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## **The potential of destruction in art and science**

Neal White

### **KEYWORDS**

Art and science; destruction; John Latham; Gustav Metzger; critical practice; Cold Wa

### **Introduction**

This paper draws on the encounters between UK artist Neal White (b.1966) and the late British artist John Latham (1921–2006) in order to explore ideas and contemporary forms of practice between artists who have shared interests in science, its developments and impact. The prominence of science driven activity in the cultural sector provides a context for the discussion of a renewed interest in the rise of a number of key artists in the early Cold War period 1947–1972, that also includes Gustav Metzger, Robert Smithson and György Kepes. Whilst emphasizing shared concerns around the potential of destruction, in the archive and in terms of formal artistic process, the paper also argues for a deeper understanding of the vision and values that these artists bring. In doing so, it points to a contemporary landscape of art and science that might contribute to society beyond the current cultural/scientific spheres, addressing broader questions and concerns that are considered urgent for scientists and artists alike.

### **A perspective on art, science and culture**

In the last two decades, we have seen the continuing growth of a cultural phenomenon in? which art is exhibited in a scientific context, largely through organizations with impressive amounts of funding supporting refined and engaging art gallery spaces; from the Well- come Trust in London, to the Science Gallery network working out of Trinity Dublin, through to landmark architecture initiatives such as the Art Science Gallery in Singapore. The often seductive and spectacular<sup>1</sup> exhibitions curated in these environments often perform a contemporary take on the Wunderkammer, or cabinet of curiosities, and are designed to appeal to mass audiences with titles such as the ‘Institute of Sexology’ – sub- title ‘Undress Your Mind’ (Wellcome Trust, 2014), through to ‘Fat Lab’ and ‘Life Logging’ (Science Gallery Dublin 2014–2016) and include the historical works of ‘Da Vinci: Shaping the Future’ (Singapore 2014–2015). With richly illustrated catalogues and advanced media strategies, all attract very large numbers of visitors, perpetuating the media focus on science that has developed its very own cultural plaudits. For many artists, this sector also represents a rich and rewarding space within which to operate.

The emergence of such vibrant cultural activity in the late 1990s has not been without criticism. Among many artists working in this period, there was a view that the forms of funding were only made available to those

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<sup>1</sup> Referencing Guy Debord and his critique of the mass spectacle (see Debord 1967).

who supported the 'positivist' science agenda. The view became synonymous with institutional critique in visual art, a long and well documented area of practice in which the dominance of certain cultural forms, represents control over artistic freedoms. Art and Science in this respect can be problematic, from restrictive practices on artists working in labs, through to the broader agenda of life science corporations/charities, many of which were linked with the essential life support offered by military spending on research of all kinds. Whilst today it is argued a new wave of critics, curators and artist challenge this purely positivist approach, it has been difficult for those working within this space to shake off these pointed accusations. Even today, in appropriating more critical voices within the agenda of public understanding and science communication, the dissent has not abated – and other views of the relationship between art and science are being valued. Many of these values stem from a critical relationship developed by artists working in the UK and USA in the Cold War period (1947–1991).

