Friend, foe or frenemy

Foreseeable impacts of AI on arts, culture and creativity

October 2023

A New Approach (ANA)

Contents

Acknowledgements

About ANA

A New Approach (ANA) acknowledges the cultures of Aboriginal and Torres Strait Islander peoples in Australia and their continuing cultural and creative practices in this land.

ANA is Australia's leading think tank focused on arts and culture. Through credible and independent public leadership, ANA helps build an ambitious and innovative policy and investment environment for arts, culture and creativity. We work to ensure that Australia can be a great place for creators and audiences, whoever they are and wherever they live.

ANA Board

Rupert Myer AO (Chair), Sue Cato AM, Cass O'Connor, Catherine Liddle, Craig A. Limkin PSM and Genevieve Lacey.

Board Associates 2023: Astrid Jorgensen OAM and Daniel Riley.

ANA Reference Group

Genevieve Lacey (Chair), Ben Au, Jane Curry, Professor John Daley AM, Shelagh Magadza, Damien Miller, Rupert Myer AO, Alison Page and Dr Mathew Trinca AM.

ANA is supported by a unique collaboration of 11 philanthropic organisations across the country. Beginning in 2021, this national coalition comprises:

The Analysis Paper series

This paper is the fourth in our Analysis Paper series, which involves short investigations of a specific idea or area of interest. Find all of our work at www.newapproach.org.au

About this Analysis Paper

ANA Paper No. 2023-04, October 2023

This report was written by Dr. Alan Hui and Kate Fielding from A New Approach (ANA). Cite as: Hui, A. & Fielding, K., October 2023. 'Friend, foe or frenemy'. Analysis Paper No. 2023-04. Produced by A New Approach (ANA). Canberra, Australia.

ANA thanks the people who generously reviewed this paper for their time and excellent feedback. The opinions in this Analysis Paper do not necessarily represent the views of ANA's funding partners, the individual members involved in the governance or advisory committees, or others who have provided input.

Key points

Australians are already using AI throughout arts, culture and creativity

People and organisations in Australia are already using artificial intelligence (AI) as creators, participants and audiences in arts, culture and creativity. Like their peers around the globe, Australian creators already apply generative AI as a creative tool across forms and mediums. Distributors and regulators are applying other forms of AI across places and platforms. Some do this with caution, and others with zeal.

While use of generative AI is a hot topic, other applications of AI also matter for arts and culture. For years, AI has been shaping Australian arts and cultural experiences, particularly through content recommendation and moderation on platforms and apps. Machine translation and automated captioning are already enabling wider groups of people in Australia to access audio and video. These and many other applications of AI affect who can see, hear and experience arts and culture.

Part 1 - Applications of AI provides examples of AI that Australians are applying in arts, culture and creativity. This illustrates the breadth and variety of applications that deserve attention when considering the impacts of AI (discussed in Part 2), both in the context of applying AI and considering policy and regulatory options.

Applications of AI already present real risks and opportunities for arts, culture and creativity

Australians already have initial views of AI, particularly generative AI. There are indications that many Australians do not support applying generative AI in arts and culture, at least not yet. A survey of over 2000 Australians showed low support for the application of generative AI to creative cultural works. Specifically, the researchers found the 'only area with notably lower levels of support is the use of AI to generate culture for popular consumption (such as films, books, music or art)'.[1]

ANA expects Australian attitudes towards AI in arts and culture will evolve as people better explore how AI is used (beyond well-known applications of generative AI) and the likely impacts. Two decades ago, few could have predicted how people would use the internet and social media and the range of impacts. Early enthusiasm about the opportunities for democratising participation and connecting communities was joined by later concerns about online safety and misinformation. Early concerns about privacy and local identity were followed by an understanding of benefits for remote work and education during COVID-19. These examples from the internet and social media suggest impacts of AI will continue to emerge and evolve as developers create and further develop AI systems, and people make new applications of AI.

Nonetheless, ANA observes that impacts of AI on arts, culture and creativity are evident now. In this paper, ANA sets out impacts on:

- incentives to create
- connections people have with arts and culture
- freedom of expression
- cultural and social inclusion

Part 2 - Impacts of AI discusses key foreseeable impacts of AI, which deserve attention from people and organisations considering whether and how to apply AI, and how to balance the risks and benefits of deploying AI within creative and cultural industries. Understanding such impacts also plays an important role for policymakers considering whether and how to regulate. Noting this is rapidly changing space, ANA will release a further Analysis Paper in 2024. This paper will provide an update on new applications of AI in arts and culture, changes to impacts and emerging contexts.

Coordinated governance can help unlock opportunities and mitigate risks

In ANA's view, Australia should consider a broad, risk-based approach to help safeguard the interests of Australians (and people in Australia, more broadly). This paper shows that even the foreseeable impacts of AI on arts, culture and creativity spread far and wide. When people and organisations apply an AI system, they want to know that the system will be 'fit for the particular purpose', to borrow a concept from consumer law.[2]

ANA welcomes efforts from all governments in Australia to design and implement appropriate AI governance. Examples of coordination of governance and governance options include:

- The **Copyright and AI roundtable**, hosted by the Attorney-General's Department, the federal department with portfolio responsibility for copyright. This roundtable involved agencies with a stake in copyright and AI (Department of Industry, Science and Resources, the Australian Competition and Consumer Commission, IP Australia) as well as stakeholders from cultural institutions, creative industries and technology firms.
- National AI Centre's **Responsible AI Network**, which draws together Australian Industry Group, Australian Information Industry Association, the Committee for Economic Development of Australia, CSIRO's Data61, Gradient Institute, Standards Australia, The Ethics Centre, The Human Technology Institute at UTS, and the Tech Council of Australia.
- The **AI Working Group of the Intellectual Property Policy Group**, a standing group which includes representatives of federal agencies involved in intellectual property policy.
- **Consultations on AI policy by federal, state and territory governments and parliaments**, including on AI governance matters. This includes recent efforts from the Department of Industry, Science and Resources and the NSW Parliament.

For more details on our views on AI governance, see ANA's recent submission to the Department of Industry, Science and Resources.[3]

People have an important role in developing, applying and evaluating AI

It is no coincidence that each example of AI in this paper features people. As leading Australian AI researchers have emphasised, Australians (and people generally) are responsible for AI – for its development, its application and the impacts that follow.[4] Behind each story of 'artificial' intelligence are the people who develop systems and the people who apply those systems to create, mediate, distribute and regulate art and culture.

Naturally, developers of AI systems bear responsibility for important decisions that create direct impacts and affect the scale and types of downstream impact. This is true for developers within providers of AI systems and those in other organisations adapting third-party AI systems. For example, developers of machine learning systems choose training datasets for AI, affecting what systems learn (including any foundational biases). Those developers are also responsible

for obtaining any permission and paying any fees for copyright-protected uses of creations.[5]

However, users of AI systems also play a role. Australians and Australian organisations using AI systems have responsibility for the impacts of their applications of AI. As the Gradient Institute and the CSIRO National AI Centre say, procuring a third-party AI system does not 'absolve them [the procurer] of responsibility for how the system operates'.[6] When selecting and applying AI systems, people are inevitably making decisions. Which AI system to use? Which outputs from generative AI to select? How to arrange the outputs of generative AI in a compelling and cohesive way? How to evaluate and fine tune the application of AI? User decisions like these work in tandem with developer decisions to impact how Australians experience arts and culture.

Putting 'the right people' in the development, application and evaluation of AI is essential to addressing risks and securing opportunities for arts, culture and creativity. As Kate Crawford said in her Royal Society lecture:

> "I'm going to be honest about my concern – it's very real – that if we keep this conversation just within the technical community we are not talking to the right people. We're certainly not including an interdisciplinary space, but more importantly, we're not including the people who are being affected by these systems."[7]

By highlighting impacts on diverse groups of people involved in arts, culture and creativity, **Part 2 – Impacts of AI** demonstrates applications of AI have impacts beyond developers and users of AI.

Part 1: Applications of AI

This Part outlines how people in Australia and organisations are applying AI throughout arts, culture and creativity, including in:

- creation of arts and culture
- discovery of content via search engines
- preservation of language and heritage
- automated content recommendation and moderation on digital platforms
- automated speech recognition, captioning and transcription
- machine translation of text and speech
- classification ratings in video and games

This is to help illustrate the breadth and variety of applications that deserve attention when considering the impacts of AI (discussed in Part 2), both in the context of applying AI and considering policy and regulatory options.

