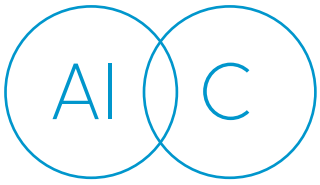
DACS

# Stakeholder session on Artificial Intelligence (AI) and copyright law in response to the UK Government consultation on AI and intellectual property



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# Executive Summary



To assist in responding to the UK Government consultation on AI and intellectual property, DACS invited visual artists to join a stakeholder session – a virtual 'town hall' meeting where they could share their experiences and thoughts on AI and their practice. This report details the stakeholder session held on 2 December 2021. It sets out the information shared by keynote speaker, AI expert Andrew Burgess, together with details of two breakout sessions where artists were invited to speak candidly.

The exercise was fruitful in gathering insight and testimony. Some artists exhibited a deep understanding of AI and how it could improve their work. They posed questions that probed, philosophically, what it means to be a creator and whether the machinations of an algorithm is an artwork in itself. Simultaneously, other artists warned that AI, in the context of immense technological revolution – including blockchain and non-fungible tokens – can have negative implications on the rights of the individual creator. Some felt apprehensive of the speed of developments in AI, whereas some felt AI had not developed enough for the government to consult on changing the law.

In the main, artists considered that licensing their work is vital as it provides not only autonomy over the use of the work and remuneration, but it also builds trust. Trust was a repeated theme, with some artists feeling that the output of AI (rather than machine learning) is opaque.

Artists also compared AI industries with traditional industries. Why, one artist asked, should AI be any different to someone making a poster of my work?

Discussing AI highlighted related considerations: ethical, environmental and educational. All participants agreed that the government should consider ethical issues when consulting on AI. Artists considered AI together with blockchain where vast resources are used in minting and mining, leading to strong sustainability concerns. Artists recommended that AI is used in education, to ensure that the younger generation of artists have the understanding to harness the tools AI can provide.

AI has already transformed the lives of many people, but it also has a vast creative potential. Artists want to be involved, to collaborate and to benefit from new technologies. Licensing is a way of keeping artists in the frame, and fairly remunerated.

## Background

The IPO is consulting on the relationship between Artificial Intelligence (AI) and Intellectual Property in more detail after a prior consultation in 2021. The government has a long-term plan to boost AI as part of national AI strategy and the AI sector deal. The government wants to ensure there are the right conditions for businesses to innovate. DACS has worked with its artist and artist estate members to offer a submission to the Intellectual Property Office to provide evidence and understanding on how the government's plans will affect these stakeholders.

DACS hosted a meeting on 2 December 2021 to understand the views of visual artists on AI as it relates to copyright. Thirty (30) people participated in the event.

Attendees were asked to interact in the session to share their views through polling and taking part in a breakout session to provide their perspective on aspects of AI and copyright.

## About DACS

Established by artists for artists, DACS is a not-for-profit visual artists' rights management organisation. Passionate about transforming the financial landscape for visual artists through innovative new products and services, DACS acts as a trusted broker for 180,000 artists worldwide.

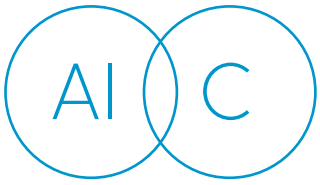
Founded over 30 years ago, DACS is a flagship organisation that campaigns for artists' rights, championing their sustained and vital contribution to the creative economy. DACS collects and distributes royalties to visual artists and their estates through Payback, Artist's Resale Right, Copyright Licensing and Artimage. In 2020, we paid £15.2 million in royalties to 72,000 artists and estates.

## About Andrew Burgess

A management consultant, author and speaker with over 25 years' experience, Andrew is considered an authority on innovative and disruptive technologies including Artificial Intelligence and Robotic Process Automation, and is regularly invited to speak at conferences on these subjects. He is the author of 'The Executive Guide to Artificial Intelligence (Palgrave MacMillan, 2018), Visiting Senior Fellow in AI and RPA at Loughborough University and Expert-in-Residence for AI at Imperial College's Enterprise Lab. He is a prolific writer on the 'future of work', and is frequently published in industry magazines and blogs.

