

An Undiscovered Country

Bottomley.S & Chapman.P

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Introduction

My name is Professor Stephen Bottomley and I am a designer-maker, a craftsman and a curator and I work at the Glasgow School of Art as the Head of the School of Design, which is in Scotland in the United Kingdom

I have been asked to talk about new technologies, in particular AI and relate it to jewellery.

I am a jeweller, a maker and a curator. My practice has evolved around the use of technologies and materials, and not always familiar ones to the traditions or conventions of the time when they were used.

Past precedents

If Crafts importance in the design spectrum, has at times been marginalised, its significance irresistibly rises, time after time.

“it is an understanding of the world that people who gravitate towards the craft end of the design spectrum appear to naturally adopt and, even if sometimes unconsciously, use as a frame to guide their practice. Therefore, the value of pragmatic craftspeople () is their understanding that designing is a conversation with the materials of a situation”

(Marshall, Wallace, Wood, Thomas, Blum-Ross Olivier)

Today, in our ever-increasing digital world we can feel sometimes threatened by Artificial Intelligence or a loss of connection with the material world about us, here making as an act can be particularly profound and impactful.

What are the past precedents we can look to as examples of when technological innovation felt overwhelming to creatives?

Woodblock printing and the moveable type originated first in China during the Tang and Song dynasties between the 6th and 12 centuries, initially on clay and silk and then perfected for paper.

In Europe at this time scribes were hand copying and illustrating on parchments and it wasn't until the 14th Century that Johannes Gutenberg introduced the modern metal type printing press in 1450 and the reaction... the creative establishment was horrified!

Scribes who spent months hand-copying single books watched machines produce thousands of copies in days. They declared this would 'destroy the sacred art of beautiful writing.'

Universities banned printed books for decades, claiming mass production would 'cheapen knowledge.'

Scholars argued that only hand-copied manuscripts had authentic value.

So what actually happened? Before printing: All of Europe's books would have fitted in one modern library. By 1500: there were 20 million printed books in circulation.

Scientific discoveries that took decades to travel from Italy to England now spread in months. Knowledge moved from the exclusive domain of the wealthy to anyone who could read.

The scribes were correct - their profession as it was, vanished, yet Illustrators and graphic designers still combine image and text and both are a creative industry. But the printing press didn't destroy creativity; it democratized it and the spread of knowledge that ushered in the Renaissance and a first period of Science, Technology, Engineering, Art and Maths was interwoven and fired innovation and creativity.

Crucially: Those who adapted didn't just find new work - they invented entirely new professions. Typesetters, publishers, editors, printers, book distributors - jobs that couldn't exist before the technology created them. The printing press didn't just replace jobs; it created an entire industry.

This pattern - fear, resistance, then explosive creative expansion with new roles we couldn't previously imagine - would repeat itself with every major technological shift. Which brings us to the 1830s, when another technology threatened to 'destroy art forever'.

The Author Robert Hughes wrote of a 'Mechanical Paradise' in his seminal book 'The Shock of the New' and described the impact of invention and spread mechanical cameras, X-ray machines, automobiles and aircraft. If he were alive today it would be updated to include smart phones.

When photography was invented in the 1830s, the art establishment was horrified. French painter Paul Delaroche famously declared 'From today, painting is dead!'.

Taken in 1838, Louis Daguerre's photograph of a Paris street scene shows a man standing along the Boulevard du Temple getting his shoes shined. It is widely believed to be the earliest extant photograph of human figures.

Eadweard Muybridge was a pivotal figure in early photography, most famous for his groundbreaking motion studies, such as the 1878 sequence of a galloping horse, and his invention of the Zoopraxiscope. Arguments around the position of photography

versus painting went on for decades, while artistic styles were radically influenced by this realism and the changing perspectives of art the movement of creatures, planets and times itself were better understood as mankind took to the skies and aerial photography was born.

Walturdaw (Walter Turner and Dawson) was a British company founded in the early 1900s that supplied and manufactured cinema equipment, including projectors, cameras, and lights, as well as other necessary components for the burgeoning cinematograph industry, such as slides, furniture, and publicity materials.

My Great Grandfather was the Dawson in this trio.

By the early 1900s as cinemas popularity grew, the critical reaction if artists affected, reached fever pitch...

Stage actors dismissed cinema as 'not real performance' - after all, how could something recorded and mechanical compare to live human artistry?

Critics called it a 'fleeting novelty' that would never replace 'legitimate' theatre. They were absolutely convinced this was just a passing fad.

Educators were equally concerned. They worried that moving pictures would make people illiterate and lazy - that audiences would lose the ability to use their imagination if everything was shown to them visually.

