The Possibilities of "Good" Generative AI in the Cultural and Creative Industries

Kate Miltner and Tim Highfield, University of Sheffield

The British Academy

Abstract

Within the last two years, the launch of prominent generative AI technologies such as ChatGPT and Midjourney has intensified debates about how AI is developed and trained, about its potential biases and blindspots, and about how these technologies could, and should, be used. These debates have been particularly visible within the artistic and creative industries, with widespread outcry about AI models being trained on artists' work without permission, and related concerns about generative AI taking work away from creative professionals. Conversely, AI is also pitched as offering many creative possibilities within culture and the arts, with a discourse around how AI is "reimagining" and "unlocking" creativity and creative practices. This discussion paper provides an overview of challenges, possibilities, and opportunities relating to generative AI and its relationship to cultural production and innovation in the UK. It explores how generative AI can form part of a "good" future for the UK's cultural and creative industries, encouraging desirable social outcomes through strategies that foreground artists' consent, remuneration, consultation in creative AI development, and the support of diverse cultural outputs.

Keywords: generative AI; cultural and creative industries; creative labor; copyright

Introduction

Fierce debates are currently taking place about the role of AI in society. There are concerns and questions about how AI is developed and trained, about its potential biases and blindspots, and about how these technologies could, and should, be used. Within the past two years, the public launch of a series of generative AI technologies such as ChatGPT and Midjourney has increased the intensity of these debates.

Generative AI is a term that commonly refers to computer models that find patterns in the data they are trained on and then create new work by attempting to mimic those patterns.[1] This is achieved through large amounts of statistical analysis. There are many kinds of generative AI models, but two of the most commonly used are large language models (LLMs), which are most frequently used to generate text, and diffusion models, which are often used in image, video, speech, and audio modification and generation.[2] Generative AI models create "new" content, including written works, visual content, and music/audio, by responding to a prompt. In most cases, a prompt is usually text or an image: the most common generative AI models are text-to-text (e.g. ChatGPT), text-to-image (e.g. Dall-E and Midjourney), image-to-image (e.g. Lensa and Remini), and text-to-audio (e.g., AudioCraft). Many of these models are proprietary and privately owned by organisations, while others (such as the Stable Diffusion model) are compiled and maintained by non-profit organisations and made freely accessible to researchers and commercial interests alike.

Perhaps unsurprisingly, the debates about generative AI have been particularly visible within the artistic and creative industries, with widespread outcry about AI models being trained on artists' work without permission,[3] and related concerns about AI taking work away from creative professionals.[4] Conversely, AI is also pitched as offering many creative possibilities within culture and the arts, with a discourse around how AI is "reimagining" and "unlocking" creativity and creative practices.[5] In this context, AI is positioned as a tool to support and expand the creative process and a source of inspiration for creatives at all levels, from professionals and established practitioners to emerging voices, amateurs, and hobbyists.

This discussion paper will provide an overview of challenges, possibilities, and opportunities relating to generative AI and its relationship to cultural production and innovation in the UK. It will explore how generative AI can form part of a "good" future for the cultural and creative industries and encourage desirable social outcomes.

[1] In this discussion paper, we are using 'generative AI' to primarily refer to particular models that have implications for the creative industries by synthesising and creating new text, visual, and audio content. As a broader concept, generative AI is a form of deep-learning where models are trained on a pre-existing dataset in order to generate responses to new prompts and queries. These encompass different types of models: Diffusion models such as Stable Diffusion work by taking the original training data, adding noise to distort it through a diffusion process, and then denoising the data to generate new outputs. ChatGPT is an example of a transformer neural network, which is pretrained on datasets to predict likely responses based on the data previously studied. There are many other AI models in widespread use (e.g. BERT in Google search) that are influential in AI learning research and development, but these are not the focus of this paper. See e.g. E.Jones, 'Explainer: What is a foundation model?', *Ada Lovelace Institute* (17 July 2023).

[2] Z. Chang, G. A. Koulieris, and H. P. H. Shum, 'On the Design Fundamentals of Diffusion Models: A Survey'. *arXiv* (2023).

[3] E. Flux, 'What does the rise of AI mean for the future of art?', *The Age* (23 December 2022). Equity, Stop AI Stealing the Show, Equity.

[4] M. Crabapple, 'Op-Ed: Beware a world where artists are replaced by robots. It's starting now', *Los Angeles Times* (21 December 2022).

[5] Adobe Communications Team, 'Generation AI: Reimagining creativity with generative AI', *Adobe Blog* (18 October 2023).

Generative AI: key concerns

Before addressing the possibilities for "good" generative AI in the cultural and creative industries, it is essential to review the dominant concerns that have arisen in relation to its widespread use and adoption. The key criticisms levied at generative AI, particularly from a creative and cultural industries perspective, tend to fall into three interrelated categories: bias-related harm, labour and rights violations, and cultural impact.

Biases / Harm

A primary critique that is levied at generative AI systems is that they create harm by perpetuating a series of discriminatory biases, including racism, sexism, ableism, and more. It is well established in the computer science and social science literatures that this is a widespread and significant problem.[6] Pinpointing the exact origins of these biases can be a challenging task, as bias can enter into an AI system at a variety of different points: the training data, any filters placed upon the training data, the training process itself, and how the model responds to a particular prompt.[7] However, independent of their origins, discriminatory material produced by generative AI systems can be distressing and have significant impact, whether that is ChatGPT perpetuating racist stereotypes,[8] Lensa creating sexualised images of women and children,[9] or Midjourney producing ableist stereotypes.[10]

Some owners of generative AI systems eschew blame for these outcomes by pointing the finger at the underlying training data that these models are trained upon;[11] while this is an oversimplification of a complex issue, it is true that training datasets have crucial influence when it comes to the outputs produced by these technologies.[12] While some organisations have proprietary datasets, many use publicly available, free-to-use datasets such as LAION-5B,[13] which has been used to train dominant AI models including Stable Diffusion and Midjourney.[14] However, because of their sheer size (billions of image-text pairs), datasets like LAION-5B are uncurated,[15] and have consequently been found to contain a range of harmful material, including "explicit images and text pairs of rape, pornography, malign stereotypes, racist and ethnic slurs",[16] as well as child sex abuse material.[17]