### **The potential of destruction**

The early Cold War period gave rise to artistic practices that engaged with science and over recent years, these pioneers have started to come to prominence in the West, notably in the UK and USA. In part this was due to their radical and critical approach that tore into modernist ideas and the privilege of aesthetics over other values in art. Further to this, there was recognition by a younger generation of artists, critics and curators of the critical and conceptual shifts that occurred during this period<sup>2</sup>. In the following short sections, a personal and historic account of some of the range of these practices sheds light on what is now termed as art in the expanded field, or post-conceptual art (Krauss 1979; Osborne 2013) being practised in art and science today. In April 2016, a John Latham retrospective at The Henry Moore Institute, entitled 'A Lesson in Sculpture with John Latham' included a re-staging of a performance of one of his most infamous series of works by the author (this work was called 'Neal White realises a Skoob Tower'). A key part of Latham's early oeuvre from the 1950s, the 'Skoob' (the word 'books' spelt backwards) tower performances consisted of a tall column or tower of books, usually Dictionary Volumes, which were then set alight in a public space. Having remade Latham's work on several occasions now<sup>3</sup>, the approach to remaking this work has been shaped both by a familiarity with Latham's work, but also as an ongoing exploration of the artist archive, and the role of events, including destructive acts through practice led research. In particular, the work follows a line of personal enquiry started in 2004–2005, having made a piece of work that campaigned for the restoration of a series of 'destroyed' public sculptures made by Jacob Epstein (on the Strand, London) – The Third Campaign (Henry Moore Institute, 2004–2005; Whitechapel Gallery 2014–2015). The project was conceived as an exhibition that would become an artwork within the archive of the Henry Moore Institute. It included a campaign film, letters to those involved and props, and now resides within the archives as intended.

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<sup>2</sup> This includes artists such as the author, who has a background working with new technologies.

<sup>3</sup> First instance was at Portikus in Frankfurt as part of a joint show with John Latham and sanctioned by the Latham Foundation following specific historical research of previous events.

The 'Skoob tower' further addresses the significance of what might be termed as destructive events in historical and cultural terms, addressing what it is that can be pre- served – artworks or events – within the institutional archive. As Latham commented to me at the time, the Third Campaign project was more than a polemic; it was conceived as an interruption to the stability of the archive, an insertion of work into official records and into cultural time. Marking a decade since Latham's death in 2006, the proposal to perform the 'Skoob tower' in 2016 was made as a tribute to Latham's ideas, in the context of his notion of 'event structures' that are also relevant to the archive. The work was commissioned on the agreement that it would eventually be interred within the Henry Moore Institute itself, as a new work entitled 'The Archive in Ashes', a project that is ongoing at this time.

My own interest in Latham's work and his ideas did not emerge out of a formal academic study of Latham on my part, but followed an introduction in 2003 to John Latham and his life-long working partner Barbara Steveni. At this initial meeting, a jointly authored book 'Ott's Sneeze', that was made with the author Lawrence Norfolk (Norfolk and White 2001) became a powerful catalyst. Within this short work, the 196 pages are numbered as divisions of a single second, one second being the time over which a sneeze was recorded captured by an advanced laser camera at a laboratory in Oxford. Linked to the first piece of copy- righted film in the USA, a 45-frame film of Thomas Edison assistant sneezing (1896), the book meditated on the filmed fragments of a one second sneeze today and the progress of technology from the chemical to the digital, referring both to the speed of the recording, and the disintegration of meaning into code. The book was itself a piece of time. In formal terms, however, and unbeknownst at the time of the first meeting with Latham, the spray of the sneeze we photographed and which features on every page approximated Latham's own early work, 'One Second Drawing', that he created for the Cosmologists Christopher Gregory and Anita Kohsen (1959)<sup>4</sup> in 1954 (Walker 1995). It was through this work that John Latham had developed his own vision of art, a vision informed by science that shaped his entire life. He called it the 'quantum of mark'.

Latham, whose own intimate engagement with ideas emerging in theoretical and experimental physics, recognized parallels between his ideas and those in the book that had been left with him. This was the start of a short but deep journey with Latham at his home, Flat Time House. Exchanges took part through both rational and intuitive means, an approach to art that would allow for both textual descriptions, as well as 'event-based' works such as the 'Skoob tower' were discussed, and we planned for what was needed in order to explore the unspoken in science now. It was we agreed, a form of practice and research that required art to embody ideas

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<sup>4</sup> Asked to produce a mural for an event at their home, Latham decided to use a spray gun as an experiment. Having made a one second spray with this new technology for artists, he realized that the image not only resembled a cosmos of tiny blobs on the wall, but spoke of the event, the spray and the end of the spray. Latham often referred to this as the most important discovery in the development of his ideas about time.

and knowledge beyond language, the linear, the rational. Without anticipating the affect, Latham's ideas shaped my own approach, as it had done so many before and since.

