Contemporary art and patents

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This article investigates whether contemporary art can or should be protected by patent law. The investigation commences with a working definition of contemporary art and then examines the way that patent law has treated fine art in the US, UK and Australia, and whether this treatment would extend to contemporary art. A number of examples of patents granted to types of contemporary art are reviewed.

Keywords: *aesthetic creations, art, patents*

INTRODUCTION

It is a trite observation that artworks are protected by copyright law.¹ Indeed, in the first international copyright convention – the Berne Convention for the Protection of Literary and Artistic Works, 1883 – Article 2(1) defined ‘artistic works’, the subject of copyright protection, as including: ‘works of drawing, painting, architecture, sculpture, engraving and lithography’. Since the 1960s it has been asserted that patent law is also available to protect artworks, art techniques and artists’ requisites.

This date is taken from when the French artist Yves Klein was said to have obtained a patent for the colour ‘International Klein Blue (IKB)’, as well as for the artistic technique of using naked models covered with paint as ‘living brushes’ to imprint the images of their bodies upon a white canvas at his *Anthropometries of the Blue Epoch* exhibition in Paris, March 1960.² More recently, in the final quarter of 2013, an exhibition, *Patent Pending*, was held at the ZERO1 Garage in San Jose, California featuring ‘art-works by contemporary artists that have either resulted from, or led to, a patent that the artist has either received ... or is patent pending’.³

This article will examine the veracity of these claims of patenting for art, as well as the general applicability of patent law to contemporary art.

PATENTING AND FINE ART

British patent law derives from the Statute of Monopolies, 1623. Section 6 of that statute permitted the grant of patents for 14 years to inventors for the ‘sole working

* I am grateful for the comments of an anonymous reviewer.

1. See eg Simon Stokes, *Art and Copyright* (Hart Publishing, Oxford 2012); Elena Cooper, *Art and Modern Copyright: The Contested Image* (Cambridge University Press, Cambridge 2018).

2. Alistair Sooke, ‘Yves Klein: The Man who Invented a Colour’ available at <<http://www.bbc.com/culture/story/20140828-the-man-who-invented-a-colour>> accessed 19 September 2018.

3. See <<http://zero1.org/exhibitions/patent-pending>> accessed 19 September 2018.

or making of any manner of new Manufactures' within the Realm. Of course, a critical question is whether artworks or art processes can be considered a 'manner of new manufactures'. The phrase was retained in the 1883 Patents, Designs and Trade Marks Act. The 1883 Act was superseded by the Patents and Designs Act 1907, which contained the definition of 'invention' by reference to the Statute of Monopolies. The 1907 UK Act and subsequent amending legislation was repealed by the Patents Act 1949. That Act also defined 'invention' in terms of 'any manner of new manufacture' within s 6 of the Statute of Monopolies. In the UK Patents Act 1977, which replaced the 1949 Act, the reference to the Statute of Monopolies was dropped from the definition of 'invention' in s 1 to bring it into conformity with the Strasbourg Patent Convention, which the UK ratified on 16 November 1977. Section 1(2)(c) of the 1977 Act excludes from patentability 'a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever'.⁴ This exclusion was held in *Grams App.*⁵ to embrace also applied art.

In the first Australian patents statute, the Patents Act 1903, s 4 defined invention in exactly the same way as the Patents Act 1883 (UK), with its reference to the Statute of Monopolies. The 1903 Act remained in place until it was replaced by the Patents Act 1952. The 1952 Act was repealed and replaced by the Patents Act 1990. The term 'patentable invention' was defined in s 18(1)(a) of the Act as 'an invention that, so far as claimed in any claim: (a) is a manner of manufacture within the meaning of section 6 of the Statute of Monopolies'. The Explanatory Memorandum to the 1990 Bill explained that this language '... invokes a long line of UK and Australian court decisions. It means little more than that an invention must belong to the useful arts rather than the fine arts.'⁶

The first detailed consideration by the High Court of Australia of the meaning of the term 'manner of new manufacture' in the Statute of Monopolies occurred in *National Research Development Corporation v Commissioner of Patents (NRDC)*.⁷ This 1959 case involved method claims concerned with the use of a known chemical composition in the eradication or control of weeds. In *NRDC* the High Court characterized as a patentable invention a method or product which created an artificial state of affairs and which had economic significance. In a dictum, which is significant for the subject of this article, the Court observed that

The point is that a process, to fall within the limits of patentability which the context of the Statute of Monopolies has supplied, must be one that offers some advantage which is material, in the sense that the process belongs to a useful art as distinct from a fine art (see *Re Virginia-Carolina Chemical Corporation's Application* (1958) RPC 35, at p 36) – that its value to the country is in the field of economic endeavour.⁸

Re Virginia-Carolina Chemical Corporation's Application was not concerned with whether fine art was patentable. It was a proceeding which joined three cases and which raised the question of what was a 'method of manufacture' under the UK Patents

4. Applying Art 52.2(b) of the European Patent Convention.

5. O/275/08, available at <<https://www.ipo.gov.uk/p-challenge-decision-results/o27508.pdf>> accessed 8 December 2018, which was applied in *Epoch Company Limited v Character Options Limited* [2017] EWHC 556 (IPEC).

6. Patents Bill 1990, *Explanatory Memorandum*, available at <http://www.austlii.edu.au/au/legis/cth/bill_em/pb1990119/memo_0.pdf> para 3.

7. (1959) 102 CLR 252.

8. (1959) 102 CLR 252 at para 22.

and Designs Act, 1907. Lloyd Jacob J looked at the early cases, such as *Mitchell v Reynolds* (1711)⁹ and *Crane v Price* (1842)¹⁰ as requiring an invention to involve the production of a useful, vendible article. Lloyd Jacob J's distinction between the product of patentable applied arts contrasted with unpatentable fine arts seems to have been derived from 'a Law Officer's Direction in 1899 upon which Patent Office practice has since been based'.¹¹ This is a thin authority for the distinction. A painting is certainly vendible and in performing a decorative function, is certainly useful.

The fine art–useful art dichotomy in *NRDC* was also derived by the High Court from a suggestion by Evershed J in *Re Rantzen's Application*,¹² where he spoke of the expression 'vendible product' as laying proper emphasis upon the trading or industrial character of the processes intended to be comprehended by the UK patent legislation. The vendibility of fine art may well meet Evershed J's emphasis.

FINE ART AND CONTEMPORARY ART

The exclusion in s 1(2)(b) of the UK Patents Act 1977 of 'artistic work or any other aesthetic creation whatsoever' raises the related questions: what is art and what is aesthetic creation? These questions are the staple of philosophical reflection¹³ and might be beyond the competence of a patent court. Alexander Gottlieb Baumgarten introduced 'aesthetics' into philosophical discourse with the publication of *Aesthetica* (1850). To the Greek philosophers aesthetics was regarded as a question of sensibility or 'responsiveness to stimulation of the senses'; the rise of the nouveau riche in Europe, for whom the possession of art was an important aspect of their social station, led to the question, 'what is good art?'¹⁴ Baumgarten answered this by characterizing aesthetics as an issue of taste, in which good taste was an evaluation of objective beauty. Although critics like Kant and Herder questioned whether aesthetics could be subject to rules or principles,¹⁵ according to Roughton, Johnson and Cook, at the time of drafting s 1(2) the aesthetic term was thought to be used in the Baumgartenian sense¹⁶ and thus susceptible to the evidence of expert witnesses.

