THE SCIENCE OF SUCCESS

Steve Strogatz, mathematician, New York Times columnist, podcaster:

'Loved it! I have wondered about these questions of success. Great storytelling, a well paced and engaging film.'

David Suzuki , CBC - Nature of Things:

'It's a profound, thought-provoking film. The situation with Big Data is very much like the Human Genome, a source of vast amounts of information that will be mined in many different ways. Intriguing and scary. Terrific interviewees.'

What are the secrets of success? Science now has the answer.

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The Science of Success

Logline

We used to think success was all about talent and hard work. We were wrong.

One Paragraph

THE SCIENCE OF SUCCESS reveals the hidden patterns that determine success. Understanding these powers has led scientists to be able to predict success.

Short Synopsis

We've always been told that talent and a strong work ethic are the key to getting ahead, but in today's world these efforts alone rarely guarantee success.

This disconnect fascinated **Professor Albert Laszlo Barabasi**, one of the world's leading experts in network science. He and his team have spent the last decade studying human behaviour using massive data sets . They have made profound discoveries that reveal: success and performance are fundamentally different. Whereas performance is an **individual** achievement, success comes from the opinion of a wider **community**. Success is a social phenomenon.

Scientists can now study the vast digital data sets - known as **Big Data** - and their discoveries are having profound impacts on our understanding of the ways society works. Far from being chaotic and unpredictable, social interactions are driven by inescapable patterns of behaviour and these rules determine success in predictable ways.
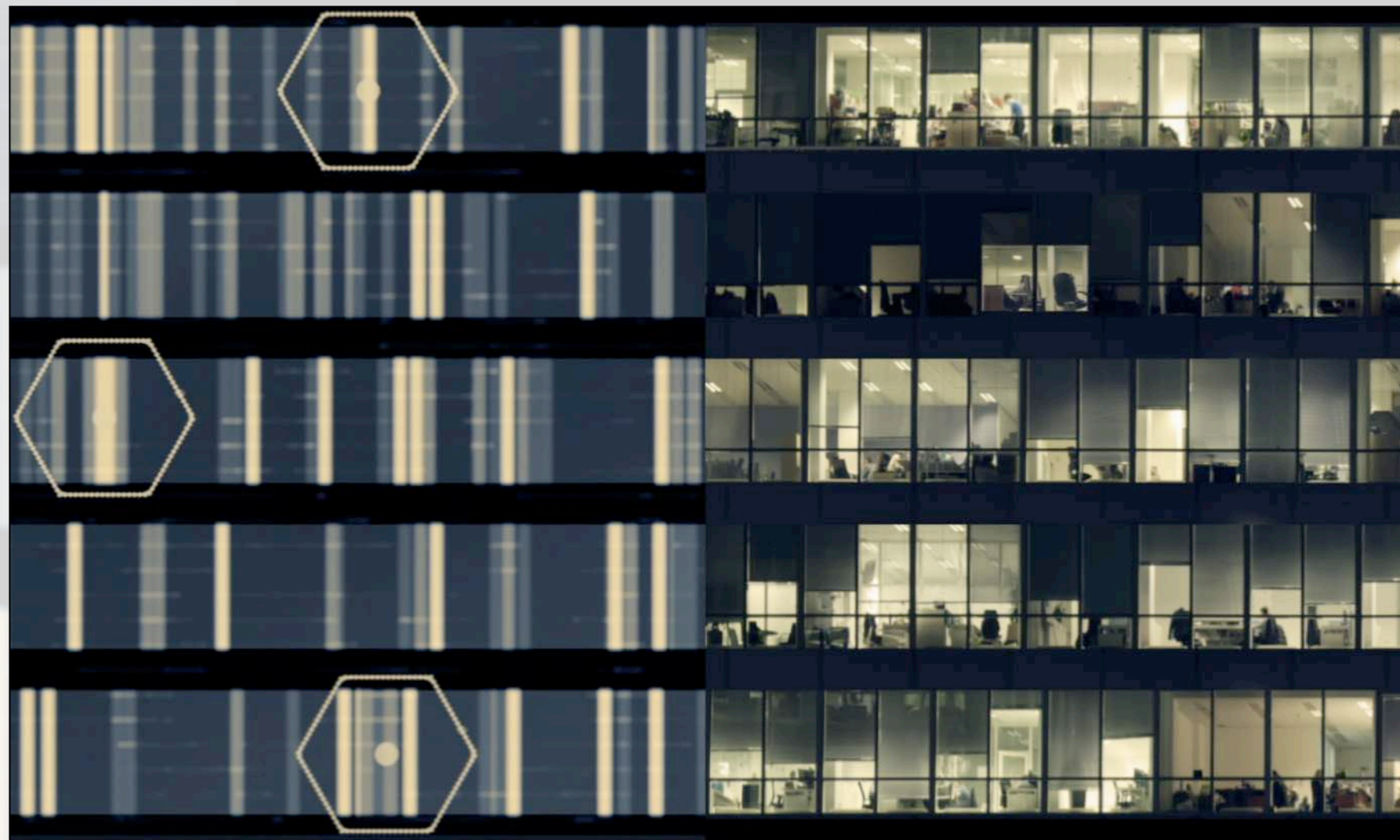
Scientists can now anticipate an individual's success long before it's known. The coming together of *mathematics* and *sociology* is a profound moment of discovery. Optimists believe it will level the playing field allowing talent to rise to the top, while others fear these insights will be manipulated for unfair advantage. But there is no going back.