Latham largely developed the ideas we discussed after he made his single spray paint gesture and following his exchanges with Gregory and Kohsen (1959), and together they formed the Institute of Mental Images (later publishing a journal called *Cosmos*). In this period, where many ideas and possibilities were still open for exploration, from cosmology thought to extra sensory perception, the distinct approach between instinctive, logical intuition and rational forms of enquiry were both real and urgent projects. Latham referred to how these ideas could be explored by different people using Fyodor Dostoyevsky analogy of the Brothers Karamazov.<sup>5</sup> Whilst the psychophysical cosmologists had developed their proposition through a schematic they termed the 'O-Structure' (1959), Latham reworked this diagram with their initial input over many years before settling on the 'Basic T Diagram Roller' (1991) as a method of articulating his ideas. As a vertically striped roller blind, he was not only able to translate further these ideas, but to extend his own thoughts about science discoveries, from quantum theory through to string theory, and most importantly to find a new means to communicate how his ideas intersected with such approaches, through art.<sup>6</sup>

For purposes of clarity here, in the realm of the verbal idiom (Latham), when positioned on the wall, it the 'Basic T Diagram Roller' was able to wind and unwind. As intended, it would be read along the horizontal at the top as the moment 'now', and as the fabric unwound against the vertical surface of the wall, the viewer could see through the canvas to traces of the event now; a schematic that reveals both history and present through time/movement. The stripes spaced along the horizontal were described as time bases; the amount of time an object exists for being the distance from left to right in the schema. Starting on the left with the letter A to Z on the right – that is, the distances represent very small amounts of time (the smallest measurable by science, to very, very large amounts of time – in other words from quantum to cosmic scale in one schema, unfolding simultaneously). The artwork was therefore neither formally an aesthetic representation, or a non-representational abstract system, but a schematic or diagrammatic reading of time/space. Our insistence to read matter as a quality of space and not time was a habit according to Latham. Objects, particles, even institutions and governments could be understood better using these ideas, a unified theory of existence that bridged science, art and religion.

Latham's approach to books, the destruction of which feature so heavily in his work are neither included as destructive acts or as critiques of literary forms, but instead seen as the adoption of a new order for

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<sup>5</sup> The three Karamazov brothers, Mitya, Ivan and Alyosha, were used as examples of people with different perspectives on the universe; biological, rational and intuitive.

<sup>6</sup> Seen as a seminal work at a number of scales and exhibitions throughout his career – most notably as a large scale-version acquired by Tate Britain as exhibited in the recent 'Conceptual Art' Display at Tate Britain, 2015.

knowledge from an older (language mainly). The approach was pivotal to understanding the work 'Still and Chew', which made Latham's name in 1966–1967, and has at its centre the destruction of Clement Greenberg's book on 'Art and Culture' by a group of party goers, who chewed pages of the book and then spat the remains into a still. When the overdue book was requested by the Central School of Art Library, from where it came and where Latham worked, he presented a vial with the contents. Greenberg's book, the epitome of abstract expressionism that criticized process-led art, was Latham insisted still there, in essence. He was released from his duties, and instead of being placed back in the Library, the remains were acquired by the Museum of Modern Art in New York.

Whilst Latham's application of thinking through event structures was seen repeatedly in his formal production of art, he also applied his unified theory of time more widely, primarily to social situations through the Artist Placement Group [APG], founded in 1966 with Barbara Steveni and others (for more on APG, see Walker 1995; Hudek and Sainsbury 2012). In this respect, the artist's ability to construct art through events meant that new ideas about time, our impact on society or even the environment, could be shared in a variety of contexts; from industrial to governmental through to science and technology. His work in this area included re-designating slag heaps as sculpture for the Scottish Office – as in the Niddrie Woman (Richardson), and the 'Big Breather' (1972), a nine-metre high sculpture conceived to display tidal power in the ocean, and intended as a prototype for producing tidal energy.