IP Australia's *Manual for Patent Examiners* states that:

'Fine arts' are usually taken to include those arts which are the product of human intellectual activity which seek expression through beautiful or significant modes, as painting, sculpture, music and other aesthetic creations.

Consequently, in assessing the patentability of an invention which appears to encompass the field of fine arts, it will be necessary to consider whether an aesthetic or artistic effect, as distinct from a technical feature, is involved. The pure aesthetic effect of an article will not be

9. P Wms 181; 24 ER 347.

10. (1842) 134 ER 239.

11. (1958) RPC at 35.

12. (1946) 64 RPC 63 at 66.

13. Eg see George Schlesinger, 'Aesthetic Experience and the Definition of Art' (1979) 19(2) *The British Journal of Aesthetics* 167.

14. See *ibid.*

15. See Angelica Nuzzo, 'Kant and Herder on Baumgarten's *Aesthetica*' (2006) 44(4) *Journal of the History of Philosophy* 577.

16. Ashley Roughton, Phillip Johnson and Trevor Cook, *The Modern Law of Patents* (3rd ed, LexisNexis, London 2014) para 3.47.

patentable, however if the article also has a technical feature, it may be patentable, for example a tyre tread. A process or means for creating an aesthetic affect may comprise a technical innovation and thus be patentable.¹⁷

In the absence of case law on the subject, the *Manual for Patent Examiners* is mildly persuasive. It would seem to embrace also contemporary art in so far as it involves aesthetic creations, but the genesis for this section of the *Manual* is the notion of 'fine art'. That term needs to be unpacked, and it might be informative to see how it differs from 'contemporary art'.

Larry Shiner in *The Invention of Art: A Cultural History*¹⁸ claimed that 'fine art' was a concept invented in the west in the eighteenth century. Prior to this time, he considered artists as akin to craftsmen working at the direction of their patrons and employers.¹⁹ Shiner considers the arrival of 'fine art' in the eighteenth century to be precipitated by the development of a market for art among the growing middle class.²⁰ In this market 'fine art' was contrasted with usefulness and was treasured because of its solely aesthetic quality. In the art galleries and museums which were being established at that time, the public was required to devote its sole attention to the displayed works.²¹ By the beginning of the nineteenth century art had acquired almost a religious significance. This may explain, in part, John Ruskin's notorious attack on James McNeill Whistler's *Nocturne in Black and Gold: The Falling Rocket* (c. 1874), which was on display in the recently opened Grosvenor Gallery in London. Ruskin wrote in *Fors Clavigera* that the owner of the Gallery

ought not to have admitted works into the gallery in which the ill-educated conceit of the Artist so nearly approached the aspect of wilful imposture. I have seen, and heard, much of Cockney impudence before now; but never expected to hear a coxcomb ask two hundred guineas for flinging a pot of paint in the public's face'.²²

Whistler sued Ruskin for £1,000 in damages for libel. The celebrated trial of November 1878, awarded Whistler damages of one farthing without costs,²³ possibly indicating a judgement against the emerging Impressionist art movement, to the perceived detriment of fine art.²⁴

Impressionism was considered to be the commencement of 'modern art', a genre which continued until the late 1960s, ending with Abstract Expressionism.²⁵ 'Contemporary art' was a reaction to preceding modern art movements, and had its genesis in the Pop Art movement of artists like Andy Warhol and Roy Lichtenstein

17. <http://manuals.ipaaustralia.gov.au/patents/Patent_Examiners_Manual.htm#national/patentable/2.9>.

18. University of Chicago Press, Chicago 2001.

19. Ibid 47–52.

20. Ibid 141.

21. Ibid 143–4.

22. See *Documents associated with: 1st Summer Exhibition, Grosvenor Gallery, London, 1877*, available at <<https://www.whistler.arts.gla.ac.uk/correspondence/exhibit/display/?rs=10&exhibid=LoGro-1877&sort=>>> accessed 19 September 2018.

23. *The Times*, 27 November 1878, 11.

24. See Linda Merrill, *A Pot of Paint: Aesthetics on Trial in Whistler v Ruskin* (Smithsonian Institution Press, Washington, DC 1992).

25. Kelly Richman-Abdou, 'What is Modern Art? Exploring the Movements that Define the Ground-Breaking Genre' (November 4, 2017), available at <<https://mymodernmet.com/what-is-modern-art-definition/>> accessed 19 September 2018.

who sought to portray mass culture.²⁶ This lasted from the 1950s to the 1970s, with an extension into the 1980s through the Neo-Pop Art movement, characterized by artists like Jeff Koons. The Pop Art style involved the reproduction of mundane objects, such as Warhol's *Campbell's Soup Cans* (1962), Roy Lichtenstein's various comic strips and Jeff Koons' balloon animals. It was followed by Photorealism or Hyperrealism, in which artists like Richard Estes, Chuck Close and Gerhard Richter often worked from photographs to paint hyper-realistic portraits and landscapes.²⁷

The latest major development of the Contemporary Art movement is Conceptualism, in which the idea behind a work of art takes precedence. Leading conceptual artists include Damien Hirst, Ai Wei Wei and Jenny Holzer.

Another contemporary art development, which will be examined below, is BioArt, which has been defined as 'a creative practice that adapts scientific methods and draws inspiration from the philosophical, societal, and environmental implications of recombinant genetics, molecular biology, and biotechnology'.²⁸

A question for a patent lawyer to ask is whether contemporary art differs so significantly from fine art as to place it outside the exclusion from patentability of fine art. If we take the example of Conceptualism, Benjamin HD Buchloh has observed that:

Because the proposal inherent in Conceptual Art was to replace the object of spatial and perceptual experience by linguistic definition alone (the work as analytic proposition), it thus constituted the most consequential assault on the status of that object: its visuality, its commodity status, and its form of distribution.²⁹

An extreme example of this trope is Andrea Fraser's *Untitled* (2003), in which the artist entered into a transaction where a male collector was to have sexual intercourse with her for a sum of money, with the resultant act being filmed. Daniel McClean has explained that in this work 'Fraser brutally links (female) prostitution and art-making with (male) power and art collecting: the sales contract is no longer an accompanying document but the invisible code that generates the work.'³⁰ This would seem to be a long way from the aesthetic primacy of fine art.

The UK and Australian position on the patenting of art may be compared with that of the USA.

CONTEMPORARY ART AND PATENTING IN THE USA

A pioneer of the relationship between contemporary art and patenting was Richard Buckminster Fuller (1895–1983), architect, design scientist, inventor and philosopher,

26. Kelly Richman-Abdou, 'Art History: What is Contemporary Art?' (11 May 2017), available at <<https://mymodernmet.com/what-is-contemporary-art-definition/>> accessed 19 September 2018.

27. John Russell Taylor, *Exactitude: Hyperrealist Art Today* (Thames and Hudson, London 2009).

28. Ali K Yetisen, Joe Davis, Ahmet F Coskun, George M Church and Seok Hyun Yun, 'Bioart' (2015) 33(12) *Trends in Biotechnology* 724.