# Part One

## Keynote presentation on Artificial Intelligence and art, delivered by Andrew Burgess

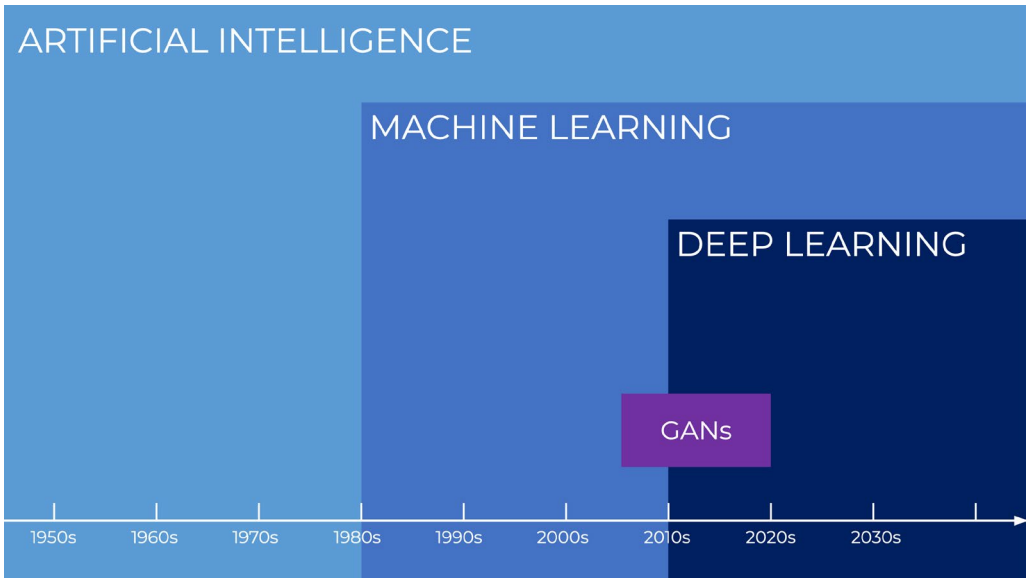


## *Edmond de Belamy*

'Edmond de Belamy' is the name of a portrait painting constructed in 2018 by Paris-based arts collective Obvious. The work is unique for being the first artwork created using artificial intelligence auctioned by Christie's auction house, where it fetched $432,500 in 2018.

Using Edmond de Belamy as an example, we can explore how AI is used in the art world, and how the effect of this portrait was achieved using AI technology.

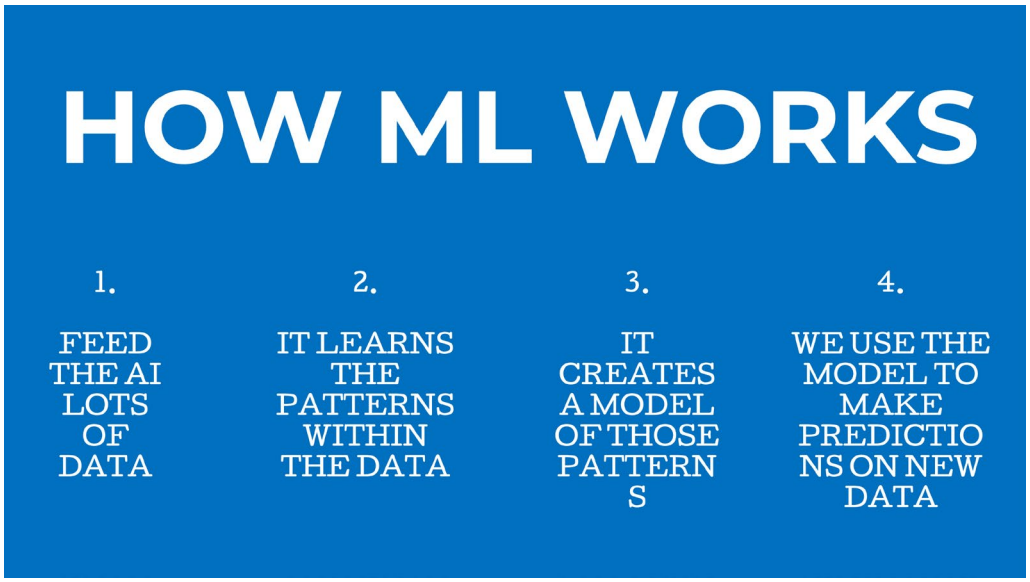
Artificial intelligence has been around since the 1950s in some form or another, and now exists in our lives as chatbots or predictive analytics. Since the 1980s onwards, machine learning emerged as a subset of AI. Machine learning is where a computer creates a model based on certain data, and then uses this data to, for example, make predictions or decisions.




