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California State Assembly
ARTS, ENTERTAINMENT, SPORTS, AND TOURISM AND PRIVACY AND CONSUMER PROTECTION

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JOINT INFORMATIONAL HEARING
ASSEMBLY COMMITTEE ON ARTS, ENTERTAINMENT, SPORTS AND TOURISM AND THE
ASSEMBLY COMMITTEE ON PRIVACY AND CONSUMER PROTECTION

USAGE OF ARTIFICIAL INTELLIGENCE (A.I.) IN THE ENTERTAINMENT INDUSTRY
May 28, 2024
10 a.m. to 1 p.m.
1021 O Street, Room 1100

BACKGROUND

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I.   INTRODUCTION

The intersection of art and technology traces back to the dawn of human civilization, beginning with the earliest humans who used pigments and basic tools to create paintings in caves, such as those found in Lascaux, which reflect both artistic and technological innovation of their time.

As civilizations advanced, so did technology, influencing art along the way; for example, the development of metal tools in the Bronze Age allowed for more intricate sculptures and jewelry. The Renaissance era marked a significant turning point with the invention of the printing press by Johannes Gutenberg, which revolutionized the production and dissemination of artworks and literature, leading to a broader cultural impact.

In the 19th and 20th centuries, technological advancements such as photography and later digital technology transformed artistic creation, distribution, and perception. Photography offered a new, realist approach to capturing life, while the digital age introduced tools like Photoshop, 3D modeling, and eventually, the Internet, revolutionizing how art is created, shared, and sold. Artists began employing technology to create digital art, virtual reality experiences, and interactive installations, pushing the boundaries of traditional definitions of art.

The passage above comes not from a scholarly tome but from ChatGPT, a groundbreaking artificial intelligence (AI)-powered chatbot that produces naturalistic language in response to prompts – in this case, a query to briefly summarize the history of art and technology. Through further prompting, the passage can be translated into the style of fantasy author J.R.R. Tolkien:

In the ancient days when the world was still young and the mysteries of creation were but newly explored, the first forgers of image and craft employed earthen hues and primitive instruments to capture the echoes of their thought upon cave walls, much like the famed halls of Lascaux. These

early artworks stood as a testament to both the artistry and the ingenuity of mankind, who, even in that nascent age, sought to meld the beauty of form with the function of tool.

As the wheel of time turned and brought forth the Ages of Bronze and Iron, craftsmen found in their hands the means to shape more intricate works. They wrought sculptures and adornments with metals drawn from the very bones of the earth, each piece a deeper invocation of their growing mastery over the elemental world. It was upon the Renaissance, a golden age of reawakening, that the craft of art was irrevocably changed by the machinations of ingenious minds. The printing press, wrought by Master Gutenberg, broke the chains that bound knowledge and beauty to the few. It spread like a swift wind across the lands, carrying with it the seeds of enlightenment, allowing both letter and image to flourish and multiply as never before.

With the dawning of the modern age, new sorceries of light and shadow were discovered— photography captured reality with a starkness that the brush could never quite touch, and digital realms were conjured, transforming the ether into a canvas. This digital age heralded tools of creation such as Photoshop and the weaving of three-dimensional tapestries, further dissolving the boundaries between the real and the imagined.

ChatGPT is a generative AI (GenAI) system that works predominantly with text, and equivalent systems exist for the creation of images, videos, and music. In the hands of an artist or author, GenAI can be a fantastic tool. Special effects, image manipulation, and vocal mimicry have existed for nearly as long as photography and recording equipment, but they have historically required great effort and talent. In the past few years the rapid development of GenAI has drastically reduced those barriers to entry, allowing a vast quantity of convincing, inauthentic content to be generated in an instant.

The creation of text, imagery, video, and audio by GenAI has the potential to change the world by automating repetitive tasks and fostering creativity. However, sufficiently advanced GenAI could also outright replace the creatives that contribute to their training data. This hearing will explore how AI has been used in the entertainment industry, drawing on the perspectives of content creators, performers, and artist to understand its impacts on music, film and TV, and the visual arts.

II.   A BRIEF PRIMER ON ARTIFICIAL INTELLIGENCE

AI and GenAI. "Artificial intelligence" refers to the mimicking of human intelligence by artificial systems, such as computers. AB 2885 (Bauer-Kahan, 2024), currently pending in the Senate, defines the term thus:

> "Artificial intelligence" means an engineered or machine-based system that varies in its level of autonomy and that can, for explicit or implicit objectives, infer from the input it receives how to generate outputs that can influence physical or virtual environments.[1]

AI uses algorithms – sets of rules – to transform inputs into outputs. Inputs and outputs can be anything a computer can process: numbers, text, audio, video, or movement. AI is not fundamentally different from other computer functions; unlike other computer functions, however, AI is able to accomplish tasks that are normally performed by humans.

AI that are trained on small, specific datasets in order to make recommendations and predictions are sometimes referred to as "predictive AI." This differentiates them from GenAI, which are trained on massive datasets in order to produce detailed text, images, audio, and video. When Netflix suggests content to a viewer, its recommendation is produced by predictive AI that is trained on the viewing habits of Netflix users.[2] When ChatGPT generates text in clear, concise paragraphs, it uses GenAI that is trained on the

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[1] Assem. Bill No. 2885 (2023-2024 Reg. Sess.) § 3.
[2] Netflix, "How Netflix's Recommendations System Works," help.netflix.com/en/node/100639.

written contents of the internet.[3] As demonstrated in Section I, GenAI are able to quickly create complex outputs based on user inputs. In order to understand the strengths and limitations of these systems, it is worth briefly exploring how various AI tools work.