Generative AI in the creation of arts and culture

There are abundant **Australian examples** of generative AI applied across forms and mediums, platforms and places.[8] This complements many well-aired examples of generative AI systems that people around the world are using to create and assist creation of text, images, audio and video.

Game developers have been applying **generative AI in games** to build new experiences each time a game is played. For example, Adelaide-based studio We Have Always Lived in the Forest released 'darkwebSTREAMER', an internet-horror role-playing simulation game.[9] The developers of the game applied generative AI to generate non-player characters and storylines unique to each playing session.

Generative AI has also been applied in **choreography**. One example saw the Sydney Opera House host 'Beyond Black', involving the Korea National Contemporary Dance Company performing moves created with generative AI.[10] Media art group SLITSCOPE trained an AI on motion capture footage of eight dancers performing choreography by Shin Changho to create new choreography for the dance company to perform.

Australian machine learning experts have contributed to prominent applications of **generative AI in film**. For example, a machine learning team from University of Adelaide worked with Australian visual effects studio Rising Sun Pictures to develop video deepfakes for Marvel Studios' Shang-Chi and the Legend of the Ten Rings.[11] This enabled the film's combat scenes to feature the faces of actors on the bodies of stunt performers.

Australian creators are also responsible for some prominent applications of **generative AI in music**. The examples discussed here see generative AI complement a variety of human contributions, including lyrics, singing, instrument playing and arrangement:

- In creating Cold Touch, Australian creator Kito co-wrote lyrics with two writers.[12] One of the writers also sang the lyrics, which were rendered to mimic the voice of Canadian creator Grimes. The mimicry was achieved by applying the Grimes AI tool, which was trained using recordings of Grimes' voice.[13] Kito arranged and produced the recording, with assistance from a fellow music producer. While there have been concerns about unauthorised use of tracks to train AI to mimic performers,[14] Grimes willingly contributed vocals to train Grimes AI. She also made the tool available for others to use, on the condition of attribution and shared master recording royalties.
- To create the winning entry in the Eurovision AI Song Contest, Australian music technology firm Uncanny Valley applied generative AI in several ways. The creators used generative AI tools to generate melodies, lyrics and vocals, and create a synth instrument from sampled sounds of Australian fauna.[15] They selected and arranged the melodies and lyrics into a song, complemented them and blended human vocals with AI-generated vocals.[16]

In a recent study by Australian education researchers, around half of students and four in five academics reported using **generative AI for university purposes**.[17] Students reported using generative AI mainly as a tool, for example to brainstorm or as a study partner, but fewer than one in 10 used AI-generated content in submitted assessments. About two in three academics said generative AI would change the way they assessed students but three in four disagreed that their university was ready for generative AI use. Some Australian universities now permit the use of generative AI in assignments, subject to disclosure or other requirements.[18] This includes one university making an AI-based writing assistant available to 5000 students.[19]

The National Gallery of Victoria (NGV) provides an Australian example of **generative AI in an audiovisual artwork**. The NGV commissioned the continuously changing 3D audiovisual work 'Quantum memories' from new media artist Refik Anadol, displayed in its foyer in 2020. The work involved a generative AI trained 'from two hundred images linked to nature from publicly available internet resources'.[20] The artist's webpage for the artwork credits over a dozen of creators involved in the making of the artwork, and the team responsible for the generative AI.[21] Likewise, audio-specialist agency Eardrum curated a selection of applications of generative AI at the Powerhouse Museum, including a live-created radio play, art projections, a live art exhibition and poetry.[22] The radio play involved a team of people creating different aspects of the radio play with different AI tools, in live time.[23] Like the Eurovision AI Song Contest example above, the radio play saw people applying multiple generative AI systems in their creative workflow and choosing how to bring it together into a cohesive work.

Increasingly, Australian creators (and Australians generally) can use **generative AI in off-the-shelf software applications**. Several generative AI tools are already widely available:

- Grammarly provides generative AI-based writing feedback across several office software suites and social media apps.[24]
- Adobe Photoshop includes the Adobe Firefly generative AI which enables users to create or modify images with text prompts.[25]
- GitHub, the platform enabling software developers to store, manage and share code, now includes Github Copilot which provides coding suggestions to developers in several programming languages.[26]
- Microsoft is incorporating Copilot generative AI into its Office software suite.[27]

Newsrooms in Australia and around the world are applying some **generative AI in news**. News Corp Australia applies generative AI to create 3000 weekly articles on local weather, fuel prices and traffic conditions.[28] ANA is also aware of several overseas examples. Associated Press has automated corporate earnings stories and video transcription for some years.[29] A partnership with OpenAI to further explore generative AI in news will see Associated Press license part of its news archive to OpenAI and tap into OpenAI's technology and expertise.[30] There are also reports that Google is testing a generative AI tool to help journalists create headlines and stories, and has pitched it to outlets including The New York Times, The Washington Post and The Wall Street Journal.[31]

Generative AI in audiobooks is also emerging, with some publishers applying text-to-speech tools provided by digital platforms. For many decades, audiobooks have provided book access to people with print disabilities, such as vision impairments and physical dexterity issues. More recently, audiobooks have found a wider audience, being used when travelling, commuting and exercising. Google Play Books enables publishers in Australia to create and sell auto-narrated audiobooks, including in Australian English.[32] Apple Books also provides auto-narrated audiobooks to audiences in Australia via the Apple Books app.[33]

There are also examples of **generative AI in architecture and design**, especially to brainstorm ideas. Australian firms Techne and Gray Puksand are applying Midjourney to aid exploration of ideas through generation of images based on word prompts. Representatives of both firms emphasise that while the use of Midjourney frees up staff time, they are not intended to substitute for architects or designers.

Australians are not only applying generative AI systems, but also **developing generative AI systems**. For example, researchers from The University of Sydney created the Reframer system which enables people 'interact directly through manual drawing'.[34] The researchers found that people sometimes used Reframe as a tool and sometimes had 'mixed initiative interactions' with the system where it acted 'on their own without being directly instructed'.[35]

AI in search engines used to discover content

Search engines are the most common way for Australians to find new content, according to the 2023 annual consumer survey commissioned by the Attorney-General's Department.[36] This makes the application of generative AI-based chatbots in search engines an important development in how Australian audiences seek and access online content across all forms. There are now options to use generative AI based chatbots on both Google Search and Microsoft Bing, the most popular search engines used by Australians.[37]

Several cultural institutions are applying machine learning to extract text from content to make it easier to find content. Libraries are applying machine learning to extract data about their collections, such as geographic information, time periods and names.[38] Likewise, the Australian Broadcasting Corporation applied machine learning to improve search results by extracting metadata from text and audio content.[39] Once extracted, this data was combined with search engines on their websites to help Australians find the material within their collections.

AI in preservation of language and heritage

Machine learning is currently being used to help preserve and revive endangered languages. For example, researchers at the ARC Centre of Excellence for the Dynamics of Language applied machine learning to build models for 12 Australian First Nations languages.[40] This parallels an effort in New Zealand to use machine learning to preserve Māori as a living language. Te Hiku Media developed a Māori automated speech recognition tool and an app to improve Māori pronunciation, including by addressing the impact of English on second-language Māori speakers.[41]

Another example is the Sydney Jewish Museum's use of AI to create 'interactive biographies' with Holocaust survivors.[42] Visitors to the museum have been able to 'speak' with simulations of three survivors that answer questions about the survivors' experiences.

A further example is the use of machine learning to catalogue Aboriginal rock art in Far North Queensland. Researchers from two Australian universities developed an AI tool to more quickly identify and catalogue, after approaching local Indigenous rangers and elders.[43]

AI in automated content recommendation and moderation

Over 7 in 10 (71%) of Australians used digital platforms 'to engage with the arts in 2022'.[44] When digital platforms use AI to automate content recommendation and content moderation, this directly influences how Australians engage with arts and culture. While content recommendation aims to suggest relevant content to users, and content moderation aims to reduce or prohibit access to unwanted content, many applications of AI serve both functions.