Deep learning is a subset of machine learning which is more complex, using deep neural networks that mimic the structure of the brain.

## *Machine learning*

This is an example of how machine learning works. The first step is feeding data to the AI, which is an algorithm. The data could be structured, such as a database, or unstructured data like images.




The AI then learns patterns from this data, for example pixels in a photograph. Next, which is the key to machine learning, the AI creates a model of these patterns. Finally it uses this model to make predictions on new data.

Machine learning models are used in real life to create predictions. A housing association can predict, using machine learning models, the likelihood of a person going into rent arrears. Based on the person's demographic, rent arrears history and the state or nature of the property they are in, machine learning tools can assist housing associations to identify these people before they fall into arrears and allow them to take preventative action.

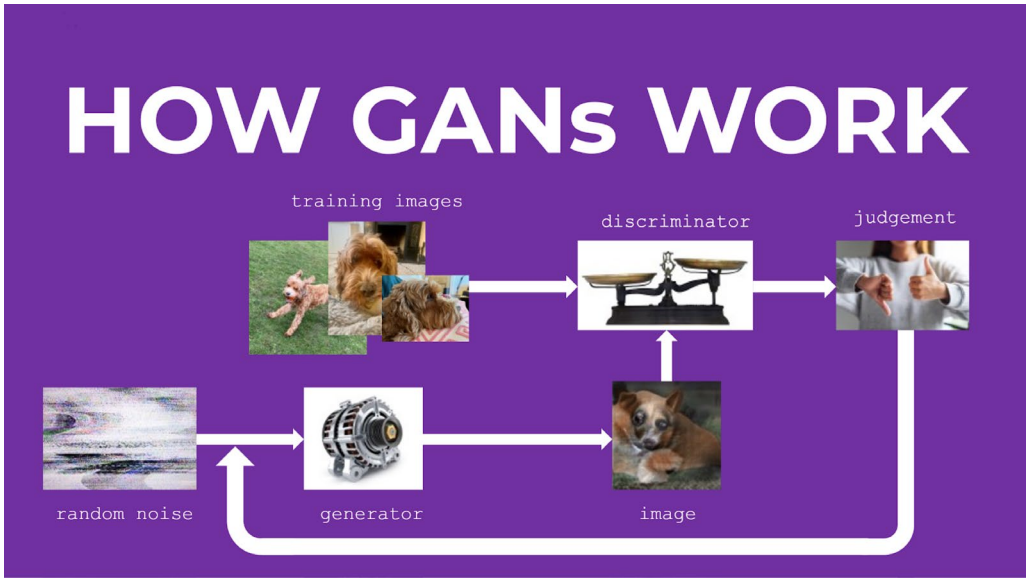
## *Reinforcement learning*

An example of reinforcement learning is found in AI developed by DeepMind, which is owned by Google. DeepMind trained AI to play the classic arcade game Space Invaders, but without teaching AI the rules of the game. Instead, the AI was given a target to score as many points as possible, and the AI learned by trial and error how to achieve this. First it may stay still, and get shot at by the space invaders, but eventually it will try the options available in the game – moving, dodging, then shooting – to achieve the high score.

This reinforcement learning was applied to another, more complex, game called Go. Go is played on 19x19 board, which means there are more possible moves on a Go board then there are atoms in the universe. DeepMind trained the AI Alpha Go on games people had played. Alpha Go played against itself and got better, then played Lee Sedol, the top Go player in the world, and beat him.