How does AI work? Most modern AI tools are created through a process known as "machine learning." During machine learning, an AI is exposed to data and allowed to automatically explore its structure.[4] The process of exposing a naïve AI to data is known as "training." The algorithm that an AI develops during training is known as its "model." Training is the secret sauce of machine learning. At its core, training is an optimization problem wherein a model attempts to identify specific parameters – "weights" – that minimize the difference between predicted outcomes and actual outcomes. How an input is transformed into an output depends on the specific algorithm that is developed by a model. Once trained, AI can be used to process new, never-before-seen data. A well-known phrase in computer science is "garbage in, garbage out" – an AI's performance is directly impacted by the quality, quantity, and relevance of the data used to train it.[5]

Foundation models. Foundation models are AI that have been pre-trained on extensive datasets covering a wide range of knowledge and skills. Once trained, these models serve as a "foundation" that can be fine-tuned for specific tasks. It is useful to think of foundation models from a nature vs. nurture perspective: the "nature" of these models is baked in during the original training process, while their ultimate purpose and behavior can be "nurtured" through further training.

Image generation. Image generators are foundation models capable of creating or editing images based on patterns and features learned from large datasets of existing images. Three common architectures employed by these systems are generative adversarial networks (GANs), variational autoencoders (VAEs), and diffusion models.[6,7,8] In a GAN, two models work together to generate detailed images by competing to produce and discriminate artificial images. VAEs work by first compressing images, then learning to decode the original images from the resulting low-dimensional representations. Diffusion models create meaningful images from random noise: first, training images are made progressively noisier, until only noise remains. Next, this series of increasingly noisy images is reversed and fed into a model as training data. The diffusion model learns to gradually turn noise into coherent images – such systems can be used to generate images from scratch, edit existing images, or restore images whose quality has degraded due to time or damage.

Image training datasets play a crucial role in the development and training of computer vision and image generation models. Popular datasets include:

- ImageNet: a dataset containing over 14 million images annotated with over 20,000 categories.
- COCO: a dataset containing over 330,000 images, including more than 200,000 labeled images, and over 1.5 million object instances across 80 object categories.
- MNIST: a dataset of handwritten digits, containing 60,000 training images and 10,000 testing images. Each image is a 28x28 grayscale pixel.

Many image generation AI tools are available for public use, including:

- DALL-E 2 (OpenAI)
- Midjourney
- Stable Diffusion (Stability AI)

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[3] OpenAI, "How ChatGPT and Our Language Models Are Developed," help.openai.com/en/articles/7842364-how-chatgpt-and-our-language-models-are-developed.
[4] IBM, "What is machine learning?," www.ibm.com/topics/machine-learning.
[5] Rohit Sehgal, "AI Needs Data More Than Data Needs AI," (Oct. 5, 2023) *Forbes*, https://www.forbes.com/sites/forbestechcouncil/2023/10/05/ai-needs-data-more-than-data-needs-ai/.
[6] Amazon Web Services, "What is a GAN?," aws.amazon.com/what-is/gan/.
[7] Joseph Rocca, "Understanding Variational Autoencoders (VAEs)" (Sep. 23, 2019) *Towards Data Science,* https://towardsdatascience.com/understanding-variational-autoencoders-vaes-f70510919f73.
[8] Amazon Web Services, "What is Stable Diffusion?," https://aws.amazon.com/what-is/stable-diffusion/.

Video generation. The process of generating video through the use of AI is very similar to the process of generating images, with an added layer of complexity. Videos are series of images that are highly correlated across time: within a continuous shot, any given frame of a video is very similar to the frames that precede and follow it. In order to generate coherent video, AI must be able to retain relevant correlations across frames while also modifying each frame appropriately.

Video generation models require a tremendous amount of high-quality training data, and how these data are sourced and prepared can significantly affect the performance, versatility, and realism of generated video. Many video generation models are trained on publicly available video datasets collected and maintained by academic institutions or large companies. Examples include:

- YouTube-8M: A dataset consisting of millions of YouTube video IDs and associated labels.
- Kinetics (Google DeepMind): A dataset containing hundreds of thousands of video clips that are annotated for human action recognition.
- UCF101: A dataset of realistic action videos, collected from YouTube, consisting of 101 different action categories.

The field of AI-generated video is evolving rapidly, with research aimed at improving the efficiency, quality, and applicability of generated videos. OpenAI recently released Sora, a video generation diffusion model capable of generating video from text, generating video from still images, and modifying existing video. Sora represents videos as a series of "spatio-temporal patches," and as a result, OpenAI describes Sora as a "world simulator."[9]

Other common AI video generation and editing AI tools include:

- Veo (Google)
- Runway ML
- Cinelytic

Audio generation. As with image generation, audio generation often involves AI models that utilize GAN, VAE, or diffusion architectures. However, unlike image data, sound is inherently temporal. Humans perceive sound as a continuous wave of air pressure that varies over time in intensity and frequency. Microphones detect these pressure waves and convert them into electrical signals, while speakers convert electrical signals back into pressure waves.

Audio can be decomposed into fundamental pieces called "spectral components." These components represent the frequency, amplitude, and phase of different parts of the sound wave; together, they can be used to train AI models to recognize and generate audio. Once trained, an AI tool can modify existing audio or generate novel audio by learning the patterns and structures in the training data. This enables applications such as speech synthesis, music generation, audio enhancement, and audio restoration.[10]

As with images and video, audio training datasets play a crucial role in developing and training AI models. Examples include:

- LibriSpeech: a large corpus of approximately 1,000 hours of read English speech, derived from audiobooks.
- VoxCeleb: speech recordings from over 7000 celebrities extracted from YouTube videos.
- UrbanSound8K: contains more than 8000 labeled sound excerpts from urban environments.

Common AI audio generation and editing tools include:

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[9] OpenAI, "Video generation models as world simulators," https://openai.com/index/video-generation-models-as-world-simulators/.

[10] Jon Porter, "YouTube previews AI tool that clones famous singers — with their permission" (Nov. 16, 2023) *The Verge*, https://www.theverge.com/2023/11/16/23963570/youtube-generative-ai-dream-track-music-tools-voice-clone.

- Stable Audio 2.0 (stability.ai)
- Adobe Audition
- Lyria (Google DeepMind)

Recommendation systems. In addition to GenAI, predictive AI is frequently used to determine which content should be displayed to users. When an online media platform such as Netflix or Spotify first engages with a user, it knows next to nothing about that user's entertainment preferences. Over time, as the user continues to engage with content, predictive AI can analyze their habits and anticipate which shows or songs they are most likely to engage with in the future. By placing relevant content front and center, platforms are able to increase viewer engagement.