Digital platforms are **applying AI to automate content recommendation** to provide relevant content to users in Australia and around the world. For example, music and podcast streaming service provider Spotify explains that machine learning 'touches every aspect of Spotify's business', including to 'help listeners discover content via recommendations and search' and 'generate playlists'.[45] Likewise, Netflix applies machine learning to not only recommend content to users but also guide investment in content production.[46]

Digital platforms are **also applying AI to automate content moderation**, aiming to reduce provision of content where it might be unlawful or be inconsistent with community guidelines. This spans many purposes:

Purpose	Examples
Promoting online safety and applying community guidelines	Meta (the operator of Facebook and Instagram) applies machine learning models to assess whether 'a piece of content is hate speech or violent and graphic content' with some human verification.[47] Likewise, the gaming livestreaming platform Twitch uses a machine learning model that 'reviews custom Emote submissions and automatically approves a large chunk of the static emotes'.[48] Twitch also retains safety specialists to review some Emotes.
Identifying and reducing access to copyright material	AI is often applied to identify copyright-protected text, audio, video and images, enabling decisions to limit or prevent access. YouTube's Content ID system applies machine learning to detect use of copyright material.[49] Music identification firm Pex applies machine learning and neural networks to identify music across most popular digital platforms.[50]
Combating misinformation	While generative AI and AI-based content recommendation systems can contribute to misinformation, AI is also being applied to combat misinformation.[51] For example, Meta highlights the role of AI in tackling misinformation across its apps, including to detect fraud and inauthentic spam accounts.[52]
Promoting privacy	One example is YouTube applying machine learning to identify videos that clearly target young audiences, to enhance privacy of children by limiting data collection and use on those videos.[53]

AI in automated speech recognition, captioning and transcription

Captioning of video has been commonly used in entertainment, news and education for many years, providing a text version of speech (and other sound) that is synchronised to video. Quality captioning is important because Australians devote an average 16 hours per week to film, television and other video content.[54] While captioning is best known for improving access for people with hearing impairment, it can also benefit students in all levels of education, and people from culturally and linguistically diverse backgrounds.

Increasingly, AI is **applied to automate captioning** (an example of automated speech recognition), including for:

- video on television and digital platforms. Digital platforms often provide automated captioning for video content, both for user uploaded content and for paid video content.[55] This can help meet captioning quantity requirements for broadcast television programs.[56]
- live events, both via video and on-site. Automated speech recognition can struggle in these situations, which often have noise and multiple speakers. To make automated speech recognition more accurate and to meet captioning quality standards, it is common for people working as 'respeakers' to repeat what they hear into speech recognition software.[57]
- videoconferencing software and captioning apps, both in work and education.[58] During COVID, schools and universities used automated captioning, mainly via video conferencing software.[59]

Beyond captioning, automated speech recognition is also used for automated transcription of audio and video. Transcriptions not only provide a written record of speech, but also aid audio and video editing. Several content editing suites automated transcription, making it easier for audio and video editors to find and navigate sound and footage.[60] There are also third-party automated transcription tools.[61]

Machine translation in text and speech

The 2021 Census confirmed Australia is the first English-speaking country in the world to be a migrant-majority nation, and over one in five people in Australia speak a language other than English at home.[62] Many people in Australia use translation to discover and experience audiovisual arts, culture and creativity content in alternative languages. Likewise, many content producers and creators use translation to extend the audience for their creations. Translation enables some people to understand

English content in a preferred language, and others to understand non-English content in English. For example, it has been common for years to have 'subbed' versions of anime with alternative language captions (also known as 'subtitles'), and 'dubbed' versions with speech in an alternative language.

There are widespread **applications of AI for machine translation**. Microsoft provides Translator machine translation for use in its Office suite, Teams videoconferencing software and other software, between over 100 languages.[63] Meta has released an AI translation model covering 200 languages, which it intends to apply to its platforms Facebook and Instagram, and Wikipedia (through a partnership with the Wikimedia Foundation).[64] YouTube is providing auto-translated captions on videos across several languages, including on mobile devices.[65] In the last year, YouTube has progressively made AI-based automated dubbing more available to creators and users.[66]

Classification ratings in video and games

Classification ratings are important, given the many hours devoted to video content and games. Classifications support informed decisions by people in Australia about the video content they watch and the games they play.

Australia has approved use of three automated classification tools from the International Age Rating Coalition, Netflix and Spherex.[67] Of these, it is clear that at least the Netflix tool applies AI.[68] The Netflix Classification Tool involves human review by content experts to tag content, an algorithm developed by Netflix converting tags to Australian classifications, and the federal department responsible for classification policy monitoring and auditing of automated classifications.

Part 2: Impacts of AI

Foreseeable impacts of existing applications of AI

As we saw in Part 1, AI is already deployed pervasively across arts, culture and creativity but the capabilities and applications of AI systems are still evolving. As a result, at least some impacts are not evident now. Even where there are impacts, risks and opportunities continue to emerge. In Part 2, we explore some of the likely impacts of existing applications of AI on:

- incentives to create
- connections people have with arts and culture
- freedom of expression
- cultural and social inclusion

These impacts deserve time and attention from people and organisations considering whether and how to apply AI. Understanding the impacts informs how to mitigate the risks and realise benefits of deploying AI within cultural and creative industries. It also informs policymakers considering whether and how to regulate.

Impacts on incentives to create

AI, especially generative AI, impacts incentives to create. Remuneration for working and copyright incentives are two incentives to create. In the face of generative AI, these incentives need to be maintained and adapted, as a key source of revenue for arts and culture activity. As world-leading AI researcher and Australian scholar Kate Crawford says:

> 'The most important question is how we are going to ensure that generative AI systems are equitable and that they encourage human flourishing, rather than concentrating power and increasing inequity'.[69]

Leaders across the globe highlight the importance of harnessing and shaping the potential impacts of generative AI. Leaders in the United States (US) and Europe also focussed on generative AI, when announcing their intentions to pursue a voluntary AI code of conduct. European Commission Vice President Margrethe Vestager said, 'Generative AI is a complete gamechanger' that requires accelerated work from governments.[70] At the same event, US Secretary of State Anthony Blinken said, 'we feel the fierce urgency of now, particularly when it comes to generative AI'.[71] Likewise, the Australian Minister for Industry and Science has said 'people have seen the leaps and bounds especially around generative AI that's occurred and want to know that we get that balance right'.[72]

One way to understand the impacts on copyright incentives is to consider impacts that are **'upstream' and 'downstream'** of the application of generative AI. A study commissioned by the European Commission distinguished between 'upstream' impacts where copyright materials are used as an input to generative AI and 'downstream' impacts associated with outputs of generative AI.[73] As ANA's recent Insight Report *To Scale* highlighted, the 'changing global regulatory environment of artificial intelligence' could affect copyright licence fees and other inflows to arts, culture and creativity.[74]

Groups representing copyright owners and creators of copyright-protected text, images, music and video have raised strong concerns about **'upstream'** impacts. These groups are particularly concerned that generative AI compromises copyright incentives to create, particularly the use of copyright materials to train generative AI without permission or payment and lack of transparency of AI-related uses.[75] Concerned copyright right owners have already sued developers of generative AI systems in several US litigations.[76] Likewise, the proposed EU AI Act would require generative AI providers to 'make publicly available a sufficiently detailed summary of the use of training data protected under copyright law'.[77]

In addition, the study commissioned by the European Commission raises a role for AI-based collective licensing and rights management, which would build on existing applications of AI in automated content recommendation and

moderation. As we noted in *To Scale*, in 'the long run, the study suggests a cross-sector rights data network is needed, partly to carry out efficient data management and licensing'.[78]

Researchers in Australia have also considered 'downstream' issues - whether copyright protects creations involving generative AI.[79] These researchers consider instances where US and Australian copyright laws give incentives to developers of generative AI systems, users of generative AI, or both. While the researchers confirm that copyright laws are unlikely to protect the AI itself as a copyright creator, they highlight scenarios where neither developers nor users contribute sufficiently to warrant copyright protection.

Another way to understand impacts on incentives to create is through the economics lenses of **complements and substitutes**. A challenge for policymakers is to distinguish applications of AI that substitute for human creation from those that are complements. As the authors of the Rapid Response Information Report on Generative AI say:

> 'The fact that a machine may perform one or more relevant tasks does not mean that job replacement will necessarily occur, indeed the strongest business cases for investment in AI are likely to emphasise the creation of additional value to products or services rather than savings in labour costs. In these cases, technologies such as generative AI are likely to both create new jobs and augment existing ones by enhancing human decision-making skills.'[80]

Among the examples of generative AI in the creation of arts and culture discussed in Part 1, there are likely to be a combination of complements and substitutes. Some applications of generative AI enable genuinely novel forms of creation. For example, consider the live and interactive applications of generative AI mentioned above, including the radio play generated in live time and the continuously changing audiovisual artwork in a gallery. For applications of generative AI are truly complementary to other human creation, there may be less reason to be concerned about substitution. In fact, these may be opportunities that enhance the incentive to create, by enabling new forms of creation, the creation of more material or the creation of higher quality material.