## *Generative Adversarial Networks (GANs) – a subset of AI*

The AI that created Edmond de Belamy is an example of a GAN. They work by use of a generator and discriminator.




In this example, the generator is tasked with creating an image of a dog. The discriminator has been trained with real pictures of dogs, and can then provide a judgement. If the image the generator created is not enough like a dog, the discriminator will reject this. The generator will then create another image, and keep doing so, until the discriminator considers it to look sufficiently like a dog.

In the case of the GAN creating Edmond de Belamy, the generator creates lots of versions of the portrait. The discriminator was trained with 15,000 portraits by real artists up to the 20th century, some of which will be in copyright.

## AI creating art: Botto

A collective called Botto have created new works using GANs. Botto used a number of algorithms, including the VQGAN (Vector Quantized Generative Adversarial Network) and CLIP (Contrastive Language–Image Pre-training) to create images. VQGAN fed randomly generated words or sentences from which the algorithm created images. CLIP acted as the discriminator to judge whether the image created matched the text. CLIP then also creates a title of the image. A final algorithm, GPT-3, created a description for the image as abstract poetic wording. The creations from Botto showed the need to have humans involved in the process to both sanitise descriptions and judge the quality of the images being produced. The algorithms produce over 2000 images, and Botto collective selected 350 to use and sell as non-fungible tokens on the blockchain.

GPT-3 can also create natural sounding text. A human gives GPT-3 a sentence to start it off, and the algorithm then creates a narrative. GPT-3 was trained on all of the information on the internet, and so it can also reflect the biases of the internet – misogyny, racism and so on.

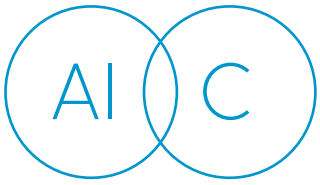
## AI creating design: DALL-E

DALL-E is an algorithm that creates new designs, for example it can produce multiple designs for an 'avocado chair' if that's what was needed. This demonstrates how AI can be used as a tool to start the creative process. A human furniture designer may have 'avocado chair' as a brief, and these fabricated designs could be then developed into a final piece.

A final example using the game Go demonstrates how AI can arguably be creative where there is no human training. DeepMind developed another algorithm called AlphaGo Zero which was trained only using itself. Initially it played the game very badly but steadily improved to beat the world champion at the time. Fascinatingly, AlphaGo Zero played moves humans had not seen before and would not have contemplated playing. That was because it was unencumbered by human thought that follows known routes. Arguably, AI is creating something novel without human training.

# Part Two

# Overview of copyright law and the UK Government's proposals



This copyright overview looked at the aspects of copyright law relevant to the Government consultation on AI and copyright.

Copyright is protection of original literary, dramatic, musical or artistic work. The focus of this session is on artistic work under the definition of section 4 of the Copyright Designs and Patents Act 1988. These are 2D and 3D works, including works of artistic craftsmanship.

'Originality' is a relatively low threshold under UK law. Established case law provides qualities such as showing 'labour, skill and judgement' or for the work to be the 'author's own intellectual creation', as the requirement exists in the EU. Regardless of the specific definition, these qualities for displaying originality are all human qualities. The faculties we have as humans are therefore intrinsic to achieving copyright protection under this part of the law.

## *Economic and personal benefits*

Copyright is an exclusive right that provides to creators both economic and personal benefits. As copyright can be licensed, the creator or rightsholder can receive economic reward, but another part of the copyright package is moral rights that are concerned more with the reputation of the creator (even where copyright has been assigned elsewhere).

Moral rights have to be asserted, either as part of a contract or on the work itself. Moral rights can be waived, which may also be a requirement under a contract. Certain moral rights that may arise through an AI using copyright protected work include the right to object to derogatory treatment, and the right against false attribution. In the latter, we can imagine that AI trained solely on the artistic work of a specific artist could create a work that could be attributed falsely to that artist, potentially as a forgery.