AI-powered recommendation systems benefit users by allowing them to consistently engage with enjoyable content. However, content recommendations are a zero-sum game: for every show Netflix displays to a user, there are many other shows that the user is not exposed to. Recommendation systems can push users into "algorithmic rabbit holes" – content bubbles wherein a user is only ever shown a limited range of media, potentially reinforcing their interests and beliefs at the expense of a more holistic experience.

III.   USES AND IMPACTS OF AI IN THE ENTERTAINMENT INDUSTRY

The entertainment industry has always grown in tandem with technology. Over the course of the 20th century, silent film gave way to sound, black and white gave way to color, and analog gave way to high-definition digital cameras. Recent advances in technology have caused huge shifts in how movies and television shows are created, from filming on location using make-up and practical special effects, to computer-generated imagery that makes use of green or blue screens on sound stages. The consumption of entertainment media has evolved as well; music, for example, has transitioned from vinyl records, to cassette tapes, to compact discs, to online streaming.

The past several years have seen the start of a new era, with technologies that seem more powerful – and potentially more controversial – than anything that has come before. AI is already being used throughout the entertainment industry to enhance creativity and improve efficiency during production. Viewer and listener data is being collected and fed into systems that provide fast statistical analyses of audience engagement and reactions. Algorithms can track behaviors and learn preferences in order to advertise new content and personalize suggestions.[11] On the other hand, while AI can augment creativity and improve operational efficiency, it also threatens to displace artists and potentially homogenize content. Algorithmic decision-making frequently favors formulaic, audience-pleasing content over innovative creative endeavors. Balancing the benefits of AI with the preservation of creative diversity and the livelihoods of artists is a pivotal challenge for the entertainment industry.

AI in film and television production. AI has numerous applications in film and TV production. AI tools like ScriptBook can be used to suggest plot changes, alter how a character is developed, and suggest alternate endings based on anticipated audience reactions.[12] Studios are able to forecast how well a movie will do at the box office by analyzing data collected on an actor or actress's appeal to audiences. Machine learning models can be used to simulate makeup, hairdos, costumes, and even the actors themselves. Using AI to generate background elements and repetitive animation sequences, as well as to modify post-production image and sound quality, can vastly speed up production. Directors and photographers are able to integrate AI tools into the filming process to provide feedback on complex scenes and editing in real-time.

Concerns regarding the use of AI in the entertainment industry played a major role in the 2023 strike by writers and performers that brought Hollywood to a standstill.[13] Screenwriters were concerned over the

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[11] Charlotte Wesker, "Influence of Algorithms on Entertainment Consumption" (April 15, 2024) *Medium*, https://channelguide.medium.com/influence-of-algorithms-on-entertainment-consumption-3decddc8b78f

[12] ScriptBook Website, https://www.scriptbook.io/#!/.

[13] Alex Winter, "The SAG Deal Sends a Clear Message About AI and Workers" (November 13, 2023) *Wired*, https://www.wired.com/story/hollywood-actors-sag-artificial-intelligence-contract/.

increasing use of AI and its implications for intellectual property, creative control, and compensation. Actors were concerned over the use of digital replicas: computer-generated avatars of an individual's likeness—including their face, body, voice, movement; indeed, their very identity—that can appear authentic and be manipulated to create entirely new "performances" even if the actor had no active role in the making of the performance. For example, James Dean, despite passing away over 60 years ago, was cast in a 2019 movie using a digital replica.[14] The show *Ted Lasso* interspersed replicas of actual actors into digitally-generated crowds that packed soccer stadiums in the show.[15]

Following months of negotiations with the Alliance of Motion Picture and Television Producers, the Writers Guild of America "secured some concessions from streamers and studios on AI, including that AI-generated written material cannot be considered literary material written by a human, and that companies cannot require writers to use AI software such as ChatGPT when writing."[16] SAG-AFTRA ratified an agreement that, among other things, governs various uses of digital replication and generally requires that the performer's "clear and conspicuous" consent to use the digital replica be contained in a separate writing, along with a "reasonably specific description of the intended use."[17]

Issues concerning replications of celebrity likeness persist, however. Earlier this week, OpenAI released a version of ChatGPT that included a voice assistant – "Sky" – whose voice was notably similar to the distinctive voice of actress Scarlett Johansson. In a subsequent statement, Johansson revealed that she had turned down multiple overtures from OpenAI's CEO, Sam Altman, to license her voice for that purpose:

> Last September, I received an offer from Sam Altman, who wanted to hire me to voice the current ChatGPT 4.0 system. He told me that he felt that by my voicing the system, I could bridge the gap between tech companies and creatives and help consumers to feel comfortable with the seismic shift concerning humans and A.I. He said he felt that my voice would be comforting to people. After much consideration and for personal reasons, I declined the offer. Nine months later, my friends, family and the general public all noted how much the newest system named 'Sky' sounded like me.
>
> When I heard the released demo, I was shocked, angered and in disbelief that Mr. Altman would pursue a voice that sounded so eerily similar to mine that my closest friends and news outlets could not tell the difference. Mr. Altman even insinuated that the similarity was intentional, tweeting a single word, 'her' — a reference to the film in which I voiced a chat system, Samantha, who forms an intimate relationship with a human.
>
> Two days before the ChatGPT 4.0 demo was released, Mr. Altman contacted my agent, asking me to reconsider. Before we could connect, the system was out there. As a result of their actions, I was forced to hire legal counsel, who wrote two letters to Mr. Altman and OpenAI, setting out what they had done and asking them to detail the exact process by which they created the 'Sky' voice. Consequently, OpenAI reluctantly agreed to take down the 'Sky' voice.
>
> In a time when we are all grappling with deepfakes and the protection of our own likeness, our own work, our own identities, I believe these are questions that deserve absolute clarity. I look forward to resolution in the form of transparency and the passage of appropriate legislation to help ensure that individual rights are protected.[18]

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[14] "James Dean set to star in new film through digital resurrection, horrifying fans" (Nov. 7, 2019) *NBC News*, https://www.nbcnews.com/pop-culture/celebrity/james-dean-set-star-new-film-through-digital-resurrection-horrifying-n1078051.