In a series of fascinating examples, **THE SCIENCE OF SUCCESS** reveals how did the Mona become the most famous painting in the world; how an initial donation can kickstart a successful fundraising campaign; why some soccer players become stars and why some artist's work sells for millions of dollars, while comparable paintings are ignored. Behind each story is a fascinating, yet unknown answer.

By revealing the secrets that drive success, this ground-breaking documentary offers a new understanding of how can people excel in today's society.

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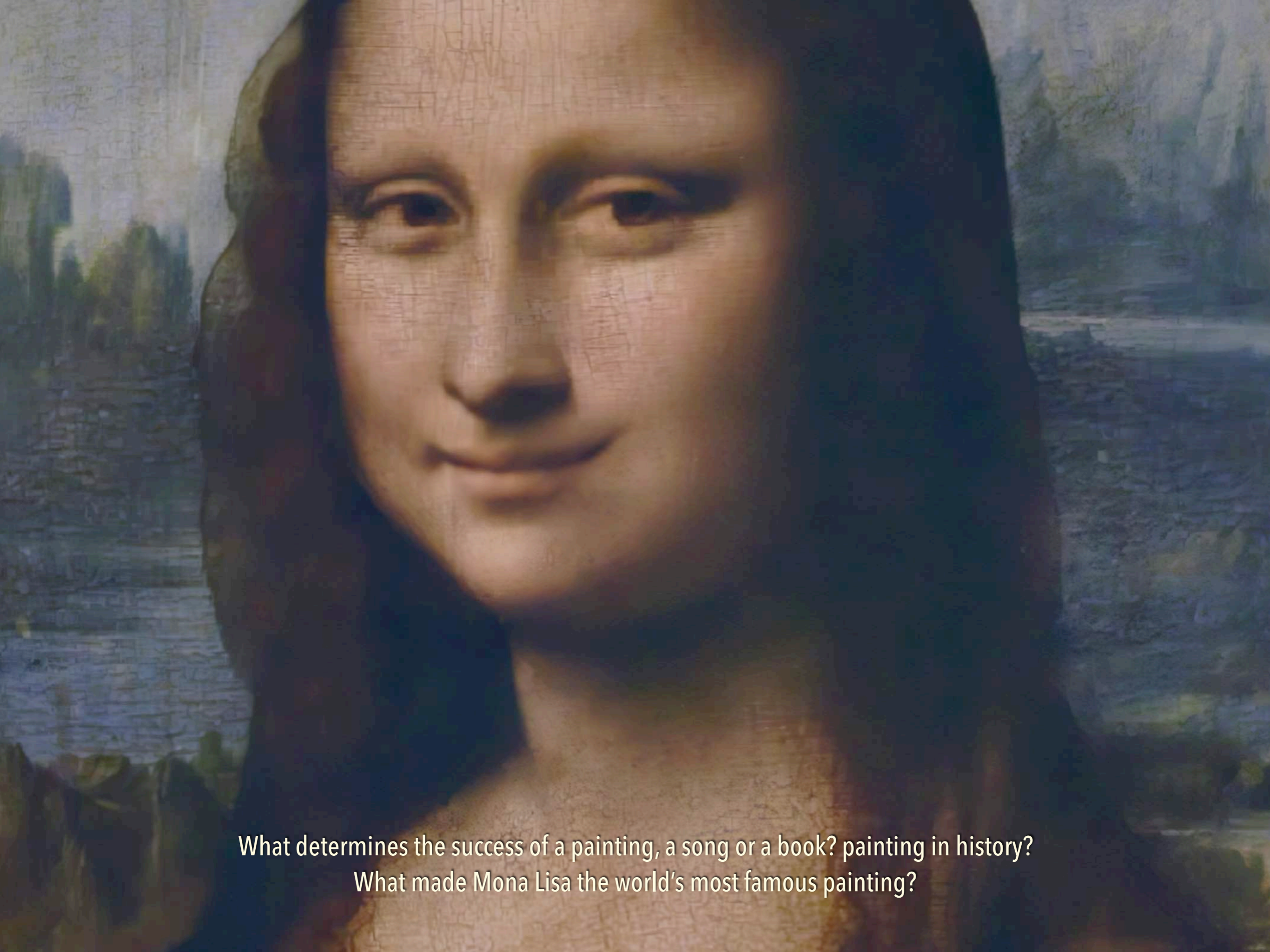
What determines the success of a painting, a song or a book? painting in history?
What made Mona Lisa the world's most famous painting?