Labour/Rights Violations

Concerns about generative AI have come from a range of creative stakeholders, including global corporate interests like Getty Images and The New York Times,[18] to creative industry trade unions,[19] artist organisations and collectives,[20] and individual artists.[21] The collective complaints raised by these stakeholders centre on five key concerns:

1. The non-consensual incorporation of artistic material (copyrighted works, audio-visual performances) into training datasets

2. A lack of fair compensation for the use of this work

3. A lack of recourse or options for redress when the use of artists' work violates their moral rights

4. Harm to creative livelihoods

5. Lack of consultation on AI development and policymaking

These problems are framed as a compounding set of offences to artists and other creative professionals. First, artists' work is used non-consensually to train generative AI models, giving them the capacity to mimic artists' unique contributions.

6   A. Birhane, V. U. Prabhu, and E. Kahembwe, 'Multimodal datasets: misogyny, pornography, and malignant stereotypes'. *arXiv* (2021). A. S. Luccioni *et al.*,'Stable Bias: Analyzing Societal Representations in Diffusion Models', *arXiv* (2023). D. Thiel, 'Investigation Finds AI Image Generation Models Trained on Child Abuse', *Stanford Cyber Policy Center* (20 December 2023). F.Bianchi et al., 'Easily Accessible Text-to-Image Generation Amplifies Demographic Stereotypes at Large Scale', *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*, New York, NY, USA: Association for Computing Machinery (2023). pp. 1493–1504. F. Offert and T. Phan, 'A Sign That Spells: DALL-E 2, Invisual Images and The Racial Politics of Feature Space', *arXiv* (2022). T. Sandoval-Martin and E. Martínez-Sanzo, 'Perpetuation of Gender Bias in Visual Representation of Professions in the Generative AI Tools DALL·E and Bing Image Creator', *social sciences*, 13(5) (2024). T. Gillespie, 'Generative AI and the politics of visibility', *Big Data & Society*, 11(2) (2024).

7   Luccioni et al., 'Stable Bias', p.3.

8   J. A. Omiye et al., 'Large language models propagate race-based medicine', *npj Digital Medicine*, 6(1) (2023), pp. 1–4.

9   M. Heikkila, 'The viral AI avatar app Lensa undressed me – without my consent', *MIT Technology Review* (12 December 2022). O. Snow, '"Magic avatar" app Lensa generated nudes from my childhood photos', *Wired* (7 December 2022).

10   T. Crimmins, '"Do you see any diversity?": Man says AI is ableist after generating 100-plus images of "an autistic person"—and they're all white men', *The Daily Dot* (9 August 2023). M. King, 'Harmful biases in artificial intelligence', *The Lancet*, 9(11) (2022).

11   Prisma Labs, Inc., 'Lensa's magic avatars explained', *Notion*.

12   E. Denton, et al., 'On the genealogy of machine learning datasets: A critical history of ImageNet', *Big Data & Society*, 8(2) (2021). C. Buschek and J. Thorp, 'Models All The Way Down', *Knowing Machines* (2024).

13   LAION (Large-scale Artificial Intelligence Open Network) is a non-profit organisation that seeks to democratise machine learning by making "large-scale machine learning models, datasets and related code available to the general public". Based in Hamburg, LAION is composed of 21 programmers and computer science researchers. LAION-5B is its largest dataset to date, consisting of almost 6 billion text-image pairs.

12   E. Denton, et al., 'On the genealogy of machine learning datasets: A critical history of ImageNet', Big Data & Society, 8(2) (2021). C. Buschek and J. Thorp, 'Models All The Way Down', Knowing Machines (2024).

13   LAION (Large-scale Artificial Intelligence Open Network) is a non-profit organisation that seeks to democratise machine learning by making "large-scale machine learning models, datasets and related code available to the general public". Based in Hamburg, LAION is composed of 21 programmers and computer science researchers. LAION-5B is its largest dataset to date, consisting of almost 6 billion text-image pairs.

14   A. S. Levine, 'Stable Diffusion 1.5 was trained on illegal child sexual abuse material, Stanford study says',*Forbes* (20 December 2023).

15   R. Beaumont, 'LAION-5B: A new era of open large-scale multi-modal datasets', *LAION* (2022).

16   Birhane et al., 'Multimodal datasets', p. 1.

17   Thiel, 'Investigation finds...'.

18   J. G. Gatto, 'Getty Image's AI model training lawsuit in UK against Stability to proceed, *Lexology* (2023). M.Grynbaum and R. Mac, 'New York Times sues OpenAI and Microsoft over use of copyrighted work', *The New York Times* (27 December 2023).

19   Equity, *Stop AI Stealing*.

20   Center for Artistic Inquiry and Reporting, 'AI illustration open letter', *Center for Artistic Inquiry and Reporting* (2023). Human Artistry Campaign, *Human Artistry Campaign*. Council of Music Makers, 'Open letter on the DCMS roundtable on AI and the creative industries', *Council of Music Makers* (20 November 2023).