## *Computer generated works (CGWs)*

Copyright law in the UK is somewhat advanced in also providing a right of protection for computer generated works (CGW). This is a shorter term of protection, being 50 years from the date of creation rather than life of the creator plus 70 years after their death, as is the case with copyright. For the purpose of the CGW right, the author is considered to be the person by whom the arrangements necessary for the creation of the work are undertaken. Examples of existing CGWs are found in computer games.

## Exceptions to copyright

To balance the exclusive rights provided by copyright, the law also contains exceptions. Examples include use of works for criticism and review, which promotes important societal values like free speech.

## Text and data mining exception

Text and data mining can currently be performed under an exception, and therefore without the need for permission from the rightsholder, if certain conditions are met: the text and data mining is done for non-commercial research; lawful access to the text and data has been acquired; rightsholders are acknowledged where possible; the network in which the data mining takes place is made secure where possible.

Applying Andrew's examples from his presentation, AI is already carrying out text and data mining on a large scale. For example, Botto was trained on all of the internet. Once the algorithm has used the data for machine learning, the output of the data may be for a commercial purpose (in the case of Botto, artworks being sold to the public).

# Part Three

## Summary of Breakout room discussions

# *Breakout room A: "I'm using AI in my practice or I'm interested in doing so"*

Participants were asked to join this breakout room if they already use AI in their artistic practice or have an intention to do so. They were asked what opportunities AI gives them, what works well and what challenges they face. They explored topics around AI from education and access to AI tools, to the sustainability issues in AI and developing technologies.

Key points and quotes:

## *AI is an opportunity for some artists*

AI and technology presents opportunities to collaborate more with others. The results from working with AI can be surprising. AI and technology can speed up certain processes and enable creativity with unlimited potential.

**"The opportunities for me were huge as an artist. As a photographer, when I discovered AI three months ago, it was a revelation. I was immediately very interested. I started to study VqGAN+CLIP and then discovered Snowpixel. I'm still learning, but I love it. I have already created some NFTs and already sold them on OpenSea."**

**"For me, AI provides the ability to play around with ideas quickly, but it is also worth noting, it does not always work first time."**

## *Artists can adapt to new technologies well*

Artists are good at exploring new technologies and are usually some of the first to adopt changing technologies. AI is not a sudden change to this process, more a reiteration of what has happened before. The market for AI art is flooded, there is an infinite amount of art being produced.

**"I'm working with some colleagues who are AI academic specialists to develop an AI "interlocutor" to generate dialogue for performance. What I want to do is really extend what I've already been doing with instructional works and improvised performance."**

**"As an artist, I want to experiment more to see the potential before I put paint to canvas, AI is just another tool for artists to try out and see what a potential artwork is. But this is new technology, like when we started putting paint in tubes was a revolution for the art world, AI could do the same for artists."**

**"Many traditional artists … consider [AI] cheap art and "not worthy" but I do not agree. The art market is already flooded with AI images, but the quality of the works is very different. There are works and some works are fantastic, whereas some are garbage."**

## *Education and skills are crucial*

AI technology is still at early stages, and this affects how we can work with it in our practice and what we can expect from it. There is a potential loss of skills and knowledge in the arts and education sectors where AI and technology supersedes more traditional artistic creativity and work. Participants also had concerns about young artists and students being locked out of AI and technology learning without educational investment. The government should enable a route to arts education and ensure that technology is part of the arts curriculum.

**"I think it can be pretty difficult for someone to start using AI technology. It took me several hours practicing to understand how to use programmes such as Snowpixel. But because of this, many artists have not yet adopted the models which need to be more user-friendly for wider uptake."**

**"Tools for using technology are more aimed at artists who can't code. This is happening but it's normally more expensive to access."**

**"Nobody taught me how to use AI technology in my practice, I was just curious and started to search and read about the possibilities online."**

## *Copyright and other issues must be addressed*

There needs to be a system to protect artists and their works. It should be transparent when artists' works are required to be used by AI or if copyright is infringed. Some participants felt there was more to explore about how AI sits philosophically within

our understanding of creation and originality, which should be explored. There are environmental issues with AI and other technology that works alongside it like blockchain that should be discussed with creators.