What kind of world do we live in? Is it a world where quality prevails or success is down to random luck? To answer the question, Professor Duncan Watts and his team created an artificial music market on a website, called the Music Lab.
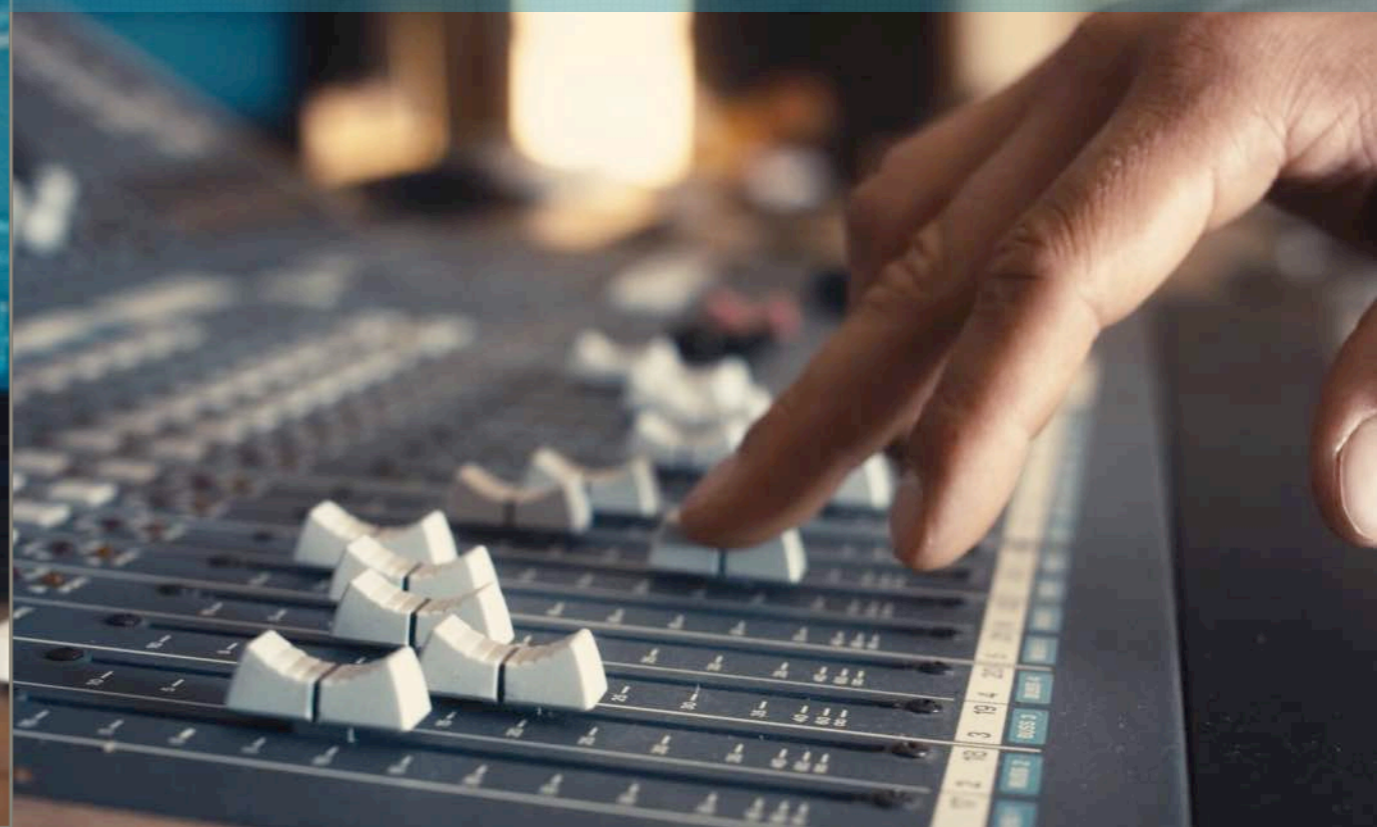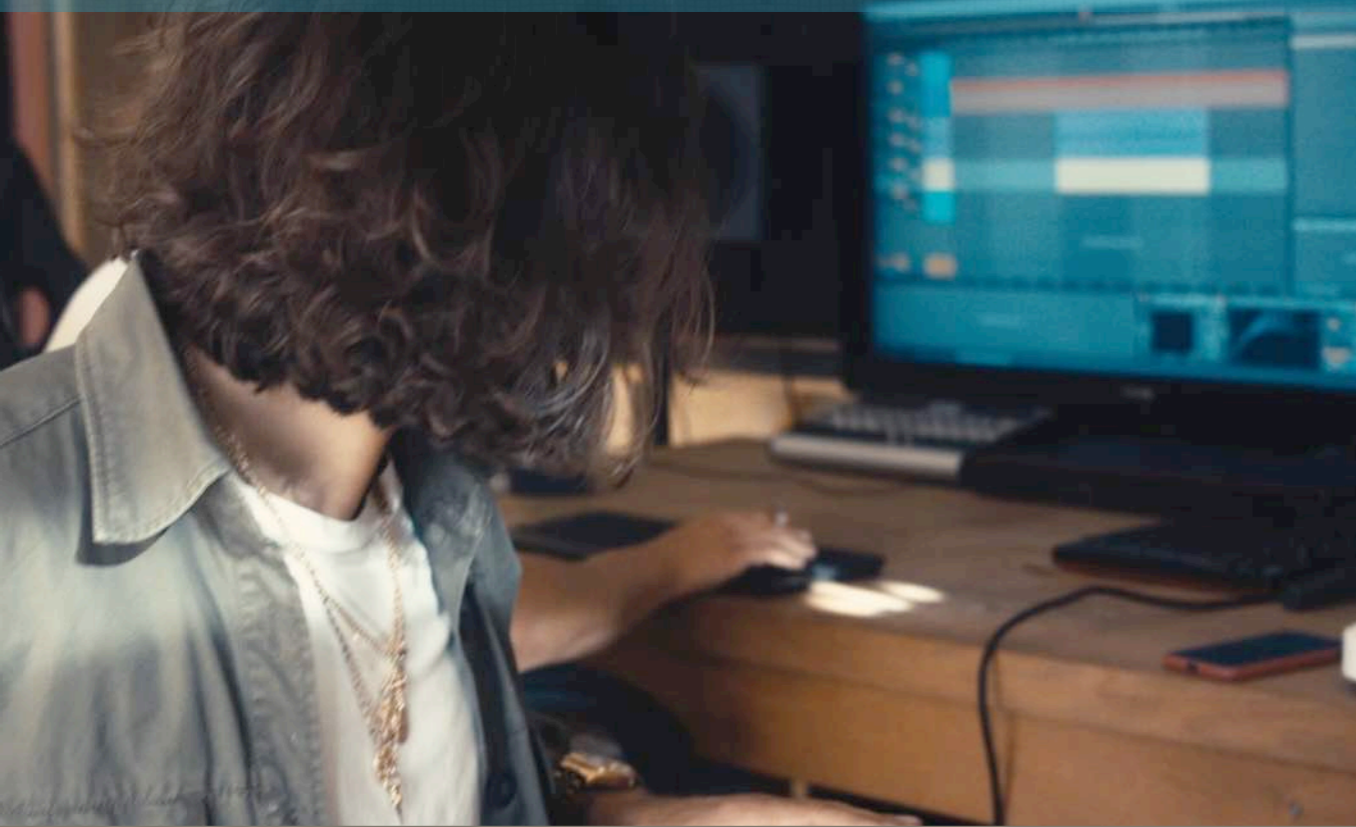
MUSIC LAB WELCOME