21   Crabapple, 'Op-Ed'.

Artists then have no recourse if this happens: they cannot withdraw their work from these datasets, and they have no legal means of redress when their voices or likenesses are used to create material that they find personally offensive or harmful (e.g., deepfake content). Meanwhile, value is being created for the organisations who own these models,[22] but artists are not remunerated fairly– or at all– for the use of their work.[23] This is particularly problematic as AI models are already being used to replace creative workers in some artistic disciplines,[24] negatively impacting both individual artists and entire industries. Finally, while some artistic stakeholders have been invited to engage in consultation and/or policymaking processes, it is corporate interests (e.g., record labels and film studios) that are typically involved, and not artists or creatives themselves.[25]

There are ongoing efforts and campaigns by trade unions and artist collectives to impact law and policy in the UK and beyond in relation to these concerns.[26] In the interim, creative professionals, artist organisations, and corporations have been looking to existing law to protect and enforce their rights, particularly around copyright. This has largely taken the form of copyright violation lawsuits filed by rights holders against major AI organisations.[27] Trade unions in the US have also taken action in relation to AI; protections against the impact of AI were part of the reason that the Writers Guild of America (WGA) and the Screen Actors Guild (SAG-AFTRA) went on monthslong labour strikes in 2023.[28] Some artists are also attempting to "fight back" in other ways, including the use of data "poisoning" tools like Nightshade and Kudurru,[29] which enable artists to add changes to their digital artwork that will wreak havoc on AI models if that work is scraped into an AI training set without consent.

Cultural Impact

Another concern that the advent of generative AI brings connects to the potential cultural impacts of algorithmic monoculture, the "notion that choices and preferences will become homogenous in the face of algorithmic curation".[30] Algorithmic monoculture is becoming a concern in relation to "high-stakes screening decisions" such as employment and credit,[31] but it also has implications for the generation of artistic and other cultural outputs. A reliance upon AI systems that have similar or identical underlying algorithmic capacities could result in "like-mindedness on a massive scale".[32] Given that generative AI is currently somewhat of a monopoly, with only a few organisations controlling a handful of AI systems, there is a risk of artistic content generation operating as a recursive loop, with the outputs generated by AI systems feeding back into those same models at scale. In November 2023, LAION released LAION POP, a training dataset of 600,000 high-resolution images "based on 10,000 different concepts popular on the image generation site 'Midjourney'".[33] Training AI models on data derived from generative AI systems could have a variety of impacts,[34] including the solidification of a narrow range of styles and genres that contributes to a broader homogenisation of cultural outputs. This is of particular concern given the biased representations of minoritised social groups that are often encoded into these models.

22   In March 2023, Stability AI (creator of the Stable Diffusion model) was seeking venture capital funding at a USD$4 billion valuation. OpenAI (creator of ChatGPT and DALL-E) was recently valued at USD$80 billion. K.Roof, M. Bergen, and H. Miller, 'OpenAI Rival Stable Diffusion Maker Seeks to Raise Funds at $4 Billion Valuation', *Bloomberg* (3 March 2023). Staff and agencies, 'Microsoft-backed OpenAI valued at $80bn after company completes deal', *The Guardian* (17 February 2024).

23   In an interview with The Age, Professor Toby Walsh from the University of New South Wales opined that artists are "right to be angry because there's great value being generated here, and it's not being shared with the people whose art from which it was derived". Flux, 'What does the rise of AI mean'.

24   Illustration is an area that is already being impacted; illustrators who were previously hired to illustrate book covers and to create key art for ad campaigns are being replaced by generative AI. Recent ad campaigns for a Toronto-based charity and the Queensland Symphony Orchestra received global press attention for their use of AI; the QSO campaign was mocked for its poor quality, labelled "the worst AI generated art we've ever seen" by industry union Media, Entertainment, and Arts Alliance (MEAA). E. Ofgang, 'What happens to illustrators when robots can draw robots?', *The New York Times* (4 November 2023). K.Maimann, 'This image is raising money for a Toronto charity. The only problem? It's not real', *Toronto Star*, 31 December 2022). M. Sun and S. Harmon, '"The worst AI-generated artwork we've seen": Queensland Symphony Orchestra's Facebook ad fail', *The Guardian* (6 March 2024).

25   Council of Music Makers, 'Open letter'.

26   e.g. Equity, *Stop AI Stealing*; Human Artistry Campaign, *Human Artistry Campaign*.

27   B. Brittain, 'John Grisham, other top US authors sue OpenAI over copyrights', Reuters (21 September 2023). B. Brittain, 'Judge pares down artists' AI copyright lawsuit against Midjourney, Stability AI', *Reuters* (30 October 2023).

28   D. Anguiano and L. Beckett, 'How Hollywood writers triumphed over AI – and why it matters', *The Guardian* (1 October 2023). C. Pulliam-Moore, 'SAG-AFTRA's new contract hinges on studios acting responsibly with AI', *The Verge* (18 November 2023).

29   M. Heikkila, 'This new data poisoning tool lets artists fight back against generative AI', *MIT Technology Review* (23 October 2023). K. Knibbs, 'A New Tool Helps Artists Thwart AI—With a Middle Finger', *Wired* (12 October 2023).

30   J. Kleinberg and M. Raghavan, 'Algorithmic monoculture and social welfare', *Proceedings of the National Academy of Sciences*, 118(22) (2021). p. 1.

31   Kleinberg and Raghaven, 'Algorithmic monoculture'.

32   T. H. Tran, 'Image Apps Like Lensa AI Are Sweeping the Internet, and Stealing From Artists', *The Daily Beast* (10 December 2022).

33   L. Eliot, 'AI Ethics Confronting The Insidious One-Like-Mind Of AI Algorithmic Monoculture, Including For Autonomous Self-Driving Cars', *Forbes* (19 June 2022).

34   C. Schuhmann and P. Bevan, 'LAION POP: 600,000 high-resolution images with detailed descriptions', *LAION* (2023).

What could "good" AI in the UK cultural and creative industries look like?

The UK creative industries are a priority sector for economic growth, considered to be a "global British success story" and a "unique strength" for the UK economy and the country overall.[36] The Government's National AI Strategy suggests that there is an opportunity for the UK over the next decade to "position itself as the best place to live and work with AI".[37] However, protecting the creative and cultural industries while simultaneously establishing the UK as a world leader in the AI space requires the consideration of the following questions:

1. How can creative AI systems better reflect the voices, aims, and interests of creative practitioners, rather than those dictated by business models and corporate interests?

2. How can AI be integrated into cultural production and the creative industries in ways that respect creatives' rights and alleviate concerns around inclusion and accessibility, rather than causing harm and reducing opportunities?