Whilst APG enjoys a significant and ongoing legacy<sup>7</sup>, Latham's own hopes to engage scientists in his ideas (after Institute for the Study of Mental Images), and in particular theoretical physicists, were less fruitful. Despite his ongoing attempts, and the countless works of art that have considerable repute in the art world, his engagements with the world of science was frustrating. Ongoing conversations and public events with Professor Chris Isham at Imperial College, London (such as 'The Universe as "Event Structured"', 2000), were productive, but led nowhere consequentially. This area was in fact to be one of the most frustrated dimensions of Latham's narrative, and an area we discussed at length. His ideas although hugely attractive to critical and creative thinkers, simply bewildered the rational mind, particularly of those who were the gatekeepers of science and were invested in science communication. In developing his ideas for application in computational space, using the concept of 'evenometry' a proposal to NESTA with Ian MacDonald Munroe made it through a first stage, only to be thwarted much to Latham's resigned disappointment. But it was his relationship to both scientific institutions and to industry that was not only misunderstood, but became a point of severe criticism from other important figures of this period, in particular the artist Gustav Metzger and other members of APG, that still marks out important differences in approach.

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<sup>7</sup> Between 2005 and 2009, I sat on the Board of O+I, the organization that followed on from APG in 1989. Whilst O+I was closed in 2009, in 2016 as part of the exhibition '9Events' at the Royal College of Art with artist Tina O'Connell, we organized an 'Incidental Meeting' with Barbara Steveni and the O+I Board, inviting others interested in this legacy. We are now working on a project called the 'Incidental Unit' with Barbara Steveni and a growing number of artists and incidental persons (around 25) to take some of the original ideas forward.

Gustav Metzger was a Jewish migrant to the UK whose political views in the Cold War era were far more explicit than Latham (who often refused to be drawn on the subject of political ideas). Metzger attitudes to science seem in part to have been shaped by the trauma of the reality of the Holocaust including the use of eugenics. His attitude to art drew on this energy, but was applied as a constructive force. He confronted head on abstraction and modernism and through his own 'Auto-Destructive' art in the early 1960s, examined the potential of violent (often chemical) action/reaction through actions and happenings that explored social and political structures, revolution and change, war and catastrophe. In one of his most notable early works in 1961, 'South Bank Demonstrations' Metzger sprayed acid onto nylon as part of a performance in which the artist is himself dressed in semi protective clothing, including a gas mask. As the ideas at play in this work were developed, in 1966, Gustav Metzger organized with John Sharkey, the International event, the Destruction in Art Symposium (DIAS)<sup>8</sup>.

Although Latham was part of the same experimental scene as Metzger in the UK, appearing in DIAS in 1966, Metzger and Latham's attitude towards science as both a moral project, and as a rational form of enquiry, were very different. As a more radical political figure, Metzger and others in associated peace movements wanted to draw attention to science destructive power in the service of war, and capital, or political ideology, evident in the burgeoning and all-encompassing nuclear arms race that defined the Cold War. As a member of the Committee of 100, Metzger anti-Nuclear links and political aims were clearly stated. His artworks in their day were seen as radical and controversial although as much for their formal conceptual impact as their political messages. Their appearance as fleeting 'events' can nonetheless be read as performative and political, rather than as part of a broader conceptual engagement with scientific ideas or unified theories, such as Latham's on time or evenometry. The work outlined in the starkest terms, the consequences of an absence of a moral social context in science progressive agenda, but also perhaps the perils of developing grand narratives or unified theories.