For applications of generative AI that truly substitute for human creation, there are several potential policy responses. While banning such applications is certainly an option, there are many others:

- **subsidising human creation**. Australia pursued such a levy on blank audio tapes, which were considered a threat to copyright interests in recorded music.[81] One prominent European researcher has proposed a similar type of levy on AI to subsidise human creation.[82]
- **providing transparency about applications of generative AI**, to inform choices based on whether people used generative AI in creations. See the next section for examples of transparency.
- **denying authorship to AI-generated works**. This ensures any recognition, responsibility and financial incentives associated with authorship remain with human creators. While practices vary and are evolving, several major research publishers currently take this approach.[83]

Impacts on connections people have with arts and culture

There are potential impacts on connections Australians have with arts and culture from applications of AI. This shapes how Australians relate to their arts and culture, whether they are creators, audiences or other participants. When Australians cannot distinguish human creations from creations involving generative AI, this prevents them from knowing who made the works before them, and how. This presents both a creator attribution and a consumer information problem.

Automated tools to distinguish between human creation and generative AI remain works in progress. In early 2023 OpenAI released its 'AI classifier' as a 'work-in-progress' tool to distinguish between text written by humans and by generative AI.[84] The tool was based on a language model trained on pairs of human-written and AI-written text. Just six months later, OpenAI withdrew the tool, citing 'its low rate of accuracy'.[85] Content identification firm Pex argues developing these tools will become harder, especially as human creators use generative AI as a tool: 'the lines between these will be increasingly blurred as musicians continue to use AI to assist the songwriting process'.[86]

Two policy options that help maintain people's links with arts and culture are:

- **attribution of human creators.** Australian copyright law already provides certain authors and performers a right to have their copyright creations or performances attributed to them. To ensure correct attribution, this is complemented by a right against false attribution. Some digital platforms already include automated attribution systems for recorded music.[87] Researchers at the Queensland University of Technology have raised concerns about the accuracy of automatic attributions on one digital platform.[88]

- **transparency about the use of generative AI.** For example, the draft European Union AI Act proposes transparency obligations for disclosure of content generated by AI.[89] The US has recently obtained a commitment from major AI firms to develop 'robust technical mechanisms to ensure that users know when content is AI generated, such as a watermarking system'.[90]

Because generative AI-transparency and human attribution systems are often AI-based systems, they may introduce further downstream impacts like the ones discussed in this paper. When such tools have low accuracy, they may create new risks. False attribution to a human creator might hide a deepfake and increase the impact of misinformation. Equally, false markings about the use of a generative AI might deny a writer or a photographer attribution, effective copyright protection and remuneration. Any systems for transparency and attribution should also account for evolving community expectations of how to attribute creations involving generative AI.

Impacts on freedom of expression

Freedom of expression is important to Australians but faces impacts when content moderation and content recommendation are automated. ANA's research indicates freedom of expression is important to people in middle Australia, who consider it an important democratic value.[91] Our national focus group study highlighted many reasons for this importance from expressing views about one's religion, building confidence and self-esteem for school children. Consistent with the view of the Australian Law Reform Commission, ANA considers the right to freedom of expression is essential to arts and culture, but not absolute.[92]

As Part 1 outlined, digital platforms are applying AI to automate content moderation and content recognition. Both have widespread impacts on freedom of expression. The Australian Human Rights Commission recognises:

> 'a competing tension on where to draw the line between freedom of expression and content moderation. This is a line where reasonable minds may differ—however moderation should not unduly impact free speech, nor should hateful content be allowed to prosper under the guise of freedom of expression.'[93]

Likewise, as one digital platform puts it:

> 'There's a risk of erring too much on one side or the other. If the [content moderation] technology is too aggressive, it will remove millions of non-violating posts. If it's not aggressive enough, it... will fail to take action on the content.'[94]

There are two common approaches to safeguarding freedom of expression from content moderation:

- **Ex ante** safeguards, which aim to ensure lawful and certain types of expression remain unaffected by content moderation. Having a 'human in the loop' in the training and testing is a safeguard across many AI-based content moderation systems. There are also specific safeguards in different policy spaces. For example, the Australian voluntary misinformation code carves out parody, satire, professional news, educational content and other important forms of expression from misinformation regulation (unless it is propagated via 'inauthentic behaviours').[95] An EU copyright directive requiring digital platforms to moderate content also requires EU countries to ensure that platform users can rely on copyright exceptions for expressions for purposes such as criticism, review and parody.[96]
- **Ex post** safeguards, which help to restore freedom of expression when content moderation goes too far. This includes complaint and redress mechanisms, as well measures for transparency and accountability when users disagree with digital platform decisions.

There is a third approach, which can help to reduce this tension. This is for digital platforms to make greater use of 'non-removal remedies' in their content moderation systems.[97] Examples include redacting content, including a warning, disabling comments, reducing searchability or visibility of the content.[98] These approaches can avoid impacts on freedom of expression from content removal which one researcher describes as a 'blunt instrument'.[99] They also avoid some unintended impacts of removal, such as perceptions of censorship, the deletion of comments (often conversations about arts and culture), and erasure of a public record of what people said.[100]

Impacts on cultural and social inclusion

The application of AI has impacts on the cultural and social inclusion in arts, culture and creativity. These impacts affect most people in Australia, but in different ways. Some impacts can exclude people in Australia based on age, gender identity, disability, or cultural and linguistical background.

In some applications, the risks for cultural and social inclusion are well established. There are ample examples of potential bias from **generative AI**. For example, a study by researchers at Queensland University of Technology and Washington State University found several biases when prompting a text-to-image tool to generate images of various journalistic roles.[101] Using Midjourney, the researchers found many roles were presented as light skinned.[102]

'News analyst', 'news commentator' and 'fact checker' were presented as older men. 'Journalist', 'reporter' and'correspondent' were presented as women in urban environments.[103]

In other applications, the risks and opportunities depend on how AI is applied. Accurate **captioning** is important to people in Australia, assisting their inclusion not only in Australian cultures and society, but also in civic life and democratic participation. The Australian Communications and Media Authority recognises improvements in automatic captioning but emphasises the continuing need for human input to ensure accuracy.[104] Human input is particularly important when captioning live broadcast television content, including news and current affairs. People with hearing impairment are 'more likely to watch television than Australians without hearing loss' but some feel 'excluded or marginalised... when they experienced poor-quality captioning, particularly when they missed important details in news coverage'.[105]

Accurate **classifications** empower viewers to find the content for them and enjoy a safe viewing experience. Conversely, inaccurate automated classifications pose risks to cultural and social inclusion. Australia has approved use of three automated classification tools.[106] Of these, at least the Netflix tool is an application of AI.[107] A review of the Netflix tool found it provided a different classification rating to the human Classification Board in one in four instances: higher in 20 per cent of instances and lower in 6 per cent of instances.[108] Ratings that are too high deny access to arts and culture experiences for young Australians (for material with a classification) or all Australians (when material is 'refused classification'). Ratings that are too low can create an unsafe or unpleasant environment, giving young Australians access to unsuitable material and exposing people to violent, abhorrent or other objectionable content that they would not choose to watch.

There are also applications where it is unclear whether overall impacts are desirable. Consider, for example, applications of AI to preserve Indigenous languages. There is national recognition that Aboriginal and Torres Strait Islander languages are in a 'critical and precarious state' and require 'conservation and revitalisation'.[109] However, applications of AI in this space can have mixed impacts. When OpenAI released an **automated speech recognition** tool for the Māori language, Indigenous New Zealanders expressed concern about a non-Māori organisation using over 1,000 hours of recorded Māori speech to create the tool.[110] On one hand, the developers of the tool used traditional cultural expressions without the endorsement of the Māori community. On the other hand, the tool may help to salvage Indigenous languages. Australia's recently released plan for Indigenous languages highlights the need to 'support communities to build and be custodians of language resources and materials'.[111] The plan also recognises a need to 'invest in community-led technological development for language solutions'.[112] Such impacts deserve attention as Australia considers how to protect traditional cultural expressions and traditional knowledge while respecting Indigenous communities and their cultures.

Conclusions and next steps

This paper demonstrates the depth and diversity of existing applications of AI in arts, culture and creativity. Australians are applying AI as a tool to create across forms and mediums, and digital platforms are applying AI to recommend and moderate content. While impacts are likely to evolve over time, some impacts are tangible now. We can see impacts on incentives to create and on freedom of expression. We can recognise changes to how people connect with arts, culture and creativity, and the uneven impacts for different Australians.