**"Sustainability is an issue. The energy and electricity to create works with AI and technology must come from somewhere. To engage in NFT authentication implicitly gives tacit support to an accelerationist model of unsustainable economic growth which is a political and moral issue."**

**"AI and new technology does not make me nervous. I am a creator by nature… However, I also have concerns that if I don't use AI I could fall behind and be disadvantaged."**

**"One could argue that the algorithm/programme is the artwork not the various images it produces, which makes us users, consumers or an audience rather than 'artists'."**

# *Breakout room B: "My work may be used by AI"*

Participants in this group were asked how they felt about their works being used for AI purposes, such as machine learning. They were asked if they would want AI developers to seek their permission to use their work or if they were happy for this to be done under an exception.

Key points and quotes:

## *Artists' permission must be sought for AI use*

Participants felt strongly that they should have a say in whether or not their works are used for or by AI. Some participants expressed that AI was no different to other industries, and that if other industries license works, so should AI.

**"If I am the creator of a work and I have the right to get recognised for that and have the right to get remunerated. What makes the AI sector any different that they should be given different sets of permission?... I don't object particularly to AI using my work, but I don't see the difference over whether the use is for a print, poster, TV advert or for AI and machine learning."**

## *Fostering AI in the UK should not come at the expense of creators*

Participants questioned where the benefit to individual creators is if AI developers are allowed to use artistic works without permission or payment. One participant felt that the government's aim to bring more investment into AI in the UK was being done rapidly and without consideration to the rights of creators.

**"I am apprehensive of the intention of AI and... I am not reassured by what I am seeing in the crypto-space and with data collection at the moment... What this sounds like is a conflict of interest over IP and the use of it for this investment venture."**

## *AI should be considered in tandem with other technological development, which can be an ecosystem where infringements are rife*

Participants considered technological developments as a whole to create a network of concerns. Blockchain, non-fungible tokens and rapid online infringement of copyright, together with increasing development of AI, created a feeling of a 'wild west' that disadvantages creators.

**"It's a wild west at the moment with blockchain technology transforming data and rights."**

**"It's already difficult to enforce rights unless you're aware of the infringement happening in the first place."**

**"I've already been in a situation of coming across an image incorrectly attributed to the artist I represent and I've had to highlight this to DACS, but to track down those sorts of discrepancies is a full time job of trawling through the internet."**

## *Trust and transparency is crucial*

The theme of trust arose repeatedly. Participants said that if their works were used for machine learning they still may not know what the final output of the AI will be. They compared machine learning for AI with text and data mining for analogue research, and they did not feel this was the same.

**"It's just the fear that AI can sample all this stuff at a great speed. It's the speed that frightens people."**

**"I would not consider machine learning the same as [research] for education."**

**"The output and the use of the output is very different to machine learning. If we are not being asked about what the output is, then why not?"**

## *Licensing can create trust and transparency*

Participants felt that licensing is a way of creating trust, and giving the creator the autonomy to say no to a certain use. It is also a

way for artists to engage in the process and be appropriately remunerated.

**"There should not be a loss of the opportunity to be recompensed. Nor should it be, 'you will be recompensed, therefore you lose the control to have your works used'."**

**"[AI licensing] could create an opportunity for a human interaction by the artist or archivist to either give permission or not. It would demand a certain amount of organisation. DACS could be the trusted body."**

**"I wouldn't be happy for AI to use my work. I would want any AI to put a request through DACS, if at all."**

## *Consulting on copyright is too rushed as AI is still in development*

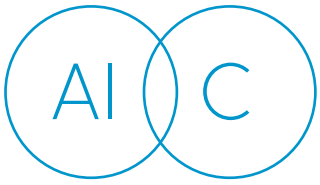
The group's participants were concerned by the rapid development of technologies and felt the knee-jerk reaction was to erode the rights of individuals in favour of big tech. Participants felt the consultation by government is rushed, as they had little insight into how AI is operating and no evidence of why change to copyright is needed. They sought reassurance and trust-building from government, and said more conversations and participation from creators is needed.