29. Benjamin HD Buchloh, 'Conceptual Art 1962–69: From the Aesthetics of Administration to the Critique of Institutions' (Winter 1990) 55 *OCTOBER* 105, 108.

30. Daniel McClean, 'The Artist's Contract / From the Contract of Aesthetics to the Aesthetics of the Contract', *Mousse Magazine*, September 2010 <<http://moussemagazine.it/daniel-mcclean-the-artists-contract-2010/>> accessed 20 September 2018.

who demonstrated his ideas as inventions that he called ‘artifacts’.³¹ His 1981 work, *Inventions: Twelve Around One*, was a series of 13 pairs of screenprinted sheets depicting his 24 patented inventions.³² Each pair comprise a patent drawing together with a photograph of its physical realization. Reflecting the complexity of lived experience and confronting popular misconceptions about the ambiguity of space and time, the pairs of prints symbolically both joined and distinguished between ‘the practices of art making and inventing’.³³

Contemporaneous with Fuller was Kansas City artist William W Adkins. He created patent drawings and patent models based on his idiosyncratic interpretation of the requirements of the US Patent Act of 1952, such as his *Patent Pending: Hot Burning Sand Cuff*, which was a drawing of a ‘device in the desert for electric wiring around horse trailers or freight elevators’.³⁴ Margaret Doan explains that the media for Adkins ideas were ‘patents and models instead of painting and sculpture’ born of an elusive neurological condition.³⁵

LA Angelmaker (aka Robert Thill) also explored the relationship between patents and their commercial exploitation through his 1999 installation, *Reduction to Practice*.³⁶ This offered for sale or license two *Collapsible Platform Assembly Utility Patents* by Alvin S Grant,³⁷ which had not yet been worked, to ‘emphasize the often continuous and permanent state of potential between the completion of a patent and the actual production of the invention’. The artist had secured the patents by responding to an advertisement in the *Official Gazette* of the USPTO. The installation brochure asked ‘what actually constitutes completion, especially in the face of continuous disposability, neglect, decay, restoration and ruin’, and in assigning the gallery owner the role of technology transfer agent, confused the roles of artist and inventor.³⁸

An examination of the patents granted by the USPTO in the first six months of 2018 discloses a number of patents for products of assistance to artists. US Patent 9925825³⁹ was granted for a portable carry case that securely holds paint tubes for storage and transport with the added functionality of being able to hang the carry case on an easel for ease of use during painting sessions. The specification described a carry case which ‘brings organization and efficiency to the artist while

31. See <<https://www.bfi.org/dymaxion-forum/2018/09/r-buckminster-fuller-inventions-and-models-edward-cella-art-architecture>> accessed 10 December 2018. His most well-known artefact is the geodesic dome. See R Buckminster Fuller, *Inventions: The Patented Works of R. Buckminster Fuller* (St. Martin’s Press, New York 1983).

32. See <<https://www.artsy.net/artwork/r-buckminster-fuller-inventions-twelve-around-one-portfolio-of-13-prints-with-catalog>> accessed 10 December 2018.

33. Ibid.

34. Reproduced in Robert Thill, ‘Intellectual Property: A Chronological Compendium of Intersections between Contemporary Art and Utility Patents’ (2004) 37(2) *Leonardo* 117, 119.

35. Quoted in *ibid*.

36. This installation was prepared for the exhibition *L.A. Angelmaker: Prior Art: A Retrospective, 1996–1999*, held at M.Y. Art Prospects gallery in New York, 20 October to 20 November 1999, see Thill (n 34) *supra* at 122. ‘Reduction to practice’ occurs under US patent law when a patent application on a claimed invention is filed, see MPEP 2138.05 ‘Reduction to Practice’, available at https://www.bitlaw.com/source/mpep/2138_05.html, accessed 10 December 2018.

37. Alvin S Grant, US Patent No 4949647 ‘Collapsible platform assembly’, filed 27 March 1989, granted 21 August 1990; an Alvin S Grant, US Patent No 5669314, filed 1 December 1995, granted 23 September 1997.

38. Thill (n 34) *supra* at 122.

39. 27 March 2018.

also reducing stress, both physically and mentally, on the artist as the paint tubes are readily available for use, organized to eliminate searching for particular colors'. US Patent 9994714⁴⁰ was for the invention of silica protected colour pigments for use in artists' media. This invention replicated paints that were compositionally similar to the paints employed by the historical art masters, but which exhibited improved long-term colour stability. US Patent 9986817⁴¹ concerned the invention of a precision paint brush producing a focused application surface area, confining the filaments to a defined apex area. US Patent 9931886⁴² was granted for an artist's paint palette with a drip ledge groove to hold paint or water that has been removed from the paintbrush and which was designed for easy stacking. US Patent 9995004⁴³ was for artists' paper with qualities of bleed-through and show-through resistance, enabling a user to prepare artwork, sketches, designs, etc. on both sides of the sheet of material, without interference from images on the obverse side. US Patent 9955782⁴⁴ was granted for a rack for drying artists' panels or canvases which have been gessoed, painted or varnished.

In the US patents have been granted for a wide range of methods. These include a patent for a method for producing three-dimensional artwork⁴⁵ and a 'method for creating a graphic work using a five point perspective system'.⁴⁶ These methods have an overarching qualification of utility.

In the UK, by way of contrast, the High Court in *Cooper's Application*⁴⁷ expressed its hostility to the patenting of mere schemes. In Australia there has been greater sympathy for methods patents. For example, Heerey J in *Welcome Real-Time v Catuity Inc*⁴⁸ approved a patent for a method or scheme of carrying on a business according to the principles enunciated in *NRDC*. In *Grant v Commissioner of Patents*⁴⁹ the Full Federal Court said that the question was not whether a business method was patentable, but whether an invention was properly the subject of letters patent.⁵⁰ This involved an artificial state of affairs and a 'concrete, tangible or observable effect'.⁵¹ An invention proposing painting methods would seem to meet this test.

YVES KLEIN'S 'PATENTS'

As was mentioned above, Yves Klein was reported by the BBC to have obtained a patent for the colour 'International Klein Blue (IKB)',⁵² as well as for an interesting

40. 12 June 2018.

41. 5 June 2018.

42. 3 April 2018.

43. 12 June 2018.

44. 1 May 2018.

45. US Patent 9747821, August 29, 2017.

46. US Patent, 6002405, 14 December 1999.

47. (1902) 19 RPC 53 at 54.

48. (2011) 51 IPR 327 at [128].

49. (2006) 69 IPR 221.