ANA welcomes efforts from all governments in Australia to design, implement and support appropriate AI governance. Coordinated governance can help to safeguard the interests of Australians in arts, culture and creativity, and secure their participation in society and culture. ANA highlights the important role Australians have in shaping the impacts of AI. Putting the right people in the development, application and evaluation of AI is essential to addressing risks and securing opportunities for arts, culture and creativity.

Applications and impacts of AI will continue to evolve as Australians learn and explore possibilities and impacts. Already, Australian educational institutions are accounting for AI, its applications and its impacts as they train the next generation of Australian participants in arts and culture.[113] ANA is watching closely and will continue to deliver an independent, evidence-led view of AI impacts on arts, culture and creativity. In 2024, ANA will release a further Analysis Paper on AI to provide an update on new applications, new sources of impacts and emerging contexts.

Endnotes

1 Only 4 in 10 surveyed Australians 'somewhat' or 'strongly' supported use of AI in 'culture', compared to almost 8 in 10 for 'health', 'medicine', 'environmental challenges' and 'crisis response'. Neil Selwyn et al., "AI for Social Good - Australian Attitudes Toward AI and Society Report.Pdf" (Monash University, 2020), https://doi.org/10.26180/13159781.V1.

2 Australian Competition and Consumer Commission, "Consumer Guarantees - A Guide for Consumers," July 2021, https://www.accc.gov.au/system/files/Consumer%20guarantees%20-%20a%20guide%20for%20consumers%20-%20July%202021.pdf.

3 A New Approach, "For Australians, by AI? Supporting Safe and Responsible AI in Australia Submission," July 18, 2023, https://newapproach.org.au/wp-content/uploads/2023/07/ANA-Safe-Responsible-AI-submission-2023.pdf.

4 Zoë Corbyn, "Microsoft's Kate Crawford: 'AI Is Neither Artificial nor Intelligent,'" The Observer, June 6, 2021, sec. Technology, https://www.theguardian.com/technology/2021/jun/06/microsofts-kate-crawford-ai-is-neither-artificial-nor-intelligent; Ellen Broad, Made by Humans - The AI Condition (Melbourne: Melbourne University Press, 2018).

5 Some uses do not require copyright permission or payment. This includes uses permitted by copyright exceptions and uses of material released under an open licence.

6 Alistair Reid, Simon O'Callaghan, and Yaya Lu, "Implementing Australia's AI Ethics Principles Report" (Gradient Institute and CSIRO, 2023), https://www.csiro.au/en/work-with-us/industries/technology/national-ai-centre/implementing-australias-ai-ethics-principles-report.

7 The Royal Society is the UK's national academy for sciences. You and AI – the Politics of AI (The Royal Society, 2018), https://www.youtube.com/watch?v=HPopJb5aDyA; 43:46.

8 The core function of generative AI is to enable people to 'generate novel content, as varied as text, image, music and computing code, in response to a user prompt'. Genevieve Bell et al., "Rapid Response Information Report: Generative AI," 2023, 2, https://www.chiefscientist.gov.au/sites/default/files/2023-05/Rapid%20Response%20Information%20Report%20-%20Generative%20AI.pdf.

9 Department for Trade and Investment, "Games Developer Creates Artificial Intelligence That Puts Game in Top 10 Indie Aussie-Made Games," February 14, 2023, https://dti.sa.gov.au/articles/games-developer-creates-artificial-intelligence-that-puts-game-in-top-10-indie-aussie-made-games; Courtney Borrett, "Pushing the Boundaries of AI and Psychology in DarkwebSTREAMER," Game Developer, December 21, 2022, https://www.gamedeveloper.com/design/pushing-the-boundaries-of-human-psychology-procedural-generation-and-artificial-intelligence-in-darkwebstreamer.

10 Outlines: Beyond Black - AI Captures Human Motion Data to Make New Choreography | Behind the Scenes (Sydney: Sydney Opera House, 2021), https://www.youtube.com/watch?v=AdoKzCukTEI.

11 "Shang-Chi and the Legend of the Ten Rings," RSP, September 9, 2021, https://www.rsp.com.au/our-work/filmography/shang-chi-and-the-legend-of-the-ten-rings/.

12 "Kito and Grimes Share New AI Collaborative Track Made Using 'Elf.Tech,'" Mixmag, accessed July 25, 2023, https://mixmag.net/read/kito-and-grimes-share-new-ai-collaborative-track-made-using-grimes-ai-software-elf-tech-news; Kito, "I Used Grimes' AI Vocals to Make a Hit – Here's How I Did It," NME (blog), May 22, 2023, https://www.nme.com/en_au/features/music-features/grimes-kito-cold-touch-artificial-intelligence-3446663.

13 CreateSafe, "Elf.Tech: GrimesAI-1 Voiceprint," accessed July 25, 2023, https://createsafe.notion.site/Elf-Tech-GrimesAI-1-Voiceprint-610d81fcf2844419afafab493c6ec4b4https://www.notion.so.

14 Amanda Hoover, "AI-Generated Music Is About to Flood Streaming Platforms," Wired, accessed July 25, 2023, https://www.wired.com/story/ai-generated-music-streaming-services-copyright/.

15 Uitdenbogerd, "My First AI Song Contest Experience: It's Not a Bug; It's a Feature!"; James Vincent, "Australia Wins First AI 'Eurovision Song Contest' by Sampling Koalas and Kookaburras," The Verge, May 14, 2020, https://www.theverge.com/2020/5/14/21258493/ai-eurovision-song-contest-australia-winning-entry-uncanny-valley.

16 Uncanny Valley is a registered publisher member of the Australian and New Zealand music rights management organisation APRA AMCOS. See https://www.apraamcos.com.au/music-creators/membership-explained/what-a-publisher-does/apra-publisher-members-list and https://www.apraamcos.com.au/music-creators/membership-explained/what-a-publisher-does/amcos-publisher-members-list.

17 Natasha Ziebell and Jemma Skeat, "How Is Generative AI Being Used by University Students and Academics? Semester 1, 2023" (Melbourne Graduate School of Education, University of Melbourne, 2023), https://education.unimelb.edu.au/__data/assets/pdf_file/0010/4677040/Generative-AI-research-report-Ziebell-Skeat.pdf.

18 Tory Shepherd, "South Australian Universities to Allow Use of Artificial Intelligence in Assignments, If Disclosed," The Guardian, January 21, 2023, sec. Australia news, https://www.theguardian.com/australia-news/2023/jan/21/south-australian-universities-to-allow-use-of-artificial-intelligence-in-assignments-if-disclosed.

19 Curtin University, "How Can I Access Grammarly and What Can I Use It For?," Curtin Connect - Find an answer, May 12, 2023, https://students.connect.curtin.edu.au/app/answers/detail/a_id/1976/~/how-can-i-access-grammarly-and-what-can-i-use-it-for%3F.