[15] Marc Tracy, "Digital Replicas, a Fear of Striking Actors, Already Fill Screens" (Aug. 4, 2023) *New York Times*, https://www.nytimes.com/2023/08/04/arts/television/actors-strike-digital-replicas.html.

[16] Annabelle Timsit, "All the details of the WGA contract that ended the writers' strike" (Sept. 27, 2023) *The Washington Post*, https://www.washingtonpost.com/style/2023/09/27/wga-contract-details-writers-strike-deal/.

[17] SAG-AFRTRA, "TV/Theatrical Contracts 2023," https://www.sagaftra.org/files/sa_documents/TV-Theatrical_23_Summary_Agreement_Final.pdf.

[18] "Scarlett Johansson's Statement About Her Interactions with Sam Altman" (May 20, 2024) *New York Times*, https://www.nytimes.com/2024/05/20/technology/scarlett-johansson-openai-statement.html.

In response, Mr. Altman stated: "The voice of Sky is not Scarlett Johansson's, and it was never intended to resemble hers. We cast the voice actor behind Sky's voice before any outreach to Ms. Johansson. Out of respect for Ms. Johansson, we have paused using Sky's voice in our products. We are sorry to Ms. Johansson that we didn't communicate better."[19]

AI's disruptive potential is not limited to individual performers and writers. OpenAI's recent release of Sora, the text-to-video AI model discussed previously that can generate 60-second-long photorealistic HD video from written descriptions, prompted Tyler Perry, a filmmaker who owns a movie studio in Atlanta, Georgia, to halt construction of a major studio expansion:

> In an interview with The Hollywood Reporter published Thursday, filmmaker Tyler Perry spoke about his concerns related to the impact of AI video synthesis on entertainment industry jobs. In particular, he revealed that he has suspended a planned $800 million expansion of his production studio after seeing what OpenAI's recently announced AI video generator Sora can do.

> "I have been watching AI very closely," Perry said in the interview. "I was in the middle of, and have been planning for the last four years... an $800 million expansion at the studio, which would've increased the backlot a tremendous size—we were adding 12 more soundstages. All of that is currently and indefinitely on hold because of Sora and what I'm seeing. I had gotten word over the last year or so that this was coming, but I had no idea until I saw recently the demonstrations of what it's able to do. It's shocking to me."[20]

AI in music production. AI is able to emulate traditional instruments, help design audio effects, and create new and unique sounds. This gives sound technicians more flexibility in terms of control and experimentation, allowing them to adjust balance, volume, and clarity for optimal playback on various systems.

Some in the music industry have embraced some AI technology as a useful creative tool. After several decades of dormancy, the Beatles recently use a GenAI tool called "Mal" (Machine Audio Learning) to remaster an old demo track recorded by John Lennon. Separating Lennon's voice from background noise in the recording allowed Paul McCartney and Ringo Starr to complete "the last Beatles song":

> Following a lot of hype—and a quarter century of work—"Now and Then," presumably the last song to feature all four original Beatles, is here. The track dropped yesterday and the music video, directed by Peter Jackson, hit YouTube today. Sweet and haunting, it's full of piano and strings, and it wouldn't have been possible without the machine learning technology Jackson used on the docuseries Get Back.

> [. . .]

> In the 1990s, when the three remaining Beatles—McCartney, Ringo Starr, and George Harrison—were working on recordings for their Anthology records, they tried to salvage "Now and Then" from an old cassette. At the time, Lennon's vocals were too awash in the sounds of the piano he was playing, and the technology to extract them didn't exist. "'Now and Then' just kind of languished," McCartney says in a new short documentary about the song.

> [. . .]

> Back in June, when McCartney told BBC Radio 4 that the song had been saved with the help of AI, fans went wild. The move wasn't as complicated or sketchy as someone using machine learning to

[19] "How the voices for ChatGPT were chosen" (May 19, 2024), OpenAI website, https://openai.com/index/how-the-voices-for-chatgpt-were-chosen/.
[20] Benj Edwards, "Tyler Perry puts $800 million studio expansion on hold because of OpenAI's Sora" (Feb. 23, 2024) *arstechnica,* https://arstechnica.com/information-technology/2024/02/i-just-dont-see-how-we-survive-tyler-perry-issues-hollywood-warning-over-ai-video-tech/.

make a fake Drake song, and it proved to be a warm fuzzy moment for tech proponents and Beatles acolytes alike, even if some still looked askance at the made possible by AI of it all. (Guilty.) As Lennon's son Sean Lennon says in the mini-doc, "My dad would've loved that because he was never shy to experiment with recording technology."[21]

Additionally, Randy Travis, who had not released a song in a decade, recently composed a new song using AI trained on his old songs.[22] After he was hospitalized and diagnosed with viral cardiomyopathy (a disease that targets the heart) in July 2013, Travis suffered a stroke and developed aphasia, a brain disorder that has limited his ability to speak. However, as AI-generated audio has become more accessible, music has also been released using the unique voices and styles of musicians without first obtaining their consent:

> Earlier this year, Bad Bunny emphatically rejected rumors that he was about to release a new song with Justin Bieber. "That's fake," he told TIME in an interview for a cover story on his meteoric rise. "You never know what I'm going to do." But last month, a song featuring what sounded like his and Bieber's voices started circulating on TikTok, garnering millions of likes. Bad Bunny hadn't lied in the interview, though: the song was created with AI. An artist named FlowGPT had used AI technology to recreate the voices of Bad Bunny, Bieber and Daddy Yankee in a reggaeton anthem. Bad Bunny himself hated it, calling it a "shit of a song" in Spanish and discouraging his fans from listening, and the clip was removed from TikTok. But many fans of all three megastars loved it all the same.[23]

Similarly, a recent song created with AI to replicate the voices of performers Drake and The Weeknd was widely shared on social media.[24] Before being taken down by Universal Music Group (UMG), "Heart on My Sleeve" was viewed millions of times on TikTok, and various streaming platforms like Apple Music, Spotify, and YouTube. The song, released in April 2023, was eventually removed by UMG through copyright due to the inclusion of an unauthorized sample of a producer tag. Although "Heart on My Sleeve" was a clear imitation of the style and voices of the artists, the lyrics and music were not copying any of their existing songs.