3. How can we ensure equal access and opportunity to a wide range of creatives, including those who are most at risk of the potential downsides of generative AI?

4. How do we ensure that the introduction of generative AI into the cultural and creative ecosystem of the UK doesn't produce, reproduce or exacerbate existing inequalities?

5. How do we avoid the risks of algorithmic monoculture, where the dominance of a few key AI models developed by major technology companies promotes a homogenisation of cultural formats and outputs?

We suggest that the UK can achieve its aims to grow both the creative and AI sectors by establishing itself as a leader for 'good' AI development that centres ethical AI development, respects the rights of creatives, and involves them in the development of technologies that have significant impact on both their livelihoods and the creative industries as a whole. In the sections that follow, we will outline possible approaches for this 'good' AI development, and also briefly examine some case studies of how AI is already being used by artists in interesting and successful ways.

'Creative' approaches to AI

The following discussion highlights four key areas for developing approaches to generative AI that recognise and value the contributions of the creative and cultural industries to these technologies: consent, remuneration, consultation, and supporting diverse cultural outputs. Collectively, these offer potential strategies for balancing the pursuit of technological innovation with the aims and rights of creative practitioners whose content and livelihoods are directly impacted by generative AI.

Consent

Artists and creative practitioners are overwhelmingly opposed to the non-consensual use of creative work to train AI models;[38] unfortunately, this has been the norm thus far. A 2024 report from the Design and Artists Copyright Society (DACS) noted that 95% of artists surveyed believed that they should be asked before any of their work was or could be used in this way.[39] Setting up a mechanism by which creatives must explicitly give permission for AI to be trained on their work is seen by artists as a prerequisite for safeguarding their rights.[40]

Greater transparency is also required to be able to verify which work an AI model has been trained on. Dataset developers have established an 'opt-out' dynamic by default, where AI model developers use whatever training data is available to them. If artists do not want to be included in training models, they first have to demonstrate that their work has been used by AI in order to request removal from datasets.[41] Even when requests for removing content are made by data subjects in relation to GDPR, the responses of AI providers have been inconsistent, inefficient, and even absent.[42]

Instead, many artists, organisations, and trade unions support the creation of an 'opt-in' model where artists actively choose and give permission for their work to be included in datasets.[43] There are already examples of this in practice; for example, DeviantArt operates under a default 'opt-out' status, where its artists have to choose to opt-in for AI training models to use their content.[44] Formalising the relationship between creatives and AI may also allow for the development of new norms around both consent and attribution,[45] so that previous work used in the generation of AI content is clearly recognised.

30   J. Kleinberg and M. Raghavan, 'Algorithmic monoculture and social welfare', *Proceedings of the National Academy of Sciences*, 118(22) (2021). p. 1.

31   Kleinberg and Raghaven, 'Algorithmic monoculture'.

32   T. H. Tran, 'Image Apps Like Lensa AI Are Sweeping the Internet, and Stealing From Artists', *The Daily Beast* (10 December 2022).

33   L. Eliot, 'AI Ethics Confronting The Insidious One-Like-Mind Of AI Algorithmic Monoculture, Including For Autonomous Self-Driving Cars', *Forbes* (19 June 2022).

34   C. Schuhmann and P. Bevan, 'LAION POP: 600,000 high-resolution images with detailed descriptions', *LAION* (2023).

35   Another concern about the impact that generative AI is having on the online content ecosystem involves the pollution of online search results with incorrect or 'hallucinated' information; an article in *The Atlantic* illustrated this issue when author Caroline Mimbs Nyce was told by Google that there was no African country that began with the letter 'K'. C. M. Nyce, 'AI Search Is Turning Into the Problem Everyone Worried About', *The Atlantic* (6 November 2023).

36   Department for Culture, Media and Sport, Creative Industries Sector Vision (2023)

37   HM Government, 'National AI Strategy - HTML version', *GOV.UK* (2022).

38   e.g. Musicians' Union, 'Culture Committee Report on AI Recognises Concerns of the UK Music Industry', *Musicians' Union* (2023).

39   DACS, 'New survey shows 89% of UK artists want the Government to better protect their work by regulating AI', *DACS* (2024).

40   DACS, 'New survey shows'.

41   K. Hays, 'OpenAI offers a way for creators to opt out of AI training data. It's so onerous that one artist called it "enraging."', *Business Insider* (29 September 2023).

42   e.g. E. Harlan and K. Brunner, 'We Are All Raw Material for AI', BR (7 July 2023).

43   S. Bearne, 'New AI systems collide with copyright law', BBC News (31 July 2023). G. Appel, J. Neelbauer, and D. A. Schweidel, 'Generative AI Has an Intellectual Property Problem', *Harvard Business Review* (7 April 2023).

44   DeviantArt, 'UPDATE All Deviations Are Opted Out of AI Datasets by team on DeviantArt', *DeviantArt* (2022).

45   D. Slater and B. Masiello, 'Beyond Copyright: Tailoring Responses to Generative AI & The Future of Creativity', *Tech Policy Press* (19 September 2023).

Consent concerns do not stop with just having approval to use certain works, however; crediting artists in the resulting generative content is also seen as essential.[46]

Remuneration

Coupled with attribution is the question of how artists' work should be compensated. Current models do not formally remunerate creators and/or other rights holders for any work that has been used to train AI models or generate new content. Licensing agreements are one potential way of addressing this. Both the Equity and the Human Artistry Campaigns have called for authorisation and licensing to be granted as a prerequisite for any application of AI within the performing arts and creative industries.[47] Licensing agreements are also seen positively by artists; 84% of DACS' respondents indicated they would sign up for one to be paid when their work was used by AI.[48]