20 National Gallery of Victoria, "Refik Anadol - Quantum Memories," NGV, 2000, https://www.ngv.vic.gov.au/refik-anadol-quantum-memories/.
21 Quantum Memories," Refik Anadol, 2020, https://refikanadol.com/works/quantummemories/.
22 Powerhouse Museum, "Powerhouse Late: AI," August 8, 2023, https://powerhouse.com.au/program/powerhouse-late-ai#overview.
23 For example, on person generated the dialogue for the live and AI actors, while another generated the voice for the AI actor.
24 "Grammarly: Free Online Writing Assistant," 2023, https://www.grammarly.com/a/grammarlygo.
25 Adobe, "Generative Fill - Adobe Photoshop," accessed August 3, 2023, https://www.adobe.com/au/products/photoshop/generative-fill.html.
26 Thomas Dohmke, "GitHub Copilot Is Generally Available to All Developers," The GitHub Blog (blog), June 21, 2022, https://github.blog/2022-06-21-github-copilot-is-generally-available-to-all-developers/.
27 Microsoft Corporate Blogs, "Furthering Our AI Ambitions – Announcing Bing Chat Enterprise and Microsoft 365 Copilot Pricing," The Official Microsoft Blog, July 18, 2023, https://blogs.microsoft.com/blog/2023/07/18/furthering-our-ai-ambitions-announcing-bing-chat-enterprise-and-microsoft-365-copilot-pricing/.
28 Dean Roper, "Michael Miller on How NewsCorp Australia Has Taken a Stand and Transformed Its Journalism and Business," World Association of News Publishers (WAN-IFRA), July 12, 2023, https://wan-ifra.org/2023/07/michael-miller-on-how-newscorp-australia-has-taken-a-stand-and-transformed-its-journalism-and-business/.
29 Associated Press, "Leveraging AI to Advance the Power of Facts: Artificial Intelligence at The Associated Press," accessed July 25, 2023, https://www.ap.org/discover/artificial-intelligence.
30 Reuters, "Associated Press, OpenAI Partner to Explore Generative AI Use in News," Reuters, July 13, 2023, sec. Media & Telecom, https://www.reuters.com/business/media-telecom/associated-press-openai-partner-explore-generative-ai-use-news-2023-07-13/.
31 Benjamin Mullin and Nico Grant, "Google Tests A.I. Tool That Is Able to Write News Articles," The New York Times, July 20, 2023, sec. Business, https://www.nytimes.com/2023/07/19/business/google-artificial-intelligence-news-articles.html.
32 Google, "Get Started with Auto-Narrated Audiobooks," Google Play Books Partner Center Help, 2023, https://support.google.com/books/partner/answer/9955361?p=autonarrated#zippy=%2Cedit-the-audio-file; Google, "Auto-Narrated Audiobook Narrator Library," Google Play Books Partner Center Help, 2023, https://support.google.com/books/partner/table/10957334?hl=en.
33 In the Apple Books app, ANA found auto-narrated audiobooks labelled as 'Narrated by Apple Books'. It is unclear whether Apple's automated narration service is available to authors and publishers in Australia. Apple, "Digital Narration for Audiobooks - Apple Books for Authors," Apple Books for Authors, 2023, https://authors.apple.com/support/4519-digital-narration-audiobooks. Ingrid Fuary-Wagner, "How Real People Are Using AI to Make Life Easier," Australian Financial Review, August 8, 2023, sec. technology, https://www.afr.com/technology/how-real-people-are-using-ai-to-make-life-easier-20230804-p5du0t; James Purtill, "How ChatGPT and Other New AI Tools Are Being Used by Lawyers, Architects and Coders," ABC News, January 24, 2023, https://www.abc.net.au/news/science/2023-01-25/chatgpt-midjourney-generative-ai-and-future-of-work/101882580.
34 Tomas Lawton, Kazjon Grace, and Francisco J Ibarrola, "When Is a Tool a Tool? User Perceptions of System Agency in Human–AI Co-Creative Drawing," in Proceedings of the 2023 ACM Designing Interactive Systems Conference (DIS '23: Designing Interactive Systems Conference, Pittsburgh PA USA: ACM, 2023), 1978–96, https://doi.org/10.1145/3563657.3595977.
35 Lawton, Grace, and Ibarrola, 1980.
36 Orima Research, "Consumer Survey on Online Copyright Infringement 2022 - Survey Findings Report (Commissioned by the Australian Attorney-General's Department)," Attorney-General's Department, February 10, 2023, https://www.ag.gov.au/rights-and-protections/publications/annual-consumer-surveys-online-copyright-infringement.
37 These are Google Search and Microsoft Bing, based on share of search advertising. ACCC, "Digital Platforms Inquiry Final Report" (Canberra: Australian Competition and Consumer Commission, 2019), 94–95, https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf. Microsoft's Bing Search is integrated into OpenAI's ChatGPT. Yusuf Mehdi, "Bing at Microsoft Build 2023: Continuing the Transformation of Search," Microsoft Bing Blogs, May 23, 2023, https://blogs.bing.com/search/may_2023/Bing-at-Microsoft-Build-2023/. Likewise, Google Search also includes a generative AI based chatbot. Elizabeth Reid, "Supercharging Search with Generative AI," Google, May 10, 2023, https://blog.google/products/search/generative-ai-search/.
38 Ingrid Mason, Rachel Merrick, and Kevin Bradley, "Webinar: What's in It for Me? AI and Machine Learning for Librarians," National and State Libraries Australasia, May 19, 2021, https://www.nsla.org.au/resources/webinar-ai-machine-learning/; Hilary Berthon and Julia Hickie, "Digitising Journals on Trove," Trove, February 14, 2018, https://trove.nla.gov.au/presentation/digitising-journals-trove.
39 Ry Crozier, "ABC Uses Machine Learning to Improve Results in Revamped Search," iTnews, September 3, 2019, https://www.itnews.com.au/news/abc-uses-machine-learning-to-improve-results-in-revamped-search-530277.
40 Abbie O'Brien, "How AI Is Helping Preserve Indigenous Languages," SBS News, 2018, https://www.sbs.com.au/news/article/how-ai-is-helping-preserve-indigenous-languages/w3jfh4lln.
41 Erin Kalejs, "How AI Is Helping Indigenous Languages Survive and Thrive," AI for Good (blog), August 9, 2022, https://aiforgood.itu.int/how-ai-is-helping-indigenous-languages-survive-and-thrive/; Te Reo Māori Speech Recognition (Te Hiku Media, 2020), https://tehiku.nz/te-hiku-tech/papa-reo/14135/te-reo-maori-speech-recognition.
42 Sydney Jewish Museum, "Reverberations: A Future for Memory," Sydney Jewish Museum, 2023, https://sydneyjewishmuseum.com.au/exhibition/reverberations/. The Californian firm StoryFile takes this a leap further by promising 'people the opportunity to share their life story from beyond the grave'. Grace Tobin, Amy Donaldson, and Jessica Longbottom, "Alexander's Loving 'wife' Lives inside an App. He Says She's Exactly What He Needs," ABC News, May 7, 2023, https://www.abc.net.au/news/2023-05-08/generative-artificial-intelligence-ai-deepfakes-four-corners/102288216.
43 Carley Rosengreen, "Rock Art Detection via Machine Learning Model a Breakthrough," Griffith News, June 28, 2022, https://news.griffith.edu.au/2022/06/28/rock-art-detection-via-machine-learning-model-a-breakthrough/; Sarah Richards, "'The Old People Are Smiling': Artificial Intelligence Helps Catalogue Aboriginal Rock Art in Far North Queensland," ABC News, September 14, 2023, https://www.abc.net.au/news/2023-09-15/artificial-intelligence-rock-art-far-north-queensland-indigenous/102851802.
44 Creative Australia, "Creating Value: Results of the National Arts Participation Survey," September 19, 2023, 182, https://creative.gov.au/advocacy-and-research/creating-value/. This 2022 survey result is up from 64% in the 2019 survey, conducted prior to the 2019-20 bushfires and the

COVID-19 pandemic. Australia Council for the Arts, "Creating Our Future: Results of the National Arts Participation Survey" (Sydney: Australia Council for the Arts, 2020), https://www.australiacouncil.gov.au/research/wp-content/uploads/2020/08/Creating-Our-Future-Results-of-the-National-Arts-Participation-Survey-PDF.pdf.

45 Spotify, "Machine Learning," Spotify Research, 2023, https://research.atspotify.com/machine-learning/. Likewise, Google and Microsoft have integrated chatbots into their search engines. Yusuf Mehdi, "Bing at Microsoft Build 2023: Continuing the Transformation of Search," Microsoft Bing Blogs, May 23, 2023, https://blogs.bing.com/search/may_2023/Bing-at-Microsoft-Build-2023/; Elizabeth Reid, "Supercharging Search with Generative AI," Google, May 10, 2023, https://blog.google/products/search/generative-ai-search/.

46 Netflix Research, "Machine Learning - Learning How to Entertain the World," 2023,

47 Meta, "How Enforcement Technology Works | Transparency Centre," January 19, 2023, https://transparency.fb.com/en-gb/enforcement/detecting-violations/how-enforcement-technology-works/.

48 An Emote is an icon a user can use to express an emotion when commenting in a specific Twitch channel. Linda Liu, "Smarter, Better, Faster: Using Machine Learning to Review Emotes," Twitch, June 22, 2022, https://blog.twitch.tv/en/2022/06/22/smarter-better-faster-using-machine-learning-to-review-emotes/.

49 Google, "How Google Fights Piracy," 2019, https://www.blog.google/documents/27/How_Google_Fights_Piracy_2018.pdf/.

50 Diana Pfeil, "Building Attribution Engine: How R&D Fuels Our Groundbreaking Products," Pex, February 10, 2022, https://pex.com/blog/building-attribution-engine-how-rd-fuels-our-groundbreaking-products/; David Southwell, "Pex by the Numbers - 2023," Pex, March 3, 2023, https://pex.com/blog/pex-by-the-numbers-2023/.