IV. INTELLECTUAL PROPERTY AND LIKENESS RIGHTS

GenAI that is trained on the creative expressions of writers, singers, actors, and other performers raises novel legal questions surrounding intellectual property and control over the likenesses of individual performers. This section briefly examines two key related issues: copyright and the right of publicity.

Copyright. The biggest names in AI – OpenAI, Meta, and Google – understand AI's critical need for data better than most. According to a recent *New York Times* examination, the race to lead in the AI space has become a desperate hunt for digital data. To obtain that data, tech companies have scraped massive quantities of media to extract expressive information for training datasets. Scaling up the size of training datasets has enabled GenAI models to internalize and map human language, as well as to achieve a level of adaptability that enables these models to produce naturalistic outputs. According to the article, these companies amassed these datasets knowing they were riding roughshod over intellectual property rights:

> At Meta, which owns Facebook and Instagram, managers, lawyers and engineers last year discussed buying the publishing house Simon & Schuster to procure long works, according to recordings of internal meetings obtained by The Times. They also conferred on gathering copyrighted data from across

[21] Angela Watercutter, "'Now and Then,' the Beatles' Last Song, Is Here, Thanks to Peter Jackson's AI," (Nov. 3, 2023) *Wired*, https://www.wired.com/story/the-beatles-now-and-then-last-song-artificial-intelligence-peter-jackson/.

[22] Christi Carras, "Randy Travis releases first song post-stroke with the help of AI" (May 7, 2024) *Los Angeles Times*, https://www.latimes.com/entertainment-arts/business/story/2024-05-07/randy-travis-stroke-song-ai-where-that-came-from.

[23] Andrew Chow, "AI's Influence on Music Is Raising Some Difficult Questions," (Dec. 4, 2023), *Time*, https://time.com/6340294/ai-transform-music-2023/.

[24] Savage, "AI-generated Drake and The Weeknd song goes viral" (Apr. 17, 2023) *BBC*, https://www.bbc.com/news/entertainment-arts-65298834.

the internet, even if that meant facing lawsuits. Negotiating licenses with publishers, artists, musicians and the news industry would take too long, they said.

Like OpenAI, Google transcribed YouTube videos to harvest text for its AI models, five people with knowledge of the company's practices said. That potentially violated the copyrights to the videos, which belong to their creators.[25]

This has led to a rash of lawsuits from content creators – including media outlets and authors such as Sarah Silverman, George R.R. Martin, and John Grisham – who allege, among other things, that using their works to train large language models that can regurgitate the content unaltered constitutes copyright infringement.[26] Key to many of these lawsuits is whether this practice constitutes a "fair use," a defense to copyright infringement claims. A fair-use analysis considers four factors: (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.[27]

As part of this analysis, courts assess whether the new use is "transformative" because it "communicates something new and different from the original or expands its utility, thus serving copyright's overall objective of contributing to public knowledge."[28] Such uses include those that provide information about the original "or expand[] its utility."[29] Relevant utility-expanding uses have included scanning books to create a full-text searchable database and public search function;[30] copying works into a database used to detect plagiarism;[31] and displaying "thumbnail" reproductions of works to provide links to websites containing the originals.[32] Taken together, these cases suggest that certain uses of GenAI that provide information about the original works, rather than simply replicate their expressive content, may be both transformative and fair. However, these novel issues will be resolved on a case-by-case basis on the particular facts before the courts.

Right of publicity. The use of a person's name or image without consent for commercial purposes has long been recognized as a common-law invasion of privacy. In 1974, California Civil Code section 3344 codified the right to publicity for living personalities, imposing liability on any person who knowingly uses another's name, voice, signature, photograph, or likeness, in any manner, on or in products, merchandise, or goods, or for purposes of advertising or selling, or soliciting purchases of, products, merchandise, goods or services, without prior consent.[33]

In 1977, the United States Supreme Court framed the right in terms of economic rather than privacy interests:

The State's interest in permitting a "right of publicity" is in protecting the proprietary interest of the individual in his act in part to encourage such entertainment. The State's interest is closely analogous to

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[25] Cade Metz, Cecilia Kang, Sheera Frenkel, Stuart A. Thompson and Nico Grant, "How Tech Giants Cut Corners to Harvest Data for AI," (Apr. 6, 2024) *New York Times*, https://www.nytimes.com/2024/04/06/technology/tech-giants-harvest-data-artificial-intelligence.html.

[26] Copyright law protects "original works of authorship fixed in any tangible medium of expression . . . ." (17 U.S.C. § 102.) Six exclusive rights flow from copyright ownership. These are the rights to: (1) reproduce and make copies of an original work; (2) prepare derivative works based on the original work; (3) distribute copies to the public by sale or another form of transfer, such as rental or lending; (4) publicly perform the work; (5) publicly display the work; and (6) perform sound recordings publicly through digital audio transmission. (17 U.S.C. § 106.)

[27] 17 U.S.C § 107(1)-(4).

[28] *Authors Guild v. Google, Inc.* (2d Cir. 2015) 804 F.3d 202, 214.

[29] *Ibid.*

[30] *Authors Guild, Inc. v. HathiTrust* (2d Cir. 2014) 755 F.3d 87, 97-98.

[31] *A.V. ex rel. Vanderhye v. iParadigms, LLC* (4th Cir. 2009) 562 F.3d 630, 639.

[32] *Perfect 10, Inc. v. Amazon.com, Inc.* (9th Cir. 2007) 508 F.3d 1146, 1165; *Kelly v. Arriba Soft Corp.* (9th Cir. 2003) 336 F.3d 811, 818-19.