Whilst Latham's work, like many of Metzger's works involving chemical processes<sup>9</sup>, was formally destructive, they shared a formal approach which was schematic, and to some extent drew on the theoretical approach to ideas being developed in science at the deepest level. Latham's engagement was not just with science agenda, but in the structures, syntax and language upon which science and indeed belief systems rely. In this respect, it

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<sup>8</sup> Destruction in Art Symposium was a month-long programme running up to 30th September, 1966 in London. At the final event, among the works performed were Latham's 'FILM', and Ivor Davies (UK), 'Silent Explosion'. Others that took part in the events included; Gunter Brus, Barbara Gladstone, Herman Nitsch, George Maciunas, Biff Stevens, Peter Wiebel and Yoko Ono.

<sup>9</sup> Liquid Crystal Environment (1965, 2005) is one example of Metzger's more playful projects involving projected light to create an immersive installation. Familiar to those of us who saw similar projections at Discos in the 1970–1980s, Metzger developed the psychedelic effect following a lecture demonstrations on auto-destruction at Cambridge University (1965), organized with the Society of Arts and entitled 'The Chemical Revolution in Art'.

could be argued that this early work relates directly to the philosophical engagement by artists working today, questioning how art can address material forms, shaped by conceptual art, and considered in an expanded field. This includes work which may impact on the world beyond art, in terms of science, our environment or our ethical approaches to technologies ranging from clinical to genetic manipulation of life itself.

In the next section, the ideas and critical approaches to art developed both by Latham and Metzger are further expanded, drawing on an institutional perspective in Art and Science in the USA from around the same period. In doing so, we begin to point to the emergence of a 'relational field' of critical practices which today draw on artists shared language with science, that of computing and applied technology.

### **From a new landscape in art and science**

The emphasis on destruction in the previous section and the overlaps between the work of Latham and Metzger was not their concern alone. In the height of the Cold War, the nature and duration of art itself was also being questioned. In the USA, artists were dealing with art and its dematerialization, as highlighted by curator and critic Lucy Lippard who featured many (including Latham) in her canonical book, 'Six Years; The Dematerialization of the Art Object from 1966 to 1972' (1973). Within this group of artist, is Robert Smithson, an artist who dealt with dematerialization by engaging with the language of cybernetics, borrowing the term 'entropy' to extend his own ideas of time with his own 'Land Art'. As a result of this work, and Smithson's outstanding gallery practice that linked site and non-site, he came to the attention of György Kepes, an artist interested in art and science but coming from what we might see as the scientist's perspective. The following account of these two artists speaks to other agendas between art and science that are still at play today.

In 1951, the term 'A New landscape of Art & Science' was used by Hungarian born artist and academic György Kepes as the title for an exhibition in which he described a unified field driven by new scientific developments and instruments that could benefit artists and scientists alike. György Kepes's background in Hungary, and teaching with Moholy-Nagy at The New Bauhaus, Chicago (1937–1943) shaped his vision that led to the founding of the Center for Advanced Visual Studies at Massachusetts Institute of Technology (MIT) in 1967, arguably the first art and science initiative within a University in the West. Here, fuelled by his exposure to a multitude of advanced optics, new temporalities and extended soundscapes, Kepes's vision is illustrated in the section headings under which the 1956 catalogue for a 'New Landscape in Art and Science' was organized; Image, Form, Symbol; The industrial and then New Landscape; Things, Structures, Pattern, Process; Transformation, Analogue, Metaphor; Morphology in Art and Science, Symmetry, Proportion, Module; Continuity, Discontinuity, Rhythm, Scale. Kepes's motivations at this point are persuasive, the work beautiful, his attitude optimistic.

Kepes's exhibition that was recently re-presented at Tate Liverpool (2015), and his overtly visual engagement with art and science has been criticized as a 'utopian' or naïve agenda that whilst based at MIT overlooked the damaging relationship that his vision shared with the US military, specifically through the funding he received

(John R. Blakinger, 2015). However, it is both marked and important here because of one specific criticism that today speaks of the ongoing questions that surround art's relationship with science, and parallels the criticism we see in the work of Latham and Metzger.