51 The DIGI misinformation code explicitly covers recommender systems. Meta's transparency report under the code says the firm 'takes steps to limit the possible distribution of misinformation via recommendations'. Digital Industry Group Inc., "Australian Code of Practice on Disinformation and Misinformation," December 22, 2022, https://digi.org.au/wp-content/uploads/2022/12/Australian-Code-of-Practice-on-Disinformation-and-Misinformation-FINAL-_-December-22-2022.docx.pdf; Meta, "Meta Response to the Australian Disinformation and Misinformation Industry Code," May 2023, https://digi.org.au/wp-content/uploads/2023/05/Meta_2023-AU-Misinformation-Transparency-report_v1.pdf.

52 Guy Rosen, "How We're Tackling Misinformation Across Our Apps," Meta (blog), March 22, 2021, https://about.fb.com/news/2021/03/how-were-tackling-misinformation-across-our-apps/.

53 Susan Wojcicki, "An Update on Kids and Data Protection on YouTube," YouTube Official Blog, September 4, 2019, https://blog.youtube/news-and-events/an-update-on-kids/.

54 Australian Communications and Media Authority, "How We Watch and Listen to Content - Executive Summary and Key Findings," Communications and Media in Australia, February 2023, https://www.acma.gov.au/publications/2023-02/report/communications-and-media-australia-how-we-watch-and-listen-content.

55 Lee Hunter, "Making TikTok More Accessible: Auto Captions Launches in Australia and New Zealand," TikTok Newsroom, August 16, 2019, https://newsroom.tiktok.com/en-au/making-tiktok-more-accessible-auto-captions-launches-in-australia-and-new-zealand; YouTube Help, "Use Automatic Captioning," accessed July 24, 2023, https://support.google.com/youtube/answer/6373554?hl=en&ref_topic=7296214&sjid=4107585118435964228-AP.

56 Australian Communications and Media Authority, "Captions That TV Broadcasters Must Provide" (Australian Communications and Media Authority, October 5, 2021), https://www.acma.gov.au/captions-tv-broadcasters-must-provide.

57 AI Media, "What Is Respeaking? The Conclusive Guide," 2017, https://blog.ai-media.tv/blog/what-is-respeaking.

58 Mike Kent et al., "Mainstreaming Captions for Online Lectures in Higher Education in Australia" (Curtin University, 2017), https://www.ncsehe.edu.au/wp-content/uploads/2017/04/MainstreamingCaptions_FinalReport.pdf. See also Eleanor J. Dommett et al., "Effects of Captions, Transcripts and Reminders on Learning and Perceptions of Lecture Capture," International Journal of Educational Technology in Higher Education 19, no. 1 (December 2022): 20, https://doi.org/10.1186/s41239-022-00327-9.

59 For example, Macquarie University suggested its staff use Zoom automated captioning. Amanda Parker, "Live Automated Transcription and Captioning Now Available in Zoom," Teche (blog), March 29, 2021, https://teche.mq.edu.au/2021/03/live-automated-transcription-and-captioning-now-available-in-zoom/.

60 Adobe, "Speech to Text in Premiere Pro," July 7, 2023, https://helpx.adobe.com/content/help/au/en/premiere-pro/using/speech-to-text.html.

61 Barbara Krasnoff, "Find the Best AI-Powered App to Transcribe Your Audio," The Verge, August 24, 2022, https://www.theverge.com/23316220/transcription-ai-otter-temi-how-to.

62 Australian Bureau of Statistics, "Australia's Population by Country of Birth," April 26, 2022, https://www.abs.gov.au/statistics/people/population/australias-population-country-birth/latest-release; Australian Bureau of Statistics, "Snapshot of Australia," June 28, 2022, https://www.abs.gov.au/statistics/people/people-and-communities/snapshot-australia/latest-release. Australian Bureau of Statistics, "Cultural Diversity of Australia," September 20, 2022, https://www.abs.gov.au/articles/cultural-diversity-australia.

63 Microsoft, "Translator – Translation Software as a Service," Microsoft Azure, 2023, https://azure.microsoft.com/en-us/products/ai-services/translator.

64 Meta, "200 Languages within a Single AI Model: A Breakthrough in High-Quality Machine Translation," Meta AI, 2022, https://ai.facebook.com/blog/nllb-200-high-quality-machine-translation/.

65 YouTube, "YouTube Tools to Translate Your Content - YouTube Help," YouTube Help, c2023, https://support.google.com/youtube/answer/4792576?hl=en#zippy=%2Cadd-your-own-translations; Google Keynote (Google I/O '22), 2022, https://support.google.com/youtube/answer/4792576?hl=en#zippy=%2Cadd-your-own-translations.

66 Jay Peters, "YouTube Is Getting AI-Powered Dubbing," The Verge, June 22, 2023, https://www.theverge.com/2023/6/22/23769881/youtube-ai-dubbing-aloud; Ritz Campbell, "MrBeast, Now in Spanish! Say Hello to Multi-Language Audio on YouTube," YouTube Official Blog, accessed August 4, 2023, https://blog.youtube/news-and-events/multi-language-audio-mrbeast-interview/.

67 Australian Classification, "Classification Tool Ratings" (Australian Classification, May 15, 2023), https://www.classification.gov.au/classification-ratings/classification-tool-ratings.

68 Neville Stevens, "Review of Australian Classification Regulation," May 2020, https://www.infrastructure.gov.au/department/media/publications/

review-australian-classification-regulation-stevens-review.

69 Ana Vidal Egea, "Kate Crawford: 'We Need to Have a Much More Comprehensive Form of AI Governance,'" El País, May 27, 2023, sec. Science & Tech, https://english.elpais.com/science-tech/2023-05-27/kate-crawford-we-need-to-have-a-much-more-comprehensive-form-of-ai-governance.html.

70 U.S. Department of State, "Secretary Antony J. Blinken and U.S.-EU Trade and Technology Council Ministerial Co-Chairs at a Joint Press Availability," May 31, 2023, https://www.state.gov/secretary-antony-j-blinken-and-u-s-eu-trade-and-technology-council-ministerial-co-chairs-at-a-joint-press-availability/; Associated Press, "US, Europe Working on Voluntary AI Code of Conduct as Calls Grow for Regulation," AP News, May 31, 2023, https://apnews.com/article/artificial-intelligence-voluntary-code-of-conduct-regulation-585f2aaff6bfbdbcee572b347fa97cff.

71 U.S. Department of State, "Secretary Antony J. Blinken and U.S.-EU Trade and Technology Council Ministerial Co-Chairs at a Joint Press Availability," May 31, 2023, https://www.state.gov/secretary-antony-j-blinken-and-u-s-eu-trade-and-technology-council-ministerial-co-chairs-at-a-joint-press-availability/.

72 Ed Husic, "Interview with Martin Soong, CNBC Singapore," Ministers for the Department of Industry, Science and Resources, July 26, 2023, https://www.minister.industry.gov.au/ministers/husic/transcripts/interview-martin-soong-cnbc-singapore.

73 European Commission. Directorate General for Communications Networks, Content and Technology. et al., Study on Copyright and New Technologies: Copyright Data Management and Artificial Intelligence. (LU: Publications Office, 2022), https://data.europa.eu/doi/10.2759/570559.

74 Kate Fielding, Angela Vivian, and Sari Rossi, "To Scale: Mapping Financial Inflows in Australian Arts, Culture and Creativity," Insight Report (Canberra: A New Approach, 2023), https://newapproach.org.au/insight-reports/to-scale-mapping-financial-inflows-in-australian-arts-culture-creativity/, section 2.2 Regulation and Impact Assessment.

75 Representatives of copyright owners reiterated these concerns at the Attorney-General Department's Roundtable on Copyright and AI in August 2023. See the Attorney-General's Department's high-level summary of the outcomes of the roundtable: https://www.ag.gov.au/rights-and-protections/publications/high-level-summary-third-roundtable-copyright.

76 Dan Milmo, "Sarah Silverman Sues OpenAI and Meta Claiming AI Training Infringed Copyright," The Guardian, July 10, 2023, sec. Technology, https://www.theguardian.com/technology/2023/jul/10/sarah-silverman-sues-openai-meta-copyright-infringement; Blake Brittain, "AI Companies Ask U.S. Court to Dismiss Artists' Copyright Lawsuit," Reuters, April 19, 2023, sec. Legal, https://www.reuters.com/legal/ai-companies-ask-us-court-dismiss-artists-copyright-lawsuit-2023-04-19/.

77 "Press Release: AI Act: A Step Closer to the First Rules on Artificial Intelligence," May 11, 2023, https://www.europarl.europa.eu/news/en/press-room/20230505IPR84904/ai-act-a-step-closer-to-the-first-rules-on-artificial-intelligence.

78 Fielding, Vivian, and Rossi, "To Scale: Mapping Financial Inflows in Australian Arts, Culture and Creativity", section 2.2 Regulation and Impact Assessment.