50. Ibid at [26].

51. Ibid at [30].

52. This application was probably not entirely fanciful given the extensive patenting of dyes at the beginning of the twentieth century, see eg Johann Peter Murmann, 'The Complex Role of Patents in Creating Technological Competencies: A Cross-National Study of Intellectual Property Right Strategies in the Synthetic Dye Industry, 1850–1914', *Papers on Economics*

artistic technique for applying this paint to canvases.⁵³ Similarly, the French commentator Edouard Treppoz has identified a swing towards patent protection for artists precipitated when 'Klein applied for and obtained in 1960 a patent in his famous *Anthropometries*'.⁵⁴ In May 1960, Yves Klein deposited with the French Patent Office (INPI) an *enveloppe Soleau*⁵⁵ affirming the date of his invention, with Edouard Adam, a Parisian art paint supplier, of the paint formula 'International Klein Blue (IKB)'.⁵⁶ This was an ultramarine colour deriving its quality from the matte, synthetic resin binder in which the colour was suspended. In fact, Klein and Adam did not proceed to a full patent application, possibly because they were utilizing a polyvinyl acetate developed and marketed at the time under the name Rhodopas M or M60A by the French pharmaceutical company Rhône-Poulenc,⁵⁷ or because this colour was anticipated by Giotto's use of blue in the Scrovegni Chapel in Padua.⁵⁸

On 14 April 1961, Klein filed an application for a patent for a 'Method of decoration or architectural integration and products obtained by application of said method'.⁵⁹ This was for his method of using 'living brushes'. The Espacenet file indicates that this also did not proceed to granting a full patent.⁶⁰

PATENT PENDING

Patent Pending was an exhibition held at the ZERO1 Garage, in San Jose, California from 28 September to 20 December 2013. It was curated as 'a group exhibition that uses patents as a starting point to investigate the relationship between artists, ownership, and invention'.⁶¹ It featured artworks 'by contemporary artists that have either resulted from, or led to, a patent that the artist has either received ... or is patent pending'.⁶² *Patent Pending* was said to continue 'ZERO1's exploration of the relationship between

and *Evolution* 2002–11, Philipps University Marburg, Department of Geography. Note also *I.T.S. Rubber Limited's Application* (1979) 96 RPC 318 in which Whitford J permitted the application of a blue colour to squash balls to proceed to a patent application.

53. Alistair Sooke, 'Yves Klein: The Man who Invented a Colour' available at <<http://www.bbc.com/culture/story/20140828-the-man-who-invented-a-colour>> accessed 19 September 2018.

54. Edouard Treppoz, 'Quelle(s) protection(s) juridique(s) pour l'Art contemporain?' (2006) 2009 *Revue internationale du droit d'auteur* 51 at 60.

55. The *enveloppe Soleau*, named after its inventor, is a sealed envelope filed with INPI serving as proof of priority for inventions valid in France. It is held for five years and may be renewed for a further five years.

56. Denys Riout, *Yves Klein: L'aventure monochrome* (Gallimard, Paris 2006) 36–7.

57. Romina Rezza, Anna Brunetto, Paola Buscaglia, Oscar Chiantore, Tommaso Poli, Antonio Rava, Maria Teresa Roberto and Francesca Zenucchini (2015) 'Study on Laser Cleaning of *Sculptures-Éponge* by Yves Klein' (2015) 60(sup1) *Studies in Conservation* 582, available at <<https://www.tandfonline.com/doi/full/10.1179/0039363015Z.000000000212>> accessed 21 September 2018.

58. Barbara Bolt, 'Whose Joy? Giotto, Yves Klein and Neon Blue' (2011) 1(1) *The International Journal of the Image* 57.

59. *Procédé de décoration ou d'intégration architecturale et produits obtenus par application dudit procédé*, FR1258418 (A).

60. <https://worldwide.espacenet.com/publicationDetails/biblio?locale=en_EP&FT=E&CC=FR&NR=1258418&KC=#> accessed 21 September 2018.

61. <<http://zero1.org/exhibitions/patent-pending>> accessed 21 September 2018.

62. *Ibid.*

artists and invention and goes behind the artist's experiences navigating the patent system to reveal the complexities of owning and sharing ideas in contemporary times'.⁶³ It was said to be inspired, in part, by the change in US patent law that went into effect on 16 March 2013 and repositioned the US patent filing system from a first-to-invent to a first-to-file system, as well as in response to plans to open a US Patent and Trademark Office in Silicon Valley.⁶⁴ Participating artists were Maggie Orth, Phil Ross, Daniel Rozin, Scott Snibbe, Camille Utterback and Romy Achituv, and Catherine Richards. The patents, or pending patents of these artists are considered below.

Maggie Orth's exhibit was *The Fuzzy Apparatus, 2013*, which she described as 'a monumental patented electronic pompom, and a witty, surrealistic instantiation of my United States Utility Patent: Electronic Textile Touch Light Controller, US Patent 7054133, 2004. Viewers touch the giant pompom to turn on and dim the giant light bulb'.⁶⁵ The abstract to the patent describes it as 'a capacitive light/dimmer switch which uses soft or fuzzy fabrics made with electronic textiles instead of, or as an extension of, metal or plastic plates'. A question which would have been raised in relation to the aesthetic art–useful art dichotomy of patent law would be how to classify this art work. Orth explains on her website that

When I patented fuzzy sensors and electronic pompoms in 2004, I had conflicting intentions. As an entrepreneur, I certainly hoped to exploit my invention economically; to sell and market my fuzzy sensors as products and technology. Artistically, I saw the act of patenting an electronic pompom as a transgressive and humorous invasion into the esteemed world of technology.⁶⁶

Scott Snibbe's work for the exhibition, *Blow Up, 2005*, was 'a large-scale installation that records, transmits, and plays back human breath'.⁶⁷ Participants were invited to sit at the table and blow into a grid of small fans. Sensors captured information related to direction and velocity of the airflow, and then translated that data across a large wall of fans.⁶⁸ This work was an implementation of his patent US Patent 6923079 entitled 'Recording, transmission and/or playback of data representing an airflow'. The patent abstract stated that

Data representing one or more characteristics of an input airflow (e.g., an airflow associated with a human being, such as breath or an airflow resulting from motion of the human being, or a wind tunnel airflow) is acquired and, if necessary or desirable, processed, then stored, transmitted to a remote location, and/or played back. Playback of acquired airflow data entails generating a display airflow corresponding to the input airflow.

Snibbe's website describes him as 'a pioneer in augmented reality, gesture-based interfaces, digital video, and interactive art'.⁶⁹ It states that he 'holds over twenty-five patents, and his interactive art is in the collection of New York's MoMA, the Whitney Museum, and other institutions'.⁷⁰ His MoMA exhibit, *Björk: Biophilia, 2014*, is a 'hybrid software application (app) and music album with interactive graphics, animations, and

63. Ibid.

64. Ibid.

65. <http://www.maggieorth.com/art_FA.html> accessed 21 September 2018.

66. Ibid.

67. <<http://www.zero1.org/exhibitions/patent-pending/snibbe>> accessed 21 September 2018.

68. Ibid.

69. <<https://www.snibbe.com/bio/>> accessed 21 September 2018.

70. Ibid.

musical scoring' and was acquired by MoMA as the first app in its art and design collection.⁷¹ Snibbe's various patents and patent applications concern inventions relating to digital and interactive media.⁷² No specific mention is made in any of his patents of the application of his technology to art works. However, on his website he explains that his artwork 'is frequently interactive, requiring viewers to physically engage with diverse media that include mobile devices, digital projections, and electromechanical sculpture'.⁷³ In the tradition of conceptual art, Snibbe declares that 'by using interactivity, I hope to promote an understanding of the world as interdependent; destroying the illusion that each of us, or any phenomenon, exists in isolation from the rest of reality'.⁷⁴

Daniel Rozin's exhibit was a composite of three prints: *Sharon / West Bank*, 2003, *Uncle Sam / Candy*, 2004, *Yves and Marilyn / New York Skyline*, 2003. These contrasted the American symbol Uncle Sam with candy from consumer culture, a headshot of former Israeli Prime Minister Ariel Sharon with a map of the West Bank, and a film still of lovers Yves Montand and Marilyn Monroe with the New York skyline, with a view to exploring pop culture and politics.⁷⁵ The prints were created by using the technology in his 1997 patent, US 6552734, 'System and method for generating a composite image based on at least two input images, which enables a static, digital print to display two completely different images according to the distance of the viewer'.