In 1969, having invited Robert Smithson to take part in an exhibition for the US pavilion at the Sao Paulo Biennale, using some of the new technologies Kepes was entranced by, Robert Smithson writes back to Kepes to decline his involvement. Within this letter he states;

*To celebrate the power of technology through art strikes me as a sad parody of NASA. I do not share the confidence of Astronauts. The rationalism and logic of the engineer is too self-assured. Art aping science turns into a cultural malaise [...] If technology is to have any chance at all, it has to become self-critical. If he wants teamwork he should join the army. A panel called 'What's wrong with technological Art' may help.*

Smithson, as we see from his interest in Cybernetics, was not opposed to science and technology as an idea or metaphor, but was critically opposed to its application in war and conflict. His views were shaped not only by the context of the Cold War, but the more specific ramifications of the Vietnam War on his generation. His desire was to move away from such loaded context, as with Metzger, he believed to work with science and technology was to be complicit. Unlike Metzger however, Smithson was not guided by any overt political positioning, but a suspicion and mistrust of the application of science under the banner of research, a criticism that still resonates today across a wide range of artistic practices that deal with or use technology to convey meaning.

As Latham, Metzger and Kepes spelled out, artists have wider responsibilities. Whilst Kepes identified in an overly deterministic way some of the landscape of what art and science might become – he correctly identified how artists might bring us closer to issues of environment, ecology – what we might now say as reflecting on our Anthropocene, questioning the techno-sphere, becoming post-human – all part of contemporary art discourse. The situation in which we live now may still have echoes of the Cold War, and the Anthropocene itself is marked by many scientists as emerging from the nuclear age. But how does this play in the contemporary context of art and science – specifically in the context of other catastrophic scenarios, those that are post-nuclear such as global warming? In the final section, some parallels are drawn between the artists we have examined and the future ability of critical art to address issues with science, rather than perform uncritical services.

## **New potentiality**

In a recent article 'From Organisation to Network: The MIT Center for Advanced Visual Studies', Melissa Ragain (2015), highlights the work of Stan VanDerBeek, one of Kepes selected artists in residence, who recognized the increasingly social role for the artist.

*... the artist 'must find ways to come out of his isolation from his community. He must find ways to unite technology and the human condition ... . He must find ways to investigate, to document, to decorate, to criticize, to love ... and add meaning to the life we are all shaping.'* (Ragain 2015 cited in Stan VanDerBeek 1967)

As artist engagements with society including science continues to evolve and spread, we might add that in a period of post-nuclear catastrophe, in which nuclear threat competes with environmental change and other human-driven conflicts, art and science has to take its responsibilities beyond the service driven agenda of communications and public understanding alone. Part of this is a collaborative approach to art-making, one in which artists and scientists once again work together in forms of interdisciplinary research that move beyond current models and modes (see also Barry, Born, and Weszkalnys 2008). In this respect, we must first think through how science might be more critically aware, and what role artists might play – hacking into the thinking, practices and data that science produces.

Firstly, if we consider the area outlined in the opening section, and that of Kepes, where a positivist attitude toward science shapes art, it can be argued that this approach is characterized by a philosophical and empirical assertion in which science-driven cultural forms both service and confirm scientifically claimed insights, communications and technologies to a wider public. This includes science as either a force for good or a morally neutral force, but is nonetheless part of military concerns, from defence/weapons systems development to cyber security and intelligence gathering, for example. On the other hand, it embraces life sciences, clinical research and advances in health and well-being, whilst often ignoring the multitude of diseases and conditions for which drugs are not developed, or new treatments and applications which test ethical limits without prejudice – yet test the limits of our ethical frameworks. Science is not neutral, and one of the steps we need to take together is to rethink the ways in which we allow for engagement with the issues described. In this respect the work of artists who draw on other models of thinking in order to construct new visions and applications need to be supported. A number of marginal institutions and organizations are now emerging that might drive this forward, such as Rich Pell's Center for Post Natural History, in which the full potential of human impact on life is explored through a factual, evidence based approach to science monsters. Secondly, as we see an increasing interest in a disruptive (innovation-led) approach from design within what we term as the knowledge economy, pointing to a creative/industrial encounter in which 'research and development' of science is applied through new technology, we must determine to what end is disruption as innovation productive? As defined by the science/design sector, innovation currently works to identify and support creativity in respect of ideas of service to the aforementioned knowledge economy, such as service