Music Lab is a research project conducted by scientists from Columbia University to learn about how people form opinions about music. If you participate in Music Lab you will have a chance to download free new music.

After answering a few questions about yourself, you will be presented with a menu of songs by cool new artists. Your ⸺ion will take between 5 minutes and about two hours
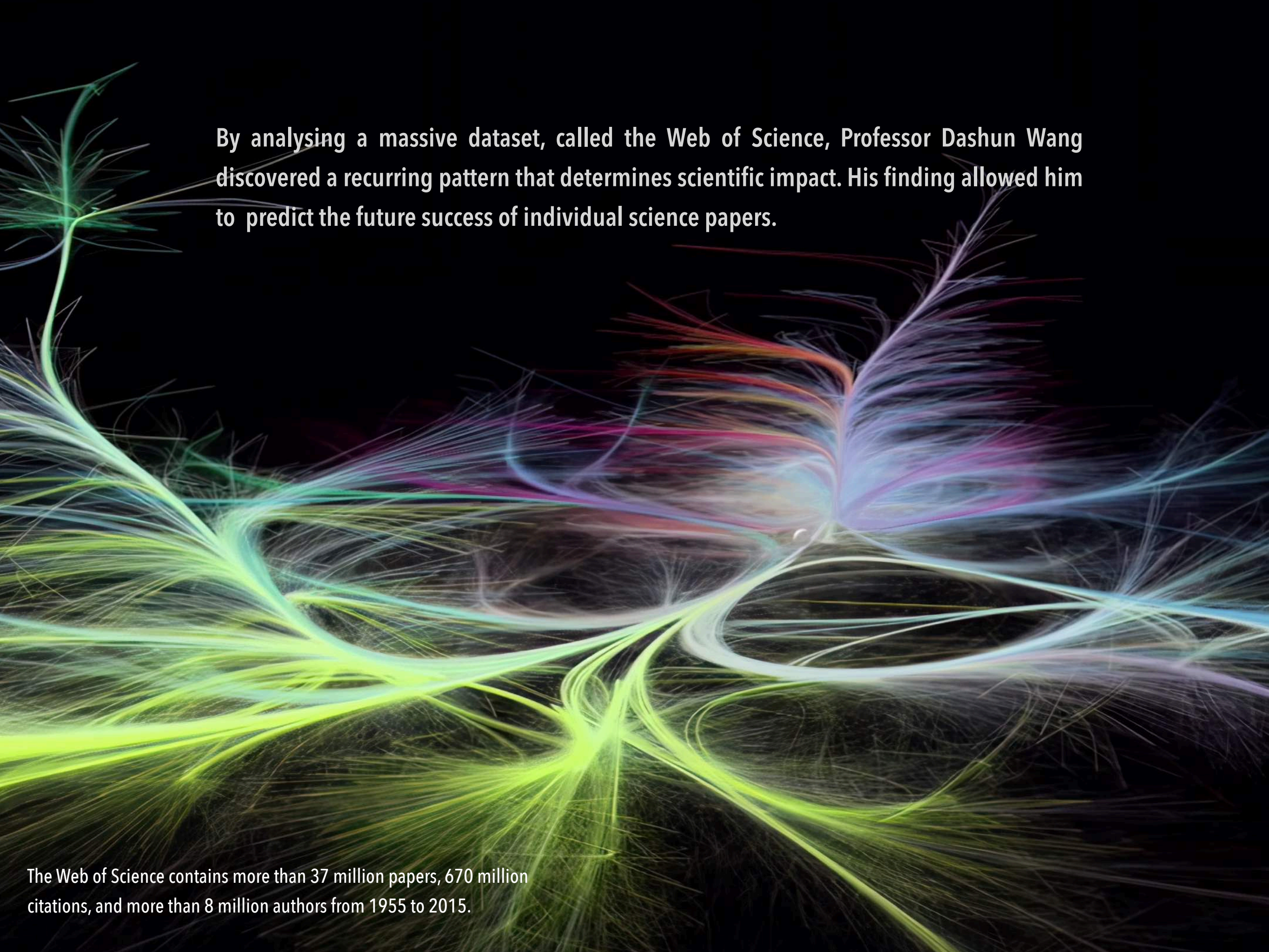
The skyrocketing success of a card game: Exploding Kittens

Exploding Kittens is a card game conceived by **Elan Lee** and **Matthew Inman**, and the premise was self-consciously ridiculous. The game depicted kamikaze cats who could set off bombs by walking across keyboards, and who could only be defused with laser pointers, goat wizards, and catnip sandwiches. The game was like a round of Russian roulette, with strategy and gags.

Hoping to raise $10,000 to produce the game, Lee and Inman posted their concept on crowdfunding site, Kickstarter. They gave themselves a month to reach their target. When they met their goal within eight minutes, they were gleeful. At the $100,000 mark, they became hysterical. When they hit $2 million mark in just two days, they were stunned. Lee stuck a Post-it note on his laptop screen to hide the box where Kickstarter clocked the campaign's total donations. At the end Lee and Inman had amassed $8.8 million from over 200,000 backers.

What was driving this runaway success?

By analysing a massive dataset, called the Web of Science, Professor Dashun Wang discovered a recurring pattern that determines scientific impact. His finding allowed him to predict the future success of individual science papers.