[33] Ch. 1595, Stats. 1971.

the goals of patent and copyright law, focusing on the right of the individual to reap the reward of his endeavors and having little to do with protecting feelings or reputation? "The rationale for [protecting the right of publicity] is the straight-forward one of preventing unjust enrichment by the theft of good will. No social purpose is served by having the defendant get free some aspect of the plaintiff that would have market value and for which he would normally pay. [Citation.]"[34]

After two California Supreme Court cases in 1979 found that California's statutory right to publicity was not transferable upon death,[35] the Legislature extended the right to the heirs of deceased "personalities"—that is, individuals' whose likeness had commercial value at the time of their death.[36] Under current law, Civil Code section 3344.1 establishes a cause of action for damages on behalf of injured rightsholders for the unauthorized commercial use of a deceased personality's name or likeness within 70 years of the personality's death.

Unauthorized digital necromancy is becoming increasingly common. As mentioned above, George Carlin's estate recently sued a media company that used artificial intelligence to create an hour-long comedy special entitled "George Carlin: I'm Glad I'm Dead." "The faked special [was] widely condemned by Carlin's fans and family members, who believe it to be a mockery of the late comedian's work."[37] His estate claimed, among other things, a violation of his right of publicity.[38] The parties settled, with the media company agreeing to remove the comedy routine from the internet and cease using Carlin's image, voice, or likeness without permission.[39]

To prevent the unauthorized reanimation of the dead, AB 1836 (Bauer-Kahan, 2024), which is sponsored by the Screen Actors Guild-American Federation of Television and Radio Artists (SAG-AFTRA), would establish a specific cause of action for beneficiaries of deceased celebrities for the unauthorized use of a digital replica of the celebrity in audiovisual works or sound recordings.

First Amendment defenses to right of publicity lawsuits. The United States and California Constitutions prohibit abridging, among other fundamental rights, freedom of speech.[40] Drawing on the above-described "fair use" doctrine from copyright law, the California Supreme Court in *Comedy III Productions, Inc. v. Gary Saderup, Inc.* (2001) 25 Cal.4th 387 (*Comedy III*) adopted "a balancing test between the First Amendment and the right of publicity based on whether the work in question adds significant creative elements so as to be transformed into something more than a mere . . . likeness or imitation."[41] The test asks "whether the new work merely 'supersedes the objects' of the original creation, or instead adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message."[42] "Another way of stating the inquiry is whether the celebrity likeness is one of the 'raw materials' from which an original work is synthesized, or whether the depiction or imitation of the celebrity is the very sum and substance of the work in question."[43] "When the value of the work comes principally from some source other than the [plaintiff]—from the creativity, skill, and reputation of the artist—it may be presumed that sufficient transformative elements are present to warrant First Amendment protection."[44]

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[34] *Zacchini v. Scripps-Howard Broad, Co*. (1977) 433 U.S. 562, 573.

[35] *Lugosi v. Universal Pictures* (1979) 25 Cal.3d 813; *Guglielmi v. Spelling-Goldberg Productions* (1979) 25 Cal.3d 860.

[36] Ch. 1704, Stats. 1984.

[37] Jess Weatherbed, "George Carlin's estate is suing the creator of fake AI comedy special" (Jan. 26, 2024) *The Verge*, https://www.theverge.com/2024/1/26/24051476/dudesy-ai-generated-george-carlin-special-sued-by-late-comedians-estate.

[38] *Estate of George Carlin v. Dudesy, LLC et al* (Dist. Court Central Cal., Case No. 2:24-cv-00711), gov.uscourts.cacd.912662.1.0.pdf (courtlistener.com).

[39] Brittain, *George Carlin's estate settles lawsuit over AI-generated comedy routine* (Apr. 3, 2024) Reuters, https://www.reuters.com/legal/transactional/george-carlins-estate-settles-lawsuit-over-ai-generated-comedy-routine-2024-04-03.

[40] U.S. Const., 1st and 14th Amends; Cal. Const. art. I, § 2.

[41] *Comedy III, supra,* 25 Cal.4th at p. 391.

[42] *Id.* at p. 404.

[43] *Id.* at p. 406.

[44] *Ibid.*

Using this test, courts have found transformative a comic book's "half-human and half worm" caricature of two well-known musicians,[45] as well as a video game's depiction of a popular 1990s singer as an anime "space-age reporter in the 25th century."[46] By contrast, non-transformative uses have included literal depictions of celebrities, including lithographs of the Three Stooges,[47] a Hallmark card featuring a celebrity heiress's head on a cartoon body of a waitress,[48] and video games with realistic avatars of band members playing music,[49] as well as collegiate and professional athletes playing the sports that brought them renown.[50]

Although the application of any longstanding doctrine to a novel technology is, at best, uncertain, these cases suggest that publicity challenges against the use of AI to depict celebrities—particularly with digital replicas that are virtually indistinguishable from authentic depictions of the celebrity—are broadly compatible with the First Amendment.[51]

Transferring the right of publicity. "Aspiring musicians, actors, and models routinely sign predatory blanket, long-term (sometimes perpetual) assignments and licenses of their publicity rights as a condition of getting representation, a record deal, a role, or a photo shoot," writes Professor Jennifer Rothman. "Similarly, the NCAA has had student-athletes sign contracts as a condition of participation in college athletics that the NCAA claimed assigned to it the perpetual rights to those students' names and likenesses for use in any context."[52] An example of such a contractual provision is as follows:

> Player consents to the use of Player's name, voice (actual or simulated), likeness (actual or simulated) and biography, with no additional compensation to Player, in any and all media and by all technologies and processes now known or hereafter developed, throughout the universe and in perpetuity . . .[53]

To enhance protections for performers, AB 2602 (Kalra, 2024), which is sponsored by SAG-AFTRA and the California Labor Federation, would render unenforceable contractual provisions governing digital replicas (1) that do not sufficiently delineate the uses of the digital replica, and (2) for which the performer lacked proper representation, either by an attorney or labor union representative.

Some scholars have argued that legislatures should do even more to limit a third party's ability to use an individual's likeness. According to Professor Rothman, the shift from framing publicity rights in terms of economic rather than privacy interests fails to protect the dignity interests at stake when it comes to the control of one's identity. In Professor Rothman's view, "[a]llowing the transfer of a person's name and likeness and other indicia of identity significantly impairs the rights to liberty, freedom of speech, and

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[45] *Winter v. DC Comics* (2003) 30 Cal.4th 881, 890.