innovation, technology interfaces, human centred design etc. It is not however a neutral form of disruption, but openly positioned to disrupt into a market economy as part of its agenda to increase new forms of market growth. However, there are some interesting alternatives emerging to this commercially driven agenda. Some EU based University Research funding is now focussed on socially engaged projects. In the USA, the Biodesign Challenge run by Genspace in New York is currently working with Art and Design students worldwide. But how risky will this space become, and what kinds of radical and critical voices will emerge? What will government, science and capital really be prepared to support, what kinds of constructive future can it envision?

If we are to take on board the ideas of a critically informed experimental generation – that of Latham, Metzger, Kepes – we must find ways to support critical inquiry in art and science; investigations into the ideas, impact, scale and range of science, from artists who might promote a philosophy of time through to the non-technological implications of entropy. We must embrace the potential of destruction not as an act in and of itself, but as vehicle towards new ways of thinking. In this respect, the drivers towards an economic utilization of knowledge for power might be subtly moved away from their own destructive paths, not their intention, but the affect of walking blind into future catastrophe. It is in this respect that the University sector, which today fosters artists working with science and scientists, may have some role to play, not as a corrupting power base – as with Kepes, but one modelled from investigation of emerging and urgent matters of interest to scientists and artists alike. For example, artists who work with topics ranging from environmental data – such as Tom Corby (UK), through to environmental health – Natalie Jermijenko (USA), or even as marginal critically positioned institutions, such as Symbiotica (AU) based at the University of Western Australia are all exploring models to make this happen. In some cases however, the University's also needs to embrace non-academic methods, risk taking and 'undisciplined' modes of engagement with the public. Office of Experiments<sup>10</sup> founded in 2004 whilst in conversation with Latham, seeks to undertake this kind of research with academics within the University, as well as artists, activists and enthusiasts working in the public realm.

The relational field of critical art and science has long been shining a searching and unforgiving light onto science, its practices and, in many cases, limitations in vision, language or application of values. Today, those that carry these critical ideas forward are not engaged in this interdisciplinary project to produce better science, greater insights into or communication of scientific ideas, but examine science as an epistemological framework to better understand our social, ethical and environmental consciousness, to extend art's range, its language and vision into areas beyond the display function, or the spectacle of the museum. In this respect, whilst Kepes vision of art and science in the University was flawed, new forms of critical art and science

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<sup>10</sup> Office of Experiments was founded by Neal White in 2004 whilst working on a project with Danish architects N55. It has since undertaken a range of projects that examine the ethical and critical spaces, enclosures and networks of science. As with ISMI and other artist led institutions, it is a non-legal entity, a network of actors interested in subjects ranging from ethics and data science through to activism and citizen science. It draws together disparate individuals to form a unified field of practice, one that allows for different ideas and theories to come together in new and experimental forms.

practices that emerged during the 1960–1970s point to alternative modes of practice – often radical and even destructive in their initial appearance. In contemporary terms, however, instinct in pointing to the compulsion of the artists to draw on emerging ideas in science and technology in order to take their own vision forward is still uneven ground, science’s adoption of computer technologies, and their subsequent ubiquity in the creative space of artists and public alike, may make the potential of hacking into other disciplines a strategy that is now becoming more feasible. As we have learned, hacking disciplines can lead to a form of destructive art; a constructive critical response to the rationality of the scientific/technical – key to the very context in which our current slow burn yet auto- destructive instincts play out on a global scale. As these artists remind us, there is a choice.

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