There are examples of these arrangements already being put into place: stock image company Shutterstock has already implemented a model whereby "the many artists who were involved in the creation of each new piece" of generative AI content created on the platform are compensated,[49] and The Associated Press has made a licensing deal with OpenAI,[50] and CNN, *Time*, and Fox Corporation are reportedly discussing similar deals.[51] Registries of large AI models could be designed in ways that could help artists identify where their work has been used to train generative AI and be compensated appropriately;[52] the EU AI Act is already requiring that large generative AI models comply with transparency requirements by publishing summaries of copyrighted data that has been used for training.[53]At the same time, licensing and compensation models need to account for the potential lifespan of AI-generated content, including models trained on particular voices or likenesses. Equity's AI Vision argues that a licensing model based on one-off payments does not consider the multiple applications and longevity of the training data used or of an AI model acting 'as' a particular performer.[54]

Consultation

Incorporating creatives' voices into AI policymaking is essential to safeguarding their rights and livelihoods, and to help shape the continued development and innovation around generative AI.[55] Creative practitioners – and not just corporate rights holders – should be included in consultations and negotiations about how AI is being developed and regulated. Asking creatives how they want their work to be used in generative AI models is important both from a rights perspective and with regard to innovation, as AI tools are also important for their work and practice.

Supporting Diverse Cultural Outputs

Concerns about creative livelihoods and opportunities are not exclusively about the potential negative impact of generative AI; as will be seen in the following section, generative AI is the latest in a long line of technologies being used in, and adapted for, creative work.[56] Supporting alternative approaches to generative AI development outside of major studios, record labels, and tech and media companies may allow creatives to use generative AI for new experiments and production of their work. Artist-driven innovation could push AI technologies in new and unexpected directions. This is important for avoiding the potential impacts of algorithmic monoculture in relation to cultural homogeneity.[57] However, training for generative AI tools is not something that is accessible or offered to many artists; in order to help support and incentivise creativity, more opportunities for training and experience with AI are needed for creative practitioners seeking to incorporate this into their work,[58] as well as access to the required tech infrastructure.[59]

46   Training models on artists' work is often very explicit: a list of 16,000 artists allegedly used to train the Midjourney model was accidentally leaked in January 2024. Shutterstock partnered with OpenAI and LG in 2021, and is now directly compensating artists whose work was used to train DALL-E or EXAONE, and is also compensating artists "for the future licensing of AI-generated content through the Shutterstock AIgenerated image tool." It is also possible that a tool along the lines of YouTube's ContentID, which recognises copyrighted music and video content, could be developed for Generative AI. ContentID works by scanning uploaded content and comparing it against a database of content that has been provided by copyright owners. T. Belci, 'Leaked: the names of more than 16,000 non-consenting artists allegedly used to train Midjourney's AI', *The Art Newspaper* (4 January 2024). Shutterstock, 'Get to know the AI-generated content tool on Shutterstock', *Shutterstock Customer Support*. YouTube, 'How Content ID works', *YouTube Help*.

47   Equity, *Stop AI Stealing*; Human Artistry Campaign, *Human Artistry Campaign*.

48   DACS, 'New survey shows'.

49   Shutterstock, 'Get to know'.

50   M. O'Brien, 'ChatGPT-maker OpenAI signs deal with AP to license news stories', *AP News* (13 July 2023).

51   Reuters, 'OpenAI in content licensing talks with CNN, Fox and Time - Bloomberg News', *Reuters* (11 January 2024).

52   e.g. G. Hadfield, M. -F. Cuéllar, and T. O'Reilly, 'It's Time to Create a National Registry for Large AI Models', *Carnegie Endowment for International Peace* (12 July 2023).

53   European Parliament, 'EU AI Act: first regulation on artificial intelligence', *Topics | European Parliament* (2023).

54   Equity, 'AI Vision Statement', *Equity*.

55   Creative UK, 'Takeaways from the AI & Creativity: Protecting Creators in the Age of AI event', *Creative UK* (14 November 2023). Council of Music-Makers, 'Open letter'.

56   A. Ploin et al., 'AI and the Arts: How Machine Learning is Changing Artistic Work', *Oxford Internet Institute* (2022).

57   see e.g. the return of the 'weird internet': A. Dash, 'The Internet Is About to Get Weird Again', *Rolling Stone*, (30 December 2023).

58   D. Hemment et al., 'AI in the Public Eye: Investigating Public AI Literacy Through AI Art', in *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*. New York, NY, USA: Association for Computing Machinery (2023). pp. 931–942. DACS, 'New survey shows'.

59   Serpentine R&D et al., 'Future Art Ecosystems, Vol 4. Art x Public AI', *Serpentine Galleries* (2024).

Case studies

Artists from the UK and beyond are experimenting with AI, pushing the boundaries of what these technologies can do and raising further questions about the key concerns outlined in this paper. In the following section, we introduce three case studies of artists who are using generative AI in novel and innovative ways within visual arts and music: Jake Elwes, Tim Murray-Browne, and Holly Herndon. Each of these artists is putting different approaches into practice that underline potentially 'good' ways of working with AI, whether by showcasing the viability of artist-led AI models or by critiquing the biases and gaps in dominant AI models.

Jake Elwes

Jake Elwes (jakeelwes.com) is a British artist who has been using AI since 2016 to illuminate and challenge its biases and inequalities. Among their recent work, Elwes' ongoing Zizi Project is a series of pieces that directly addresses the lack of diversity in AI training datasets.[60] Working in collaboration with drag performers, Elwes uses their interactive, multimedia artwork to promote queer, trans, and gender non-conforming identities that are often negatively affected by the bias of algorithmic and machine learning systems.[61] By 'queering' AI technologies, Elwes' work offers a positive and empowering representation of drag performers and the LGBTQ+ community in ways which demonstrate the value of collaborative, inclusive creative practices and consensual datasets.[62]

Tim Murray-Browne

Tim Murray-Browne (timmb.com) is a digital interaction artist and researcher based in the UK and Canada. His creative works focus on the relationship between people and technology as well as the resulting power dynamics. He has used AI in various artworks over the last decade as both tool and subject, using a combination of audio, image, and movement. His interactive artwork 'Self Absorbed' (2023), features three different AI datasets that use photographs and sounds drawn from his own archives. By developing his own AI models that are trained exclusively on his own data, Murray-Browne has said he "felt a freedom from AI's homogenising force".[63] Using AI as a collaborative tool for human creativity and agency, Murray-Browne's work highlights the opportunities for the technology to stimulate new and diverse cultural outputs through artist-led innovation.