79 European Commission. Directorate General for Communications Networks, Content and Technology. et al., Study on Copyright and New Technologies: Copyright Data Management and Artificial Intelligence. (LU: Publications Office, 2022), https://data.europa.eu/doi/10.2759/570559.

80 References omitted. Bell et al., "Rapid Response Information Report: Generative AI," 9.

81 "Copyright Act 1968 (Incorporating Amendments up to Act No. 105 of 1992)," Cth (1992), http://www.legislation.gov.au/Details/C2004C03025, section 135ZZP.

82 The researcher is a member of the Copyright Advisory Committee to the Dutch Government and President of the European Copyright Society. Martin Senftleben, "Generative AI and Author Remuneration," SSRN Electronic Journal, 2023, https://doi.org/10.2139/ssrn.4478370.

83 For example, see the publishing policies of Nature (https://www.nature.com/nature-portfolio/editorial-policies/ai) and Elsevier (https://www.elsevier.com/about/policies/publishing-ethics/the-use-of-ai-and-ai-assisted-writing-technologies-in-scientific-writing).

84 Jan Hendrik Kirchner et al., "New AI Classifier for Indicating AI-Written Text," July 20, 2023, https://openai.com/blog/new-ai-classifier-for-indicating-ai-written-text.

85 Kirchner et al.

86 Diana Pfeil, "Real or Fake: Identifying AI-Generated Music and Voices," Pex, July 19, 2023, https://pex.com/blog/real-or-fake-identifying-ai-generated-music-and-voices/.

87 YouTube and TikTok are two such platforms. YouTube, "Music in This Video," YouTube Help, May 24, 2019, https://support.google.com/youtube/answer/7680188; D. Bondy Valdovinos Kaye et al., "You Made This? I Made This: Practices of Authorship and (Mis)Attribution on TikTok," International Journal of Communication 15 (2021): 3195–3215, https://ijoc.org/index.php/ijoc/article/view/14544.

88 Kaye et al., "You Made This? I Made This: Practices of Authorship and (Mis)Attribution on TikTok."

89 This extends the existing Digital Services Act obligation for prominent markings for deepfakes and similar manipulated images, audio and videos. European Commission, "Proposal for an Artificial Intelligence Act," COM/2021/206 final § (2021), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52021PC0206; European Parliament and Council, "Digital Services Act," Regulation (EU) 2022/2065 § (2022), https://eur-lex.europa.eu/eli/reg/2022/2065/oj.

90 The White House, "Fact Sheet: Biden-Harris Administration Secures Voluntary Commitments from Leading Artificial Intelligence Companies to Manage the Risks Posed by AI," The White House, July 21, 2023, https://www.whitehouse.gov/briefing-room/statements-releases/2023/07/21/fact-sheet-biden-harris-administration-secures-voluntary-commitments-from-leading-artificial-intelligence-companies-to-manage-the-risks-posed-by-ai/.

91 Kate Fielding and Jodie-Lee Trembath, "A View from Middle Australia: Perceptions of Arts, Culture and Creativity," Insight Series (Canberra: A New Approach and the Australian Academy of the Humanities, May 2020), https://newapproach.org.au/wp-content/uploads/2021/07/3-ANA-InsightReportThree-FullReport.pdf.

92 Australian Law Reform Commission, "Traditional Rights and Freedoms— Encroachments by Commonwealth Laws," 2015, 78, https://www.alrc.gov.au/wp-content/uploads/2019/08/alrc_129_final_report_.pdf.

93 Australian Human Rights Commission, "Human Rights in the Digital Age: Additional Material Submitted to the UN Global Digital Compact" (United Nations' Office of the Secretary-General's Envoy on Technology, April 30, 2023), 21, https://www.un.org/techenvoy/sites/www.un.org.techenvoy/

files/GDC-submission-Australia-Human-Rights-Commission.pdf.

94 Meta, "How Enforcement Technology Works | Transparency Centre."

95 In a recent policy submission, ANA supported carving out content 'produced and disseminated in good faith' for important forms of expression from a proposed regulatory oversight regime for misinformation on digital platforms. A New Approach, "Submission on Exposure Draft Bill: Communications Legislation Amendment (Combatting Misinformation and Disinformation) Bill 2023," 2023, https://newapproach.org.au/wp-content/uploads/2023/08/ANA-Submission-Combatting-Misinformation-and-Disinformation-2023.pdf. Digital Industry Group Inc., "Australian Code of Practice on Disinformation and Misinformation."

96 The directive requires digital platforms to take down certain copyright material and ensure it stays down. Some call this a 'takedown and staydown' requirement. European Commission, "Guidance on Article 17 of Directive 2019/790 on Copyright in the Digital Single Market," 2021, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021DC0288.

97 Professor Goldman provides a useful catalogue of remedy options. Eric Goldman, "Content Moderation Remedies," Michigan Technology Law Review 28, no. 1 (2021), https://doi.org/10.36645/mtlr.28.1.content.

98 Goldman.

99 Tarleton Gillespie, Custodians of the Internet: Platforms, Content Moderation, and the Hidden Decisions That Shape Social Media (New Haven: Yale University Press, 2018), 176. See also Nicolas P. Suzor, Lawless: The Secret Rules That Govern Our Digital Lives (Cambridge, United Kingdom; New York, NY: Cambridge University Press, 2019).

100 Goldman, "Content Moderation Remedies," 21.

101 Ryan J. Thomas and T. J. Thomson, "What Does a Journalist Look like? Visualizing Journalistic Roles through AI," Digital Journalism, (July 7, 2023): 1–23, https://doi.org/10.1080/21670811.2023.2229883.

102 Thomas and Thomson.

103 Thomas and Thomson.

104 Australian Communications and Media Authority, "Consultation Paper: Proposal to Remake the Broadcasting Services (Television Captioning Standard 2013)," May 2, 2023, 12, https://www.acma.gov.au/sites/default/files/2023-04/proposal_to_remake_the_broadcasting_services_television_captioning_standard_2013_consultation_paper_0.docx.

105 Australian Communications and Media Authority, "Use and Experience of Consumer Captioning: Consumer Research to Support ACMA Captioning Quality Standard Review" (Australian Communications and Media Authority, May 2, 2023), 3, https://www.acma.gov.au/sites/default/files/2023-04/use_and_experience_of_consumer_captioning_-_consumer_research_to_support_acma_captioning_quality_standard_review.docx.

106 Australian Classification, "Classification Tool Ratings."

107 The Stevens Review explains the Netflix Classification Tool involves human review by content experts to tag content, an algorithm developed by Netflix converting tags to Australian classifications, and Department monitoring and auditing of automated classifications. Stevens, "Review of Australian Classification Regulation."

108 Department of Communications and the Arts, "Monitoring Program for the Netflix Classification Tool 2018–19," 2019.

109 First Languages Australia and Department of Infrastructure, Transport, Regional Development, Communications and the Arts, "Voices of Country - Australia's Action Plan for the International Decade of Indigenous Languages 2022–2032," August 17, 2023, 4, 6, https://www.arts.gov.au/sites/default/files/documents/voices-of-country—australias-action-plan-for-the-international--decade-of-indigenous-languages-2022-2032.pdf.

110 Rina Chandran, "Indigenous Groups in NZ, US Fear Colonisation as AI Learns Their Languages," Reuters, April 3, 2023, sec. Cyclical Consumer Goods, https://www.reuters.com/article/newzealand-tech-lawmaking-idUSL8N2UQ0EC.

111 First Languages Australia and Department of Infrastructure, Transport, Regional Development, Communications and the Arts, "Voices of Country - Australia's Action Plan for the International Decade of Indigenous Languages 2022–2032," 34.

112 Emphasis added. First Languages Australia and Department of Infrastructure, Transport, Regional Development, Communications and the Arts, "Voices of Country - Australia's Action Plan for the International Decade of Indigenous Languages 2022–2032."

113 For example, see Group of Eight Australia, "Go8 Submission to the Inquiry into the Use of Generative Artificial Intelligence in the Australian Education System," July 14, 2023, https://go8.edu.au/go8-submission-to-the-inquiry-into-the-use-of-generative-artificial-intelligence-in-the-australian-education-system; Universities Australia, "Submission to the Inquiry into the Use of Generative Artificial Intelligence in the Australian Education System," July 14, 2023, https://www.universitiesaustralia.edu.au/submission/submission-to-the-inquiry-into-the-use-of-generative-artificial-intelligence-in-the-australian-education-system/.