Camille Utterback and Romy Achituv's installation, *Text Rain*, utilized their US Patent 6747666, 8 June 2004, 'Method and system for facilitating wireless, full-body, real-time user interaction with digitally generated text data'. This is an interactive display system that allows users to manipulate a projected image within a virtual environment. *Text Rain* allowed participants to 'use the familiar instrument of their bodies to lift and play with falling letters that do not exist in physical space. The letters respond to the participants' motions, which appear in black and white in the video projection, and over time collect to form lines from a poem about bodies and language'.⁷⁶

Phil Ross' artwork, *Mycotectural Polyominoes*, 2013, was an abstract sculpture utilizing mushrooms as building materials.⁷⁷ Ross called this new field 'Mycotecture' and *Mycotectural Polyominoes*, created by this process, resulted in organic material 'pound-for-pound stronger than concrete'.⁷⁸ Apparently, Ross filed for a patent 'as a defensive move to ensure that he could continue his work without fear of lawsuits from corporations seeking ownership of related technologies'.

71. <https://www.moma.org/explore/inside_out/2014/06/11/biophilia-the-first-app-in-momas-collection/> accessed 21 September 2018.

72. Eg US Patent, 10031921, 24 July 2018, Methods and systems for storage of media item meta-data; US patent application 20150220249, 6 August 2015, Methods and devices for touch-based media creation; US patent application 20150234564, 20 August 2015, Methods and devices for presenting interactive media items; US patent application 20140310335, 16 October 2014, Platform for creating context aware interactive experiences over a network; US Patent 7143357, 28 November 2006, System and methods for collaborative digital media development; US patent application 20140306987, 16 October 2014, Methods and systems for visualizing and ranking connected media content.

73. <<https://www.snibbe.com/bio/>> accessed 21 September 2018.

74. Ibid.

75. <<http://www.zero1.org/exhibitions/patent-pending/rozin>> accessed 21 September 2018.

76. <<http://www.zero1.org/exhibitions/patent-pending/utterback-achituv>> accessed 21 September 2018.

77. Method for Producing Fungus Structures, US20120135504A1, 31 May 2012.

78. <<http://www.zero1.org/exhibitions/patent-pending/ross>> accessed 21 September 2018.

In the case of all the inventions mentioned above, their practical application is self-evident and indeed, articulated in the patent documents. For example, the abstract to Ross' patent mentions that the 'invention provides a fungal substrate which could be molded, and easily and cheaply pre-processed to precise geometric specifications. The organically derived building materials also incorporate layers of structural reinforcements to improve load bearing and other structural capacities'.⁷⁹ The disqualification from patenting art of a purely aesthetic quality would not seem to apply to contemporary art.

PATENTING AS ART

Robert Thill instances Joseph Scanlan's use of his utility patent 'Plant growth medium'⁸⁰ as an example of art-making which fused pop art with conceptual art.⁸¹ The patent concerns a mixture of coffee grounds with commercial and industrial waste such as gypsum, sawdust and Epsom salts, which could be used as a medium for growing plants. Scanlan's *Pay Dirt*, was a portfolio which depicted a mound of the growing medium into which a shovel had been inserted, a representation of the fermentation of the materials comprising the medium, a series of drawings depicting the packaging and branding of the soil and pictures of the final product. Scanlan explained to Thill that 'no matter the form an idea takes – patents, recipes, mass-produced products – it is art ... The patent was a way of collapsing intellectual rigor with commercial appeal.'⁸² Scanlan was apparently pleased by the way 'the legal structure of intellectual property strains under the absurdity of a recipe for dirt', and explained that 'where most people tend to critique intellectual property in the deconstructive/Napster/hippie sort of way, I prefer to adhere as closely possible to the system and let it celebrate/critique itself'.⁸³

In a similar deconstruction of the patenting process, Canadian artists Catherine Richards and W Martin Snelgrove, in the 2013 *Patent Pending* exhibition, displayed a collage including the patent they applied for on 1 May 2003 for an invention entitled 'Method and Apparatus for Finding Love'.⁸⁴ The abstract of the patent described the invention as 'an apparatus ... which, carried by or embedded in a lonely or socially inept individual, communicates with like devices in such a way as to divine the likelihood of attraction due to relative sexual, social, intellectual or spiritual interests of the bearers'. The diagrams filed with the application included linear depictions of *Lady with an Ermine* by Leonardo da Vinci (1483–90), Bronzino's *Venus, Cupid, Folly and Time* (c. 1544–45) and *Saint Sebastian* by Rubens (1615). Superimposed upon the drawings were earrings, nose studs, nipple clips, etc. The patent examiner appears to have objected to these additions, requesting that they be removed.⁸⁵ The application cited Marcel Duchamp's *The Bride Stripped Bare by Her Bachelors* (1915–1923) as prior art. The application does not appear to have proceeded to grant. This is probably irrelevant as the artists had incorporated the application in an artwork which took its title

79. <<https://patents.google.com/patent/US20120135504A1/en>> accessed 21 September 2018.

80. US Patent No. 6,488,732, filed 9 May 2001, granted 3 December 2002.

81. Thill (n 34) supra at 122–3.

82. Ibid 123.

83. Quoted in ibid.

84. US Patent Pub. No.: US 2003/0083544A1.

85. See <<http://www.fondation-langlois.org/e-art/e/catherine-richards.html>> accessed 17 September 2018.

from the name of the invention and which comprises a copy of the patent application in a vitrine, as well as electronic circuits, sensors and line drawings transferred to paper. Hanging close to this artwork was the objection to the additions taken by the patent examiner. The artists explained that:

We must get quite close to the display before its opaque glass becomes transparent, allowing us to view a patent application. In a display case, the application seems inaccessible and distant; no longer an everyday text, it is a protected document. In fact, our access to it is only partial, for like its subject, it must be at once cleverly revealed and hidden, much in the way that a patent signifies ownership of an idea or an invention that merits protection.⁸⁶

A particularly arresting example of patenting as art is Luis Camnitzer's 1997 installation *Patentanmeldung* (Patent Application). Camnitzer was born in Germany in 1937 and had fled with his family to Montevideo, where he became one of Uruguay's leading conceptual artists before settling in the US in 1964.⁸⁷ His *Patentanmeldung*, exhibited at the Galerie Basta in Hamburg, consisted of a single lamp beneath which was a white carpet, an etched glass table, and 19 photographs of grass-seeded earth. Etched into the table were two architectural sketches from a November 1942 German patent application for a crematorium.⁸⁸ Wrapped around the edge of the table was a quotation in German taken from an interrogation by a Russian military tribunal of Fritz Sander, an engineer for Topf & Söhne, the firm that supplied Auschwitz, Birkenau, Buchenwald, Dachau, Gusen and Mauthausen with crematoria. In translation⁸⁹ that text reads:

