervates as much as it enlightens.

To her credit, Nelson also knows that boredom can change or challenge a reader's perception, as it has my own, and that art, if it seeks something more than a shallow intensity, needs boredom, or the space or lack of space it invokes as counterpoint. Like Nelson, I too look for that intercession or suspension that any work can foil by virtue of its medium or mechanism too rigorously projected. Failure here is thus a kind of triumph. Because, like her, I seek in art the humanity we have all too much lost to acts of cruelty that, on their own, asphyxiate.

This is one reason why her book is important enough. At times it breathes and allows us to breathe with it. At other times its breath dissimulates the communion it seeks. The contradiction is intriguing. I only wish, given her expansive reading and discretion about art, she would use both more intensively. Her concluding chapter, "Rarer and Better Things" points to this although I'm not quite sure what she means. So, too, her book subtitle, "A Reckoning," which, for me at least, she has yet to make with cruelty and the art that represents it and us, or some vital part of us that makes us what we are and least or best desire to be.

The book is broken into 16 chapters. I will mention a few of their titles to indicate what Nelson deals with, not without personality, and what you may gain from: Styles of Imprisonment; Captivity, Catharsis; Nobody Said No; A Situation of Meat; Precariousness; Face…

The art of cruelty remains with us, a mirror to who we are, a looking glass to what we might become, given the desire to transform the images that compel us, and the actions that sometimes define us.

Virtuality and the Art of Exhibition: Curatorial Design for the Multimedial Museum

by Vince Dziekan

Intellect Books, Bristol, UK, 2012, 176 pp.

ISBN 978-1841504766

Reviewed by Dene Grigar, Washington State University Vancouver

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There have been several excellent books published about curating media art in the last four years, including Christiane Paul's *New Media in the White Cube and Beyond* (2008) and Beryl Graham and Sarah Cook's *Rethinking Curating: Art after New Media* (2010). Joining them, now, is Vince Dziekan's *Virtuality and the Art of Exhibition: Curatorial Design for the Multimedial Museum*. While Dziekan, understandably, covers some of the same topics as the other books (e.g. materiality, space), he covers new ground in that his book focuses on the quality of virtuality and what it means for curatorial design in context of the museum.

Specifically, he suggests that virtual objects "compel [museums] to address the importance of multimedia, defined both a content delivery and technology infrastructure, towards its expository techniques." Citing the work of Mieke Bal, he claims that that building upon the "'multimedial' aspect of the museum" may have "far-reaching implications about 'what could happen if the mixed media nature of museums were to become a paradigm of cultural practice'" (63).

Anyone who has ever mounted an exhibit of virtual objects that visitors to the space can easily access themselves with their own computer or mobile device, knows instinctively what museums (and I would include galleries, as well) offer is an *experience*, which Dziekan suggests is one with a narrative that ultimately pulls works together in a way that compels visitors to think more deeply or differently about the work, the ideas put forth, and their own views and perspectives. Virtual objects provoke participation from visitors, who become part of the narrative experience that the curator sets in motion with his or her design.

The book is divided into two main sections. In the first, "Expositions," Dziekan addresses theory in relation to virtuality, the art of exhibition, spatial practice, digital mediation, the multimedial museum, and curatorial design. In the second, "Exhibitions," he provides concrete examples of theory into practice as it pertains to the curatorial philosophy, applied curatorial design, and artwork of exhibits (to name a few areas he addresses) in which he has himself curated. The fresh reminder that online objects are not necessarily always virtual ones, coupled with well-argued theory and its application to his practice, makes the book insightful and useful. Those coming from a practice involving multimedia sound installations will notice a focus on the visual and seeing. But Dziekan, who is digital media curator of the *Leonardo Electronic Almanac*, brings his deep experience to bear in this book and presents us with a very excellent material to consider.