Holly Herndon

Holly Herndon (herndondryhurst.studio) is an American artist, composer, and researcher who has been a leading innovator in the use of machine learning within music. Following previous musical works made with AI trained on neural networks (e.g. the 2019 album PROTO), in 2021 Herndon released Holly+, a vocal model of herself. This deepfake 'twin' allows users to upload their own audio and have it sung back in Herndon's AI voice.[64] In addition to being an AI tool designed by the artist, the Holly+ example also offers an alternative approach to protecting creators' rights and licensing. The model is controlled by a decentralised autonomous organisation (DAO) who have approval over any works created using Holly+: the members of the DAO are "incentivized to only certify or licence new works that contribute to the value of the voice, and do not dilute that value through the production of bad art or negative associations".[65] Herndon has also pushed for greater protections and recognition of artists' rights within the generative AI space. She is the co-founder of Spawning, a company aiming to build "the consent layer for AI".[66] Among Spawning's work is Have I Been Trained?, a website that artists and lay users alike can use to find out if their content has been used to train AI models.[67] Herndon's interventions highlight the importance of artists' contributions to the development and governance of generative AI while simultaneously illustrating that respecting artists' rights need not restrict creativity and innovation.

The three case studies featured here are just a few examples of innovative and experimental generative AI use within the creative and cultural industries.[68] Collectively, they show that, despite widespread concerns about AI, these technologies need not be exclusively resisted and opposed. Instead, a 'good' incorporation of generative AI in the cultural and creative industries needs to recognise and support the rights and interests of artists while also fostering creative and innovative applications of these technologies. Funding could be provided to existing creative organisations, trade unions, and artist collectives to facilitate the development and distribution of consensually generated training datasets and AI models. Technical training for artists who wish to incorporate AI into their creative practice could also be provided in addition to resources for artists looking to assert their rights and receive remuneration for their work. New AI development should also engage artists in the design and testing stages to stimulate new, innovative directions for AI

60   e.g. J. Elwes, 'Zizi - Queering the Dataset', Jake Elwes (2019).
61   G. Schwarz, 'Meet the artists reclaiming AI from big tech – with the help of cats, bees and drag queens', The Guardian (10 August 2023).
62   The New Real, 'The Zizi Show by Jake Elwes (2020)', The New Real.
63   T. Murray-Browne, 'Self Absorbed', Tim Murray-Browne (2023).
64   E. Minsker, 'Holly Herndon's AI Deepfake "Twin" Holly+ Transforms Any Song Into a Holly Herndon Song', Pitchfork (14 July 2021).
65   H. Herndon, 'Holly+' 💃🐝🎨 (2021).

66   A. Wiener, 'Holly Herndon's Infinite Art', The New Yorker (13 November 2023).
67   L. Clarke, 'When AI can make art – what does it mean for creativity?', The Guardian (12 November 2022).
68   Other artists doing innovative and groundbreaking creative work involving AI include Nettrice R. Gaskins (nettricegaskins.com), Anna Ridler (annaridler.com), Lex Fefegha (lexfefegha.com), Eryk Salvaggio (cyberneticforests.com), and Amelia Winger-Bearskin (studioamelia.com). For more, see The New Real, 'Artists' Roundtable – The artists' take on generative AI', The New Real. See also Ploin et al., 'AI and the Arts'.

use but also to identify the biases, gaps, and limitations of datasets. At the very least, supporting the voices and ideas of those whose work generative AI draws upon, imitates, and (potentially) replaces is a necessity for developing a 'good' foundation for AI within the creative and cultural industries.

Conclusion

It might seem like the trajectory of generative AI technologies is already a foregone conclusion, or that "the horse has already left the barn" in relation to how these technologies are developed and used.[69] In an interview with*Bayerische Rundfunk*,[70] LAION founder Christoph Schuhmann acknowledged the "concerns of artists or photographers" but then responded, "What would the alternative be? It wouldn't change the fact that every large tech company would continue crawling the internet". However, the fact remains that the mainstream generative AI systems that have inspired such debate have been available to the public for less than two years. We are not yet locked in to a generative AI landscape that violates creatives' rights, negatively impacts their livelihoods, and homogenises the cultural landscape. As this paper shows, there are already examples of how AI can be put to 'good' use, both by and for creatives.[71] There are options and opportunities to do things differently, we just have to be willing to think creatively and muster the political will to enact alternative visions.

To do this, the UK must be bolder and more imaginative when it comes to AI strategy– and not just in relation to the cultural and creative industries. Highlighting how the past decade of AI strategy in the UK has been marked by an inconsistent and unclear vision, Matt Davies (UK Policy Lead for the Ada Lovelace Institute) argues that for the UK to be a leader in the AI space, its national AI strategy needs to "articulate a vision of AI that links its functioning in the UK economy to a wider vision about the society we want to live in".[72] Creative and cultural applications of AI are just one consideration for what a 'good' strategy to AI development and deployment within the UK would look like. The debates that we have highlighted in relation to bias, inclusion, and rights are applicable to a variety of AI contexts, as are considerations of the ethical and environmental foundations of these technologies.[73] However, engaging in a more innovative way with artists and the creative industries could inform a unique and world-leading framework for the UK's AI development strategy, setting it apart by focusing first and foremost on "shaping technology toward public benefit".[74]

References

Adobe Communications Team (2023). 'Generation AI: Reimagining creativity with generative AI', *Adobe Blog* (18 October).

Anguiano, D., and Beckett, L. (2023). 'How Hollywood writers triumphed over AI – and why it matters', *The Guardian* (1 October).

Appel, G., Neelbauer, J., and Schweidel, D. A. (2023). 'Generative AI Has an Intellectual Property Problem', *Harvard Business Review* (7 April).