I decided to build a high-capacity crematorium. In November 1942, I finished with the plans for the crematorium for mass cremation and turned them in to the Imperial Patent Office in Berlin. The crematorium was supposed to function like an assembly line, with the corpses being carried without interruption on a grate so that the crematorium could be kept going constantly. The patent couldn't be registered because it was classified as top secret.⁹⁰

Camnitzer explains that it was Sander's 'bitterness of the inventor' that drew him to this subject matter: 'His intellectual property was not recognized by the most prestigious office in his line of work. It is equivalent to a museum not accepting our art as valid.'⁹¹

BIOART

The phrase 'BioArt' was coined by the Brazilian-born, American artist, Eduardo Kac, in relation to his artwork *Time Capsule* – a webcast and television broadcast on 11 November 1997 of the implantation of an animal identification microchip into the artist's ankle.⁹² Kac's subsequent productions involved the deployment of DNA to create artworks, inevitably precipitating a range of controversies. Typical among

86. Ibid.

87. See Luis Camnitzer, 'Hans Herzog in Conversation with Luis Camnitzer', in Hans Michael Herzog and Katrin Steffen (eds), *Luis Camnitzer* (Hatje Cantz, Berlin 2010) 40ff.

88. Reproduced in Patrick Greaney, 'Last Words: Expression and Quotation in the Works of Luis Camnitzer' (2014) 89(1) *The Germanic Review: Literature, Culture, Theory* 94 at 106.

89. Ibid at 105, 107.

90. Greaney reports that Topf & Söhne did finally get the patent in 1953 and that Sander's patent application was also the subject of a play by the Dutch-Israeli writer Wim van Leer, under the title *Patent Pending* and *D.R.P. 861731* (German Imperial Patent 861731), ibid at (n 42).

91. Quoted in Greaney at 107.

92. See <<http://www.ekac.org/figs.html>> accessed 21 September 2018.

these was his 2000 work *GFP Bunny* (GFP for green fluorescent protein).⁹³ He announced⁹⁴ that he had commissioned the ‘creation’ of a transgenic bunny named Alba and his publicity campaign included a picture of him holding a white rabbit and an image of a rabbit photographically enhanced to appear green.⁹⁵

The green fluorescent protein was extracted from the jellyfish *Aequorea Victoria* and spliced into the zygote of one of Alba’s forebears and was apparently manifested when illuminated by a special spectrum of light.⁹⁶ Kac freely admitted that by this bioengineering and the integration of Alba into his family life he sought to provoke discussion of the art/science interface, all of which are features of the BioArt movement.⁹⁷ Alba was developed by France’s Institut National de la Recherche Agronomique (INRA). It insisted on retaining the rabbit on its premises, which resulted in a ‘free Alba’ campaign, which became part of the performance aspect of Kac’s creation.⁹⁸ For example, he conducted a ‘Free Alba’ campaign in newspapers around the world⁹⁹ and hosted public installations at Le Lieu Unique, Nantes, France, from 14 March to 4 May 2003¹⁰⁰ and at the gallery Laura Marsiaj Arte Contemporânea, Rio de Janeiro, from 19 September to 21 October 2004.¹⁰¹ He posted images of Alba in several neighbourhoods of Paris, including Le Marais, Quartier Latin, Saint Germain, Champs de Mars, Bastille, Montparnasse and Montmartre between 3 December and 13 December 2000.¹⁰²

The use of DNA to create artworks predated Kac. For example, *Microvenus* was a collaboration between artist Joe Davis and molecular geneticist Dana Boyd in 1986 in which ‘an ancient Germanic rune representing life and femininity was encoded into a binary image and introduced into bacteria as a 28-mer synthetic DNA molecule’.¹⁰³

It should also be noted that there are a number of BioArtists who have succeeded Kac and who have incorporated genetic material into their creations. In Western Australia, Ionat Zurr and Oron Catts founded Tissue Culture and Art (TC&A) in 1996 as ‘an open ended research project, exploring the use of tissue technologies as a medium for artistic expression’. They held their first exhibition in 1998.¹⁰⁴ In 2000 they created SymbioticA at the University of Western Australia as a research centre enabling artists to experiment with life sciences. Zurr and Catts specialize in projects involving techniques of regenerative medicine and tissue engineering where cell types are grown on

93. See <<http://www.ekac.org/gfpbunny.html>> accessed 21 September 2018.

94. Eduardo Kac, ‘GFP Bunny’ <<http://www.ekac.org/gfpbunny.html#gfpbunnyanchor>> accessed 21 September 2018.

95. Ibid.

96. See Eduardo Kac, *Telepresence and Bio Art* (University of Michigan Press, Ann Arbor 2005) at 266.

97. See *ibid.*, 265–6; Lori B Andrews, ‘Art as a Public Policy Medium’, in Eduardo Kac (ed), *Signs of Life: Bio Art and Beyond* (MIT Press/Leonardo Books, Cambridge 2007) 125–50.

98. See <<http://www.ekac.org/gfpbunny.html>> accessed 21 September 2018.

99. See Eduardo Kac, ‘Free Alba’ at <<http://www.ekac.org/freealba.html>> accessed 19 October 2017.

100. See <http://www.ekac.org/alba.publicart.html>, accessed 19 October 2017.

101. See <<http://www.ekac.org/rabbitremixinrio.html>> accessed 19 October 2017.

102. See ‘GFP Bunny. Paris Intervention’ at <<http://www.ekac.org/albaseven.html>> accessed 19 October 2017.

103. J Davis, ‘Microvenus’ (1996) 55 *Art Journal* 70, referred to in Yetisen et al. *supra* (n 28) at 728.

104. Oron Catts and Ionat Zurr, *Tissue Culture & Art Stage One, Exhibition Catalogue* (PICA Press, Perth 1998).

biodegradable synthetic scaffolding. They have employed the term ‘semi-living’ to describe their work with these materials,¹⁰⁵ and define a semi-living entity as ‘a new, autonomous entity located on the fuzzy border between the living and the non-living, the organically grown and the constructed, and the object and the subject’.¹⁰⁶ An example of this is ‘Meart – the semi living artist’, assembled from neurons from embryonic rat cortex and ‘Wetware’ – grown over Multi Electrode Array (MEA) and ‘software’ interfacing between the wetware and a robotic (drawing) arm.¹⁰⁷

Collaborations between SymbioticA and Stelarc, an Australian performance artist and professor at the School of Design and Art (SODA), Curtin University, Perth have involved the construction of a quarter-scale replica of Stelarc's ear using cells seeded over a polymer scaffold and the surgical implantation of an ear-shaped Medpor (a porous, biocompatible material) scaffold into the artist's own left forearm in 2006.¹⁰⁸

In his description of *GFP Bunny*, Kac declares that ‘while every past civilization has conceived and celebrated numerous imaginary creatures, never before Alba has an artist imagined a living mammal and then proceeded to make it a reality’.¹⁰⁹ He explains that the ‘GFP Bunny’ project is ‘a complex social event that starts with the creation of a chimerical animal that does not exist in nature’.¹¹⁰ Alba is described as ‘an albino rabbit, which glows with a bright green light when illuminated with blue light and was created with an enhanced version of the green fluorescent gene found in the jellyfish *Aequorea Victoria*’.¹¹¹ It is interesting, and perhaps legally significant, to consider whether the artistic ‘creation’ of the *GFP Bunny* is the same thing as ‘invention’ in the patent law sense.