Because each chapter begins with a synopsis and is kept at a brief length, the book seems aimed at the classroom. And, indeed, I am using it this semester in the curating course I am teaching to advanced undergraduates who seem to have little difficulty grasping the concepts Dziekan presents. But it is ideal for graduate students in digital media programs interested in curatorial design. Using it for teaching makes me hope that future editions of the book will include an Index, for the book does not currently offer one. Also useful for students new to curatorial design for multimedia art would be a glossary of terms. The book is well written and thought out and, so, is highly recommended.

The Berkshire Glass Works

by William J. Patriquin & Julie L. Sloan

The History Press, Charleston and London, 2011, 128 pp.
ISBN 978-1609492823

Reviewed by Giovanna L. Costantini

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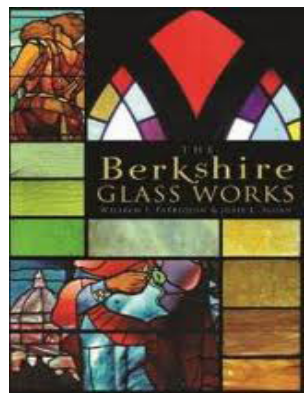

Referred to as *lithos chyte* or 'cast stone' by the Greeks, glass was from the first made in imitation of precious stones. Known to date from at least the Third Millennium BCE when it was produced in Egypt and Babylon as tiny pieces of jewel-like inlay found in ceremonial beakers, pectorals, Ushabti figures, scepters and crowns, glass in antiquity was associated with royalty, sacred functions, and burials. Paraded as booty in triumphal processions and collected among the Romans, glass was more prized than precious metals, worked in techniques that ranged from gilding and faceting to engraving and beveling. It was valued extraordinarily high, in part due to its delicacy and fragility. One legend has it

that when a glassmaker offered the Emperor Nero an object of unbreakable glass, Nero, who considered the loss of glass' fragility a threat to the value of silver and gold, had the craftsman exiled and his workshop destroyed.

William Patriquin and Julie Sloan's book, *The Berkshire Glass Works*, presents a history of one of the dozens of Massachusett glasshouses that sprang up during the course of the nineteenth century in America, the Berkshire Glass Works factory located in Lanesborough, MA, a small town just north of Pittsfield in a section of the Housatonic valley that affords a prospect on the Berkshire hills. During the 1870's this factory was the first to produce colored cathedral glass and one of the earliest in America to blow antique glass to be used in the creation of stained glass windows. Reflecting a renewed appreciation of window glass that originated in France and England earlier in the century where windows were deemed to be an integral part of architecture, stained glass was appreciated for its radiance and spiritual significance. This led to Gothic revivals of medieval prototypes, pictorial subjects and painterly styles found among Romantic artists such as members of the Nazarene Movement. During the Gilded Age, at the height of American industrial expansion, numerous studios and workshops sprang up throughout New England where larger establishments employed as many as three hundred glass workers at a time, each specializing in a particular process. Art glass production as a decorative art peaked in the Aesthetic Movement during the 1870's and 1880's following trends that had originated in Europe a decade earlier. By the turn of the century, colored glass came also to be used by followers of William Morris and the Arts and Crafts Movement, first in Britain, then in America among such figures as John La Farge and Louis Comfort Tiffany.