So, what actually happened? Cinema didn't kill theatre. Instead, it created an entirely new art form. It gave us revolutionary storytelling techniques, new forms of visual expression, and eventually became one of the most powerful creative mediums in human history.

The 1966 television Star Trek show, among others, during the frenzy of interest of the Space era fuelled the imagination of designer and inventors. The show foretold replicators (3 D printers), Tri-corders and Communicators (Mobile phones), Universal Translators (Google translate), Holo Decks, Heath Decks (health APPs) and Voice control (Siri and Alexa) to name but a few and let alone the fashion for spandex and cosplay!

Once again, we see the same pattern - initial fear, fierce resistance, predictions of doom for traditional forms... followed by expansion of creative possibilities [rather than destruction.]"

The cycle repeats with the introduction of TV, calculators, computers, word processors, 3D printing, laser cutting, online learning platforms - all experienced fierce resistance in their adoption. The pattern is remarkably consistent across centuries. Each time, we predict that the new tool will make students lazy, destroy essential skills, and undermine authentic learning. Each time, we're focused on what we might lose rather than what we might gain

Artificial Intelligence (AI)

Two years ago, the UK's leading universities - including Glasgow - published these comprehensive AI principles. They committed to making all students and staff AI-literate. They've had two years of implementation.

Very recently, September 2025, Oxford became the first UK university to move from talking about AI to complete institutional deployment. Every student. Every staff member. Full infrastructure support.

They're not piloting. They're not testing. They're guaranteeing every Oxford graduate is AI-literate and workforce-ready.

Let me show you a chart by Gartner - they're the world's leading technology research firm that the GSA professor Paul Chapman, Director of emerging Technology showed our strategic leadership group last month. It tracks how new technologies mature from initial hype through to productive use...

Look at these timelines - 2 to 5 years for Generative AI to reach mainstream productivity. That's essentially one degree cycle. The students we're admitting right now will graduate into a fully integrated AI economy.

But Generative AI is just the first wave. Look what's coming behind it: Agentic AI, AI-enabled teaching avatars, self-integrating applications. We're not facing a single disruption but successive waves of transformation.

Every institution will eventually reach this productivity plateau. The question is whether we lead the transition or scramble to catch up. Oxford and MIT aren't just preparing for Generative AI - they're building the capability to ride whatever comes next.

And Gartner puts a specific number on this transformation... By 2028...

Jason Huang, the NVIDIA president is in the news a lot and was with President Trump when he visited King Charles III in the UK last month.

“You’re not going to lose your job to an AI, but you’re going to lose your job to someone who uses AI.”

Jewellery Studio Teaching and New Technologies

So, let’s look at other Glasgow based jewellery designer and academic teasing the creativity from the machine and inspiring future generations.

Silvia Weidenbach was born and educated in Germany before completing her education at the Royal College of Art in London.

Silvia is an apprentice trained Silversmith with an extensive knowledge of haptic digital tools as well as traditional making

Silvia combined contemporary and traditional techniques in her work as illustrated here with a 3-d printed brooch with semi-precious stones set in silver and gold.

These ring images convey the wishes, dreams and realities of their creators at the time. The AI learns from these pieces of jewellery and explores the meaning of materiality, form and features in her own way. It then begins its own creative journey, designing endless new rings for us that somehow feel familiar yet distant.

Loop, Silvia Weidenbach (Glasgow) and Jon Emmony (London) fed an artificial intelligence with images of historical finger rings from over 3,000 years of human history. These include images of Greek, Roman and Etruscan jewellery from the State Antiquity Collection⁰ in Munich, images of objects from the Germanic National museum in Nuremberg and the Alice and Louis Koch Collection in the Swiss National Museum in Zurich.”

Video of *In Infinite Loop*, Silvia Weidenbach (Glasgow) and Jon Emmony (London)

At GSA students are encouraged to explore a variety of different techniques and materials including digital design and 3-d printing

2022 graduate Lucy Pearl Petts, pictured here, is 3D printing in different colours of filament. This creates a surface that changes colour when the pieces are worn.

Let’s keep making and interpret the technology how we as creatives can do so well- making it another tool in our toolbox

Space has been described as a 'Final frontier' and like the gold rush of the 19th Century , its exploration, opportunities and also its potential exploitation is of real concern.

Yet the cost and difficulties of living and operating in extreme environments, like Space, may help unlock too many material innovations to equip us and protect us from Earth's own environmental catastrophes.

Conclusion

I will close with the cinematic vision of hyper drive

And in case you are still wondering about the title of my talk... "an undiscovered country"

I asked AI to explain...

The phrase "an undiscovered country" refers to the unknown, often the afterlife, and originates from William Shakespeare's play *Hamlet*. The words have also been used as a title for a *Star Trek* film (*Star Trek VI the Undiscovered Country*), comic book series, and several novels".

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