A search of the database of the United States Patents and Trademarks Office (USPTO) for ‘green fluorescent protein’, conducted on 23 April 2019, reveals 25 959 patents.¹¹² The Nobel Prize in Chemistry 2008 was awarded jointly to Osamu Shimomura, Martin Chalfie and Roger Y Tsien ‘for the discovery and development of the green fluorescent protein, GFP’.¹¹³ As the press release of The Royal Swedish Academy of Sciences, pointed out: ‘The remarkable brightly glowing green fluorescent protein, GFP, was first observed in the beautiful jellyfish, *Aequorea victoria* in 1962. Since

105. See Oron Catts and Ionat Zurr, 'Growing Semi-Living Sculptures: The Tissue Culture & Art Project' (2002) 35(4) *Leonardo* 365.

106. Ionat Zurr and Oron Catts, 'An Emergence of the Semi-Living', in *The Aesthetics of Care? The Artistic, Social and Scientific Implications of the Use of Biological/Medical Technologies for Artistic Purposes*, presented by SymbioticA & The Institute of Advanced Studies, University of Western Australia, Perth Institute of Contemporary Arts, 5 August 2002, available at <http://www.tca.uwa.edu.au/publication/THE_AESTHETICS_OF_CARE.pdf> 67 accessed 21 September 2018.

107. The first public outcome of the project (Fish & Chips – stage 1) was presented in the Ars Electronica Festival, ‘Takeover’, 2012, see Guy Ben-Ary and Thomas DeMarse, ‘Meart (AKA Fish and Chips)’ at 57 <www.fishandchips.uwa.edu.au/project/publications.html> accessed 25 April 2019.

108. See Oron Catts and Ionat Zurr, 'Growing for Different Ends' (2014) 56 *International Journal of Biochemistry & Cell Biology* 20, 27.

109. Eduardo Kac, 'GFP Bunny', available at <<http://www.ekac.org/gfpbunny.html>> accessed 21 September 2018.

110. Ibid.

111. Ibid.

112. <<http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi/nph-srch%2Fsearch-bool.html&r=0&f=S&l=50&TERM1=%93green+fluorescent+protein%94&FIELD1=&co1=AND&TERM2=&FIELD2=&d=PTXT>> accessed 23 April 2019.

113. See <https://www.nobelprize.org/nobel_prizes/chemistry/laureates/2008/> accessed 21 September 2018.

then, this protein has become one of the most important tools used in contemporary bioscience.¹¹⁴ This large number of patents embraces a wide variety of applications. A key patent is that granted to Martin Chalfie in 2000, having been filed on 9 September 1994, which claims ‘a method to produce a fluorescent mutant of green fluorescent protein of *Aequorea victoria*[;] ... culturing the introduced cells in conditions permitting expression of the green fluorescent protein and the protein of interest; and selecting the cultured cells which express green fluorescent protein...’. Kac freely acknowledges his debt to this pioneering work, citing the scientific literature¹¹⁵ and a 1998 book by Chalfie and collaborators on GFP.¹¹⁶ This would seem to dispose of any patent novelty claim which Kac might have had.

*GFP Bunny*¹¹⁷ raises the question as to whether Kac is the inventor of the relevant gene, or the process by which the artwork is created. As Kac explained, *GFP Bunny* ‘was accomplished with the invaluable assistance of zoosystemician Louis Bec and scientists Louis-Marie Houdebine and Patrick Prunet’,¹¹⁸ working at the laboratories of INRA. Some controversy was generated by the refusal of INRA to allow Kac to remove ‘Alba’ from its laboratory. Kac’s response ‘to the laboratory’s retraction of Alba’s liberty’ was to fly ‘a flag outside of his home, sporting a silhouette of a green rabbit’.¹¹⁹ Inevitably, an artist who is not an expert in biotechnology is going to have to rely upon the expertise of others. In this situation, can the artist be considered a joint or co-inventor?

The Australian law on joint inventorship follows the US law, which requires that each party performs a step that materially contributes to the invention that results from all the steps taken together.¹²⁰ The roles of joint inventors do not have to be equal, but must involve a qualitative contribution.¹²¹ As is mentioned above, the isolation and insertion of the GFP gene was the pre-existing invention of others. It is difficult to characterize the suggestion of the insertion of the GFP gene into a rabbit as being an act of joint invention. The case law suggests that one does not become a joint inventor by being the first to observe a useful property or effect of an invention.¹²² In a survey of the US case law Harris observes that inventorship is strongest for the person ‘who has done the nitty-gritty detailed work involved in creating the operable invention, as opposed even to that person whose broad, general concept may be the most important single concept of all those involved ... but who was not involved in the detailed work’.¹²³

114. See <https://www.nobelprize.org/nobel_prizes/chemistry/laureates/2008/press.html> accessed 21 September 2018.

115. See Eduardo Kac, ‘GFP Bunny’, available at <<http://www.ekac.org/gfpbunny.html>> accessed 21 September 2018.

116. Martin Chalfie and Steven Kain, *Green Fluorescent Protein: Properties, Applications, and Protocols* (Wiley-Liss, New York 1998).

117. <<http://www.ekac.org/geninfo2.html>> accessed 25 April 2019.

118. <<http://www.ekac.org/gfpbunny.html#gfpbunnyanchor>> accessed 21 September 2018.

119. Ibid.

120. *McGill University v Bionamics Ltd* (2007) 72 IPR at 149, following *Primmcoy Pty Ltd v Teer* (2003) 60 IPR 164 and *Monsanto Co v Kamp* 269 F. Supp. 818 (D.D.C. 1967).

121. *Polewood Pty Ltd v Foxwood Pty Ltd* (2008) 165 FCR 527, [33].

122. *Consolidated Aluminum Corp. v Foseco Int’l Ltd.*, 10 U.S.P.Q.2d (BNA) 1143, 1172 (N.D. Ill. 98 8), *aff’d*, 716 F. Supp. 316 (N.D. Ill. 1989), *aff’d*, 910 F.2d 804 (Fed. Cir. 1990).

123. Robert W Harris, ‘Conceptual Specificity as a Factor in Determination of Inventorship’ (1985) 67 Journal of Patent & Trademark Office Society 315.

On this basis, Kac was probably not a joint inventor of the *GFP Bunny*. No conclusion can be reached in relation to *Genesis* as detail is not provided as to the persons involved in this creation and their respective contributions.