**"The main issue is that this is happening too fast to grasp the challenges, and there is no clear intention on what the ultimate aim of AI learning is."**

**"There is a lack of examples of how it's going to work."**

# Part Four

## Artificial Intelligence and Ethics with Andrew Burgess



The final part of the session looked at the main risks and challenges with AI.

## Black box phenomenon

The black box phenomenon describes the situation where algorithms doing the learning using data are opaque. As an example, applying for a loan that uses an algorithm to determine your suitability is not transparent. If you are rejected for the loan the bank and its employees will be unable to explain why, relying on the algorithm's outputs. This is a challenge in regulated industries, and the more complex the algorithm, the more opaque it is.

## Bias

An example of data bias is a specific database called 'Labeled Faces in the Wild', that uses people's faces to train algorithms. This database contains 13,000 faces and is used by commercial companies for training algorithms. However, the database itself is not representative of society. Of the faces in the database, 83% of people are white and 78% are of men. Therefore the algorithm created from this data is less accurate at distinguishing a non-white female.

## Naivety

AI is sometimes given too much credit for what it can do, and can be anthropomorphised by those using it. This can be dangerous because the AI is effectively naive – for example when it recognises a picture of a dog, it is only matching patterns of pixels and does not fundamentally understand what a dog is (i.e. living animal, owned as pets, etc). If the AI had been trained on pictures of dogs that had been labelled 'elephant' then the AI would have labelled any new pictures of dogs as elephants.

## Over-promising

Ideas to use facial recognition in public places is an example of where AI is considered more sophisticated than it is. AI can be used well in closed environments, but the use of AI for policing creates serious problems as it is not up to complex tasks expected.

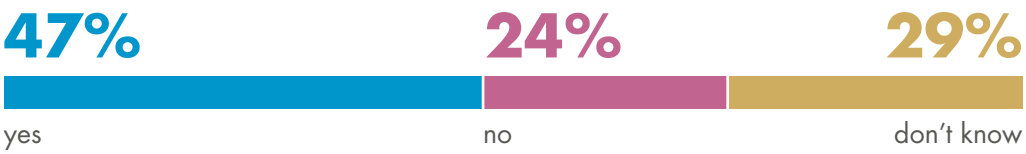
## Deception

AI can be used to deceive people by creating images of people that look very realistic. This deception can be malicious or done for fun. Deep Fakes are images or films that are created by an AI that look almost identical to real people and they can be used to fool an audience into thinking that the real person is doing or saying something that they have never done before. An uncanny example is @deeptomcruise where an AI assimilates Tom Cruise's face onto that of an actor, so the viewer thinks they are watching Tom Cruise but in fact they are not.

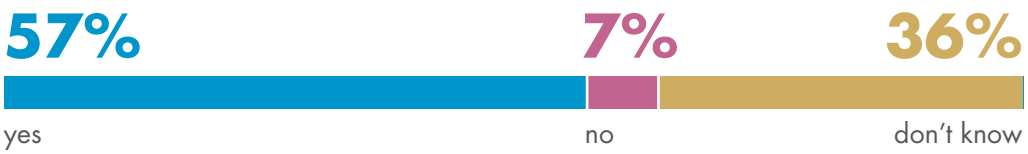
# Part Five

## Poll results

**"If a work is generated exclusively by artificial intelligence, without any human interaction, should it be eligible for copyright protection?"**




**"Do you use AI in your work or are you interested in doing so?"**



**"The Government has set out 5 options in respect of the current copyright exceptions. Which one is your preference?"**

**7%**

Option 0: Make no legal change

**66%**

Option 1: Improve licensing environment for the purposes of TDM

**0%**

Option 2: Extend the existing TDM exception to cover commercial research and databases

**13%**

Option 3: Adopt a TDM exception for any use, with a rights holder opt-out

**0%**

Option 4: Adopt a TDM exception for any use, which does not allow rights holders to opt out

**7%**

Not Sure

**"Should the government consider ethical issues relevant to AI when making changes to the law?"**

**100%** **0%**

Yes No

DACS®

Established by artists for artists,
DACS is a not-for-profit visual artists'
rights management organisation.

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