[46] *Kirby v. Sega of Am., Inc.* (2006) 144 Cal.App.4th 47, 59.

[47] *Comedy III, supra,* 25 Cal.4th at p. 409.

[48] *Hilton v. Hallmark Cards* (9th Cir. 2009) 599 F.3d 894, 911.

[49] *No Doubt v. Activision Publishing, Inc.* (2011) 192 Cal.App.4th 1018.

[50] *Keller v. Electronic Arts Inc.* (9th Cir. 2013) 724 F.3d 1268, 1276-1277; *Davis v. Elec. Arts, Inc.* (9th Cir. 2015) 775 F.3d 1172, 1178.

[51] The "transformative" test has been criticized by some courts and academics. "Lower courts have struggled mightily[] . . . to figure out how to apply [the test] to expressive works such as films, plays, and television programs." (*De Havilland v. FX Networks, LLC* (2018) 21 Cal.App.5th 845, 863.) "[O]nce we realize that the larger purpose of any such test is to determine the constitutional value of particular communicative acts, we can also see that the doctrine is woefully inadequate." (Robert C. Post & Jennifer E. Rothman, *The First Amendment and the Right(s) of Publicity* (2020) 130 Yale L.J. 86, 158.) Additionally, the Ninth Circuit has indicated that the more stringent "strict scrutiny" test may apply rather than the "transformative" test. (*Sarver v. Chartier* (9th Cir. 2016) 813 F.3d 891, 903 (*Sarver*); citing *Reed v. Town of Gilbert* (2015) 135 S. Ct. 2218, 2226.) "*Sarver*, however, limited application of strict scrutiny to case in which the plaintiff was not a celebrity." (Robert C. Post & Jennifer E. Rothman, *supra,* 130 Yale L.J. at p. 131.) And cases subsequent to *Sarver* have continued to apply the "transformative" test. (See e.g., *De Havilland v. FX Networks, LLC* (2018) 21 Cal.App.5th 845, 863; *Woloszynska v. Netflix, Inc.* (N.D.Cal. 2023) U.S.Dist.LEXIS 194648.)

[52] Jennifer E. Rothman, "The Right of Publicity: Privacy Reimagined for a Public World" (2018), p. 117, Harvard University Press.

[53] Noam Scheiber and John Koblin, "Will a Chatbot Write the Next 'Succession'?" (Apr. 29, 2023) *New York Times*, https://www.nytimes.com/2023/04/29/business/media/writers-guild-hollywood-ai-chatgpt.html.

freedom of association." [54] She raises the possibility that a holder of an individual's publicity rights could, over the objections of the individual, use their likeness in performances involving products or causes the individual finds abhorrent. Additionally, the rightsholder could limit the individual's ability to make appearances or participate in performances in a manner that competes with authorized uses of their digital likeness. In *Goldman v. Simpson*, for example, the trial court, which had transferred O.J. Simpson's copyright in a book to the family of Ronald Goldman as they attempted to collect on the $33.5 wrongful death judgment against Simpson, refused to transfer his right of publicity because of the resulting restrictions on his personal freedom. The court concluded that rights to Simpson's name, likeness, and voice were personal to him and likened the forced transfer of those rights to involuntary servitude. [55]

The advent of consumer-facing, sophisticated GenAI magnifies concerns for performers, particularly those who are seeking their first break and have little bargaining power. Representation by an attorney or union representative, while an important step to protecting these individuals, is arguably insufficient to fully ameliorate such concerns. Further protections may warrant consideration in subsequent legislation.

V.   THE FUTURE OF CREATIVITY

As set forth above, advances in AI have put to bed the assumption that creative expression is the exclusive province of humans. AI can now be used to create novel synthetic visual, audio, and textual media that are virtually indistinguishable from authentic content. The potential implications for music, film and television, and the visual arts are difficult to overstate. While AI can augment human creativity and enable artists to push the boundaries of their craft, it can also devalue human creativity through automation and oversaturation of synthetic content. This raises a number of vexing questions about the future of creative works.

AI and the artist. AI can create more art than any individual artist. By training on massive amounts of digital media and data, AI can generate novel scripts, lyrics, art, and music. Where does this leave human artists? Although it seems unlikely that the demand for human-created art will ever be fully eliminated, many organizations representing artists are raising concerns about the use of AI to replicate their work and potentially replace them. In a world where AI is free or cheap, and art is expensive, what rights and guarantees do artists and creators possess with respect to their careers? With its speed and a dynamic ability to replicate the work and style of human artists whose catalog the systems have been trained on, AI has the potential to devalue technical skills and eliminate entry-level positions in creative and artistic industries. Artists could someday find themselves competing for jobs against AI model that were trained on their own work.

AI tools can help visual artists create and express themselves in new ways, but as GenAI tools become more advanced, they can also be used to displace artists and degrade human ingenuity. The same issues exist for musical artists and actors: these individuals are understandably protective of their likenesses and voices. In response to concerns raised by actors and musicians, the Tennessee State Legislature recently enacted the Ensuring Likeness Voice and Image Security (ELVIS) Act. [56] The ELVIS act updated the state's right of publicity laws, protections for every person's unique voice, image, and likeness, to expand AI-specific protections against unauthorized deepfakes and voice clones.

In April 2024, a coalition of more than 200 music artists released a letter calling on AI developers and tech companies to stop using AI in ways that devalue or infringe on the rights of human artists. The coalition letter, which was signed by musicians such as Billie Eilish, J Balvin, Imagine Dragons, Katy Perry, and the estates of Frank Sinatra and Bob Marley, states that the irresponsible use of AI to undermine or replace human artistry denies fair compensation to artists and songwriters for their work. The letter acknowledges

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[54] Rothman, "The Right of Publicity," *supra*, at p. 125.
[55] *Id*. at p. 118.
[56] Tennessee General Assembly website, https://wapp.capitol.tn.gov/apps/BillInfo/Default.aspx?BillNumber=HB2091.

that responsible uses of AI have the potential to advance human creativity and develop exciting experiences for fans, and it advocates for these approaches over outright replacement.[57]

The effect of AI technology on music and film extends beyond the actors and musicians themselves. Technicians and editors work to improve visual effects, or mix and adjust sound – work that, as of the past few years, can be done by AI.[58] The ripple effect of AI could impact individuals that run focus groups, or gauge feedback from audiences – compared to hiring dozens of humans, AI is cheaper and faster. Even hair and make-up artists are exposed, as AI can be used to augment reality in order to make style changes to recordings of actors in post-production. Extras and background actors, food services, and transportation jobs in the industry risk being impacted as well.