In its broadest contours, the Patriquin-Sloan book presents the history of a significant American glassworks establishment integral to the production of stained glass in nineteenth century America and the formidable attributes of character, ingenuity, entrepreneurship, and craftsmanship that contributed to its rise. Part I opens with a geological survey of the unique natural resources of the area, the white sand beds of Northern Berkshire County formed along the shores of the Iapetus Ocean during the Cambrian Age whose sands were of such incomparable purity that manufactories as far as Liverpool and Le Havre considered its "dazzling whiteness" the finest ever used in the production of glass. The first half of the book describes the stages and operations of antique glass production that included the melting of mineral batch to molten glass (referred to as *metal*) in furnaces within clay pots before being gathered into cylinders, blown, capped, and flattened, then rolled into panes of plate glass. It chronicles the passage of ownership from the company's co-founders through the partnerships of Page & Robbins (1858-1863) and Page & Harding (1863-1883) with detailed, often fascinating biographies of its principals and affiliates. Drawing on transcripts, minutes, advertisements, reports, newspaper articles, ledger extracts, journals, and many other critical sources, the evolution of technologies applied, modified and invented is described with exacting precision and measurement, including the composition of compounds, firing temperatures, thicknesses of glass, shipping weights, costs to produce, wages, income, discounts, currencies and sales figures. One of the more absorbing sections examines life in Berkshire Village among groups of workers and their families, immigrants, journeymen and farmers based on information culled from census reports. This includes the racial composition of the glassworks' community in a state that was home to abolitionism and the social life, religious practices, and education of workers employed in the factory. In certain respects it is a history that traces the growth and expansion of a company and its constituent society from elemental foundations to a material and social fabric in an arching movement from industrial fundaments to post-industrialization. If the story ended here, the Berkshire Glass Works would be a tale of progress and eventual downturn characteristic of many industries. But it does not. Through admixtures of ambition and competition, personality, and public values, Part I chronicles a modern saga of hardship, struggle, flux, economic shifts, periodic renewal, and vigor sustained through a legacy of aesthetic value.

Part II is devoted to reflections on the exquisite quality and variety of art glass produced at the BGW, with summaries of notable artists, their careers and studios, and brief histories of many of America's most treasured landmarks and artifacts. This section categorizes and defines each type of antique blown and cathedral (rolled) glass made by the company with illustrations and explanations of each specimen that permit matching and identification by collectors

and conservators. Assortments include blown, rolled, enameled, flashed, streaked, textured and crackled glass in colors ranging from celadon green to "beefsteak" red, cobalt blue, opalescent "milky" white, brilliant turquoise and canary yellow. Mazarine blue, a color distinct to the BGW, was held to have curative properties so that invalids were recommended to take an air bath in rooms having sunlight coming through this blue glass. Created through the introduction of pot metals shades such as these received awards in international exhibitions that led to a skyrocketing demand for windows in residential buildings throughout the Boston area during the 1870's and 1880's. Surviving windows made with Berkshire glass during this period include such works as *Charity and Devotion*, paired lancet windows in S. Anne's Episcopal Church in Lowell, Massachusetts designed by Donald MacDonald (1841-1916); residential windows in the Walter Hunnewell house in Wellesley, MA based on Japanese *Manga* models; stained glass panels made by the Tiffany Studios for S. Stephen Episcopal Church in Lynn, MA and Christ Episcopal Church in Pomfret, Connecticut; and Frederic Crowninshield's *Pericles & Leonardo* in the Harvard University Memorial Hall.

The authors William J. Patriquin and Julie L. Sloan are experts in the field of stained glass and lifelong residents of Berkshire County. William Patriquin, a former biomedical technician, navy diver, and chief petty officer has worked as a professional stained glass restorer since 1997. Julie L. Sloan is a Conservator and stained glass consultant with an MS in Historic Preservation from Columbia University. She is the author of *Conservation of Stained Glass in America* among many other publications on stained glass and its restoration.

As a technical and historical resource, this meticulously researched, straightforward text serves as a handbook of techniques and processes involved in the production of stained or colored glass, an illustrated catalogue, a bibliographic reference and a sourcebook for windows made with Berkshire Glass, the buildings that contain them, Berkshire Village demographics from 1850 to 1900, and the structures, appliances and operations that may be indicative of other glasswork factories of this period. Closely focused on a single glass works manufactory, it would benefit from further contextual background on the revival of colored glass and its commerce in America and Europe during the course of the nineteenth century that might include a chronological table. Yet crafted as carefully as the lancet windows that it describes, with original full color illustrations, many period photographs, a purposeful index and abundant references, this small yet artful publication contributes significantly to our appreciation of a timeless craft and cherished aspect of American architectural heritage. It provides a luminous testimony to the enduring beauty of American colored glass. ■

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