A number of BioArtists seek to raise questions about the role of science in society, exploring the gap between intellectual discourse, critical discourse, analytical discourse and the reality of art. Kac adopts a more prosaic posture, reiterating Duchamp's observation that 'an artist has got to live'.¹²⁴

It is as simple as that. He needs to live. So what does a museum offer? It becomes part of enabling you to work, to live. The museum buys, and you continue to make art. Just like you need to have a job and to live and get money from somewhere, the artist needs to sell to continue producing.¹²⁵

The BioArt works of Kac, not only have an appeal to viewers of those artworks in the museum, but they also raise the question of the role of patented processes concerning the use of DNA in the creation of artworks. Interestingly, a US patent filed on 28 April 2005 and granted in 2014 concerns 'an image support medium for creation of an aesthetic image that is a work or object for display' made from a smart or intelligent material, including DNA.¹²⁶ The support medium involved in this invention can comprise stimuli, triggers or influences that cause the smart or intelligent material to respond by changing shape, size, volume, density, light properties, colour, appearance, and/or another physical property of the aesthetic element. This patent may embrace a number of BioArt works. Of course, if challenged, the inventors have to establish the novelty of their particular invention.

There are now plenty of examples on the internet of enterprises offering to create artworks from the DNA of contributors.¹²⁷ Philosophically, these examples are a significant distance from the social, political and cultural objectives of the original bioartists, but reflect Kac's pragmatism.

CONCLUSION

The patenting of contemporary art in the USA is probably not an indication that patent law has adopted a more liberal attitude than previously to the patenting of art, but is more probably an indication that contemporary art is viewed differently from fine art. In the case of fine art, the dominant feature is its aesthetic appeal, whereas with some contemporary art, as the above examples indicate, there is also a substantial ingredient of utility, as well as the exploration of the transactional relationship between art and society.

The obstacle to the patenting of fine art was the dichotomy which had been constructed in patent law between fine art and useful art. This dichotomy can be traced back to the

124. Jens Andermann and Gabriel Giorgi, 'We Are Never Alone: A Conversation on Bio Art with Eduardo Kac' (2017) 26(2) *Journal of Latin American Cultural Studies* 279, 296.

125. *Ibid.*

126. US Patent 8921473, granted December 30, 2014.

127. Eg <<http://www.dna11.com/>> 'We create personalized DNA Portraits'; <<http://t.co/ZmKsTjgm29>> 'Now You Can Buy Art Created from your DNA'; <<https://www.facebook.com/dnaart.aus/>> 'We create ready to hang DNA artworks'; <<http://www.skite.com.au/2015/04/20/dna-art-personalised-portraits-from-your-own-genetic-information/>> accessed 21 September 2018.

manner of manufacture requirement of the Statute of Monopolies. However, the policy of patent law and the interpretation of method of manufacture can change in response to modern developments. Fine art today could be regarded as the product of a vendible invention with obvious utility.

The greater sympathy in the US for the patenting of artistic methods and artists' requisites may be derived from the sympathy of US copyright law,¹²⁸ in which the aesthetic portions of an item are protectable as a copyright work, provided that they can exist independently of the utilitarian aspects of an article.¹²⁹ For example, in *Trans-World Mfg. Corp. v Al Nyman & Sons, Inc.*¹³⁰ copyright protection was denied to a decorated spectacles case because the aesthetic aspects were not separable from the functional aspects.¹³¹ Obviously, if this kind of principle were applied to patent law, patent protection would be denied to a piece of art because aesthetic aspects would dominate, but patent protection could be extended to artistic methods because functional aspects would be paramount.

It should be noted that the law has demonstrated a capacity to evolve in its consideration of art works. For example, in *Rogers v Koons*¹³² the US 2nd Circuit Court of Appeals in 1992 found that Koons' *String of Puppies* sculpture infringed Art Rogers' copyright in his photograph *Puppies*. On the other hand, in 2006, in *Blanch v Koons*¹³³ the same court found that Koons had engaged in fair use when incorporating a portion of Andrea Branch's photograph of a woman's legs into a larger collage. Peter Jaszi suggested that these different results may reflect evolving cultural understandings of conceptual art.¹³⁴

To what extent is patent law capable of a similar evolution? In the UK a preliminary obstacle is, of course, the exclusion from patentability by s 1(2)(c) of the Patents Act 1977 of an '... artistic work or any other aesthetic creation whatsoever'. This raises the question of whether contemporary art involves 'artistic works' and whether, applying the concluding words of s 1(2)(c), those artistic works have to be aesthetic creations. Does conceptual art involve aestheticism?

In Australia, where there is no s 1(2)(c) equivalent in the Patents Act 1990, the High Court has indicated a degree of flexibility in formulating patent doctrine. In its 2013 determination in *Apotex Pty Ltd v Sanofi-Aventis Australia Pty Ltd*¹³⁵ the High Court rejected on policy grounds the proposition that medical treatments were not patentable. This was in the face of the previous hostility of the courts to such patents.¹³⁶ The High Court acknowledged the modern commercial context of medicine. By parity of reasoning it is open for the High Court to embrace the patentability of contemporary art. Also, as the High Court observed in *D'Arcy v Myriad Genetics*:¹³⁷

128. US Copyright Act (Title 17, U.S.C. section 102).

129. See Leonard D DuBoff, 'What Is Art – Toward a Legal Definition' (1990) 12 Hastings Communications & Entertainment Law Journal 303 at 312.

130. 95 F.R.D. 95 (D.C. Del. 1982).

131. Ibid at 96. Applied in *National Theme Productions, Inc. v Jerry B. Beck, Inc.* 696 F. Supp. 1348 (S.D. Cal. 1988).

132. 960 F.2d 301 (2d Cir. 1992).

133. 467 F.3d 244 (2d Cir. 2006).

134. Peter Jaszi, 'Is There Such a Thing as Postmodern Copyright' (2009) 12 Tulane Journal of Technology & Intellectual Property 105 at 106.

135. [2013] HCA 50.

136. See Michael Blakeney, 'The Patentability of Medical Treatments' (2017) 15(6) Bio-Science Law Review 21.

137. [2015] HCA 35.

an invention is something which involves ‘making’. It must reside in something. It may be a product. It may be a process. It may be an outcome which can be characterised, in the language of *NRDC*, as an ‘artificially created state of affairs’. Whatever it is, it must be something brought about by human action.¹³⁸

As we saw above, much of contemporary art involves ‘making’ and is brought about by human action.

The High Court in *Myriad Genetics* pointed out that in the case of a new class of claim the decision of the Court in *NRDC* did not ‘preclude consideration of policy factors informed by the purpose of the Act and considerations of coherence in the law’.¹³⁹ In its policy consideration in relation to the patenting of DNA, the High Court expressed its concern over the chilling effect of the grant of a patent on innovative activity in the new field of biotechnological invention.¹⁴⁰ This is certainly a consideration if patent protection is sought in relation to a new style or genre of painting. On the other hand, as Branson J pointed out in the Full Federal Court decision in *Grant v Commissioner of Patents*,¹⁴¹ ‘an invention should only enjoy protection of a patent if the social cost of resulting restrictions upon the use of an invention is counterbalanced by resulting social benefits’.¹⁴² The educational, entertainment and edification benefits of contemporary art, as well as an understanding of the philosophical underpinnings of art, could be urged as examples of these social benefits.

138. Ibid at para 6 (per French CJ, Kiefel, Bell and Keane JJ).

139. Ibid at para 5 (per French CJ, Kiefel, Bell and Keane JJ).

140. Ibid at para 95.

141. (2006) 69 IPR 221.

142. Ibid at [20].