Synthetic data and the AI ouroboros. To date, the vast majority of data used to train AI is human-generated. In the context of music, film, and visual art, these training data are produced largely by artists that benefit financially from the skills and relationships they have developed over their careers. The ability of GenAI to quickly produce and disseminate works of art risks displacing these creatives. What happens if the humans at the base of the training data pyramid stop creating new art?

Many GenAI developers have begun looking to synthetic data as a solution. Synthetic data is created, rather than collected from real-world events. It is designed to mimic the statistical properties of authentic data, and can be useful for training AI when actual data is limited, sensitive, or biased. But problems arise when synthetic data becomes the primary source of training data for AI:

> OpenAI's Mr. Altman had a plan to deal with the looming data shortage. Companies like his, he said at the May conference, would eventually train their AI on text generated by AI — otherwise known as synthetic data. Since an AI model can produce humanlike text, Mr. Altman and others have argued, the systems can create additional data to develop better versions of themselves. This would help developers build increasingly powerful technology and reduce their dependence on copyrighted data. "As long as you can get over the synthetic data event horizon, where the model is smart enough to make good synthetic data, everything will be fine," Mr. Altman said.

> AI researchers have explored synthetic data for years. But building an A.I system that can train itself is easier said than done. AI models that learn from their own outputs can get caught in a loop where they reinforce their own quirks, mistakes and limitations. "The data these systems need is like a path through the jungle," said Jeff Clune, a former OpenAI researcher who now teaches computer science at the University of British Columbia. "If they only train on synthetic data, they can get lost in the jungle."[59]

There are risks associated with relying on synthetic data. First, synthetic datasets may not perfectly replicate the complexity and variability of real-world data. This discrepancy can lead to models that perform well when tested in isolation, but falter in real-world applications. Second, training on synthetic data can amplify biases in the training data if the dataset is not carefully designed. Third, training an AI system on its own outputs can lead to a phenomenon known as "model collapse," wherein errors and biases become continuously amplified until the AI's outputs are no longer correct or useful. A recent Scientific American article likens this problem to the scramble to obtain low-radioactivity metal in the 20th-century:

> The possibility of AI models tainting themselves may be a bit analogous to a certain 20th-century dilemma. After the first atomic bombs were detonated at World War II's end, decades of nuclear

[57] Artists Rights Alliance, "200+ Artists Urge Tech Platforms: Stop Devaluing Music" (April 1, 2024) *Medium*, https://artistrightsnow.medium.com/200-artists-urge-tech-platforms-stop-devaluing-music-559fb109bbac.
[58] "Will AI Replace Traditional Music Mastering Workflows? It Depends..." (February 15, 2024) *Waves*, https://www.waves.com/will-ai-replace-traditional-music-mastering-workflows.
[59] Cade Metz, Cecilia Kang, Sheera Frenkel, Stuart A. Thompson and Nico Grant, "How Tech Giants Cut Corners to Harvest Data for AI," (Apr. 6, 2024) *New York Times,* https://www.nytimes.com/2024/04/06/technology/tech-giants-harvest-data-artificial-intelligence.html.

testing spiced Earth's atmosphere with a dash of radioactive fallout. When that air entered newly-made steel, it brought elevated radiation with it. For particularly radiation-sensitive steel applications, such as Geiger counter consoles, that fallout poses an obvious problem: it won't do for a Geiger counter to flag itself. Thus, a rush began for a dwindling supply of low-radiation metal. Scavengers scoured old shipwrecks to extract scraps of prewar steel. Now some insiders believe a similar cycle is set to repeat in generative AI—with training data instead of steel.

Researchers can watch AI's poisoning in action. For instance, start with a language model trained on human-produced data. Use the model to generate some AI output. Then use that output to train a new instance of the model and use the resulting output to train a third version, and so forth. With each iteration, errors build atop one another. The 10th model, prompted to write about historical English architecture, spews out gibberish about jackrabbits.[60]

AI has not yet caught up with the human brain – at present, even the most advanced GenAI cannot extrapolate beyond the scope of their training data. GenAI developers have an incentive to avoid suffocating the human arts industries while humans continue to represent the sole source of novel, high-quality training data for artistic AI.

The consumer knows best. But what happens to the concept of creativity when AI tools are able to generate scripts and tailor them to specific audiences and demographic groups, forecasting a show or movie's popularity before it is even filmed? Many works of art and critically acclaimed films, series, and music are recognized for taking risks and making unconventional choices. Can AI recognize the difference between a scene in a show or a song on an album that is potentially off-putting or simply offensive, compared to something that is artistically creative and thought-provoking?

In the absence of regulation, the effect of AI on artists will ultimately be determined by consumers. Will movie-goers be more interested in receiving a sequel in half the time, even if the product is more generic? Will they care about the human artists and below-the-line workers that contribute to their favorite products, or respect the time and dedication that goes into their chosen forms of entertainment? The use of AI in art is somewhat like the choice between fast food and traditional sit-down restaurants: one is fast, accessible, and affordable, while the other is slower and pricier. But when it comes to fine dining, experience matters just as much as ingredients. At the end of the day, consumers will vote on the future of AI art with their wallets. There will theoretically be consumers who seek out innovate, human-created art, for as long as the choice remains. On the other hand, California has seen the proliferation of cheaply made goods and generic big-box chain stores successfully crowd out smaller businesses known for creating unique, high quality products. Without proper regulation, human-created art may become similarly endangered.

[60] Rahul Rao, "AI-Generated Data Can Poison Future AI Models," (Jul. 28, 2023) *Scientific American*, https://www.scientificamerican.com/article/ai-generated-data-can-poison-future-ai-models/.