Bearne, S. (2023). 'New AI systems collide with copyright law', *BBC News* (31 July).

Beaumont, R. (2022). 'LAION-5B: A new era of open large-scale multi-modal datasets', *LAION*.

Belci, T. (2024). 'Leaked: the names of more than 16,000 non-consenting artists allegedly used to train Midjourney's AI', *The Art Newspaper* (4 January).

Bianchi, F., Kalluri, P., Durmus, E., Ladhak, F., Cheng, M., Nozza, D., Hashimoto, T., Jurafsky, D., Zou, J., and Caliskan, A. (2023). 'Easily Accessible Text-to-Image Generation Amplifies Demographic Stereotypes at Large Scale', *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*, New York, NY, USA: Association for Computing Machinery. pp. 1493–1504.

Birhane, A., Prabhu, V. U., and Kahembwe, E. (2021). 'Multimodal datasets: misogyny, pornography, and malignant stereotypes'. *arXiv*.

Brittain, B. (2023). 'John Grisham, other top US authors sue OpenAI over copyrights', *Reuters* (21 September).

Brittain, B. (2023). 'Judge pares down artists' AI copyright lawsuit against Midjourney, Stability AI', *Reuters* (30 October).

Buschek, C., and Thorp, J. (2024). 'Models All The Way Down', *Knowing Machines* (2024).

Center for Artistic Inquiry and Reporting (2023). 'AI illustration open letter', *Center for Artistic Inquiry and Reporting*.

Chang, Z., Koulieris, G. A., and Shum, H. P. H. (2023). 'On the Design Fundamentals of Diffusion Models: A Survey'. *arXiv*.

Clarke, L. (2022). 'When AI can make art – what does it mean for creativity?', *The Guardian* (12 November).

---

69   T. Hatmaker, 'Lensa AI, the app making "magic avatars", raises red flags for artists', *TechCrunch* (5 December 2022).

70   Harlan and Brunner, 'We Are All Raw Material'.

71   For further explorations of creative artists and AI, see: Serpentine R&D et al., 'Future Art Ecosystems Vol.4'; Ploin et al., 'AI and the Arts'.

72   M. Davies, 'A Lost Decade? The UK's Industrial Approach to AI', *AI Now* (12 March 2024).

73   e.g. T. Kneese, 'Measuring AI's Environmental Impacts Requires Empirical Research and Standards', *Tech Policy Press* (12 February 2024).

74   Davies, 'A Lost Decade?'

Council of Music Makers (2023). 'Open letter on the DCMS roundtable on AI and the creative industries', *Council of Music Makers* (20 November).

Crabapple, M. (2022). 'Op-Ed: Beware a world where artists are replaced by robots. It's starting now', *Los Angeles Times* (21 December).

Creative UK (2023). 'Takeaways from the AI & Creativity: Protecting Creators in the Age of AI event', *Creative UK* (14 November).

Crimmins, T. (2023). '"Do you see any diversity?": Man says AI is ableist after generating 100-plus images of "an autistic person"—and they're all white men', *The Daily Dot* (9 August).

DACS (2024). 'New survey shows 89% of UK artists want the Government to better protect their work by regulating AI', *DACS*.

Dash, A. (2023). 'The Internet Is About to Get Weird Again', *Rolling Stone*, (30 December).

Davies, M. (2024). 'A Lost Decade? The UK's Industrial Approach to AI', *AI Now* (12 March).

Denton, E., Hanna, A., Amironesei, R., Smart, A., and Nicole, H. (2021). 'On the genealogy of machine learning datasets: A critical history of ImageNet', *Big Data & Society*, 8(2).

Department for Culture, Media and Sport (2023). Creative Industries Sector Vision.

DeviantArt (2022). 'UPDATE All Deviations Are Opted Out of AI Datasets by team on DeviantArt', *DeviantArt*.

Eliot, L. (2022). 'AI Ethics Confronting The Insidious One-Like-Mind Of AI Algorithmic Monoculture, Including For Autonomous Self-Driving Cars', *Forbes* (19 June).

Elwes, J. (2019). 'Zizi - Queering the Dataset', *Jake Elwes*.

Equity (n.d.). 'AI Vision Statement', *Equity*.

Equity (n.d.). Stop AI Stealing the Show, *Equity*.

European Parliament (2023). 'EU AI Act: first regulation on artificial intelligence', *Topics | European Parliament*.

Flux, E. (2022). 'What does the rise of AI mean for the future of art?', *The Age* (23 December).

Gatto, J. G. (2023). 'Getty Image's AI model training lawsuit in UK against Stability to proceed, *Lexology*.

Gillespie, T. (2024). 'Generative AI and the politics of visibility', *Big Data & Society*, 11(2).

Grynbaum, M., and Mac, R. (2023). 'New York Times sues OpenAI and Microsoft over use of copyrighted work', *The New York Times* (27 December).

Hadfield, G., Cuéllar, M. -F., and O'Reilly, T. (2023). 'It's Time to Create a National Registry for Large AI Models', *Carnegie Endowment for International Peace* (12 July).

Harlan, E., and Brunner, K. (2023). 'We Are All Raw Material for AI', *BR* (7 July).

Hatmaker, T. (2022). 'Lensa AI, the app making "magic avatars", raises red flags for artists', *TechCrunch* (5 December).

Hays, K. (2023). 'OpenAI offers a way for creators to opt out of AI training data. It's so onerous that one artist called it "enraging."', *Business Insider* (29 September).

Heikkila, M. (2022). 'The viral AI avatar app Lensa undressed me – without my consent', *MIT Technology Review* (12 December).

Heikkila, M. (2023). 'This new data poisoning tool lets artists fight back against generative AI', *MIT Technology Review* (23 October).

Hemment, D., Currie, M., Bennett, SJ, Elwes, J., Ridler, A., Sinders, C., Vidmar, M., Hill, R., and Warner, H. (2023). 'AI in the Public Eye: Investigating Public AI Literacy Through AI Art', in *Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency*. New York, NY, USA: Association for Computing Machinery, pp. 931–942.

Herndon, H. (2021). 'Holly+ 👯🗣️🎿'.

HM Government (2022). 'National AI Strategy - HTML version', *GOV.UK*.

Human Artistry Campaign (n.d.). Human Artistry Campaign.

Jones, E. (2023). 'Explainer: What is a foundation model?', *Ada Lovelace Institute* (17 July).

King, K. (2022). 'Harmful biases in artificial intelligence', *The Lancet*, 9(11).

Kleinberg, J., and Raghavan, M. (2021). 'Algorithmic monoculture and social welfare', *Proceedings of the National Academy of Sciences*, 118(22).

Kneese, T. (2024). 'Measuring AI's Environmental Impacts Requires Empirical Research and Standards', *Tech Policy Press* (12 February).

Knibbs, K. (2023). 'A New Tool Helps Artists Thwart AI—With a Middle Finger', *Wired* (12 October).

Levine, A. S. (2023). 'Stable Diffusion 1.5 was trained on illegal child sexual abuse material, Stanford study says', *Forbes* (20 December).

Luccioni, A. S., Akiki, C., Mitchell, M., and Jernite, Y. (2023). 'Stable Bias: Analyzing Societal Representations in Diffusion Models', *arXiv*.

Maimann, K. (2022). 'This image is raising money for a Toronto charity. The only problem? It's not real', *Toronto Star* (31 December).

Minsker, E. (2021). 'Holly Herndon's AI Deepfake "Twin" Holly+ Transforms Any Song Into a Holly Herndon Song', *Pitchfork* (14 July).

Murray-Browne, T. (2023), 'Self Absorbed', *Tim Murray-Browne*.

Musicians' Union (2023). 'Culture Committee Report on AI Recognises Concerns of the UK Music Industry', *Musicians' Union*.

Nyce, C. M. (2023). 'AI Search Is Turning Into the Problem Everyone Worried About', *The Atlantic* (6 November).

O'Brien, M. (2023). 'ChatGPT-maker OpenAI signs deal with AP to license news stories', *AP News* (13 July).

Offert, F., and Phan, T. (2022). 'A Sign That Spells: DALL-E 2, Invisual Images and The Racial Politics of Feature Space', *arXiv*.

Ofgang, E. (2023), 'What happens to illustrators when robots can draw robots?',*The New York Times* (4 November).

Omiye, J. A., Lester, J. C., Spichak, S., Rotemberg, V., and Daneshjou, R. (2023). 'Large language models propagate race-based medicine', *npj Digital Medicine*, 6(195).

Ploin, A., Eynon, R., Hjorth, I., and Osborne, M. A. (2022). 'AI and the Arts: How Machine Learning is Changing Artistic Work', *Oxford Internet Institute*.

Prisma Labs, Inc. (n.d.) 'Lensa's magic avatars explained', *Notion*.

Pulliam-Moore, P. (2023). 'SAG-AFTRA's new contract hinges on studios acting responsibly with AI', *The Verge* (18 November).

Reuters (2024), 'OpenAI in content licensing talks with CNN, Fox and Time - Bloomberg News', *Reuters* (11 January).

Roof, K., Bergen, M., and Miller, H. (2023). 'OpenAI Rival Stable Diffusion Maker Seeks to Raise Funds at $4 Billion Valuation', *Bloomberg* (3 March).

Sandoval-Martin, T., and Martínez-Sanzo, E. (2024). 'Perpetuation of Gender Bias in Visual Representation of Professions in the Generative AI Tools DALL·E and Bing Image Creator', *social sciences*, 13(5).

Schuhmann, C., and Bevan, P. (2023). 'LAION POP: 600,000 high-resolution images with detailed descriptions', *LAION*.

Schwarz, G. (2023). 'Meet the artists reclaiming AI from big tech – with the help of cats, bees and drag queens', *The Guardian* (10 August).

Serpentine R&D Platform, Introna, T., Ivanona, V., Jäger, E., Martin-Chan, L., and Watson, K. (2024). 'Future Art Ecosystems, Vol 4. Art x Public AI', *Serpentine Galleries*.

Shutterstock (n.d.). 'Get to know the AI-generated content tool on Shutterstock', *Shutterstock Customer Support*.

Slater, D., and Masiello, B. (2023). 'Beyond Copyright: Tailoring Responses to Generative AI & The Future of Creativity', *Tech Policy Press* (19 September).

Snow, O. (2022). '"Magic avatar" app Lensa generated nudes from my childhood photos', *Wired* (7 December).

Staff and agencies (2024). 'Microsoft-backed OpenAI valued at $80bn after company completes deal', *The Guardian* (17 February).

Sun, M., and Harmon, S. (2024). '"The worst AI-generated artwork we've seen": Queensland Symphony Orchestra's Facebook ad fail', *The Guardian* (6 March).

The New Real (n.d.). 'Artists' Roundtable – The artists' take on generative AI', *The New Real*.

The New Real (n.d.). 'The Zizi Show by Jake Elwes (2020)', *The New Real*.

Thiel, D. (2023). 'Investigation Finds AI Image Generation Models Trained on Child Abuse', *Stanford Cyber Policy Center* (20 December).

Tran, T. H. (2022). 'Image Apps Like Lensa AI Are Sweeping the Internet, and Stealing From Artists', *The Daily Beast* (10 December).

Wiener, A. (2023). 'Holly Herndon's Infinite Art', *The New Yorker* (13 November).

YouTube (n.d.). 'How Content ID works', *YouTube Help*.

The British Academy is the UK's national academy for the humanities and social sciences. We mobilise these disciplines to understand the world and shape a brighter future.

From artificial intelligence to climate change, from building prosperity to improving well-being – today's complex challenges can only be resolved by deepening our insight into people, cultures and societies.

We invest in researchers and projects across the UK and overseas, engage the public with fresh thinking and debates, and bring together scholars, government, business and civil society to influence policy for the benefit of everyone.

The British Academy
Digital Society