The Web of Science contains more than 37 million papers, 670 million citations, and more than 8 million authors from 1955 to 2015.
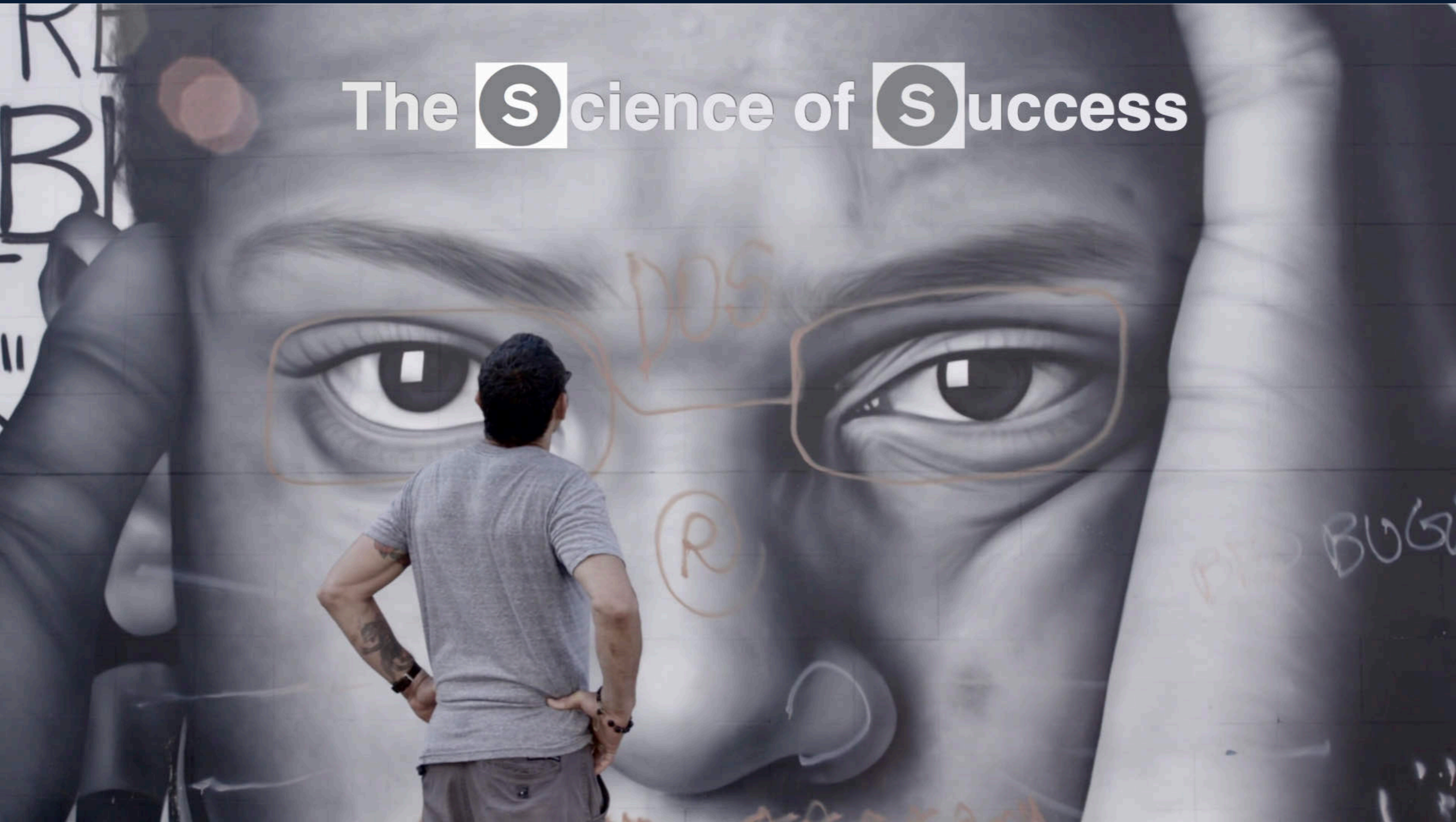
The science behind a twin study, the very different career paths of:

Jean-Michel Basquiat and his partner in art - Al Diaz

No matter, what's on the canvas - the value in art is determined by where the artist enters the Network.

Director's Statement

In 2007 I made a film called "**Connected: How Kevin Bacon Cured Cancer**. Still being broadcast today, the film dealt with an intriguing question: is the idea of 'six degrees of separation' and urban myth, or is it reality? The question is more than just a popular riddle. At its heart lies a new and rapidly emerging field of research, network science. Understanding how networks propagate and spread information, help us answer important question like how viruses spread, how terrorist networks operate and even offer new treatments for cancer.

"**Connected**" introduced the work of network science pioneers **Duncan Watts** and **Laszlo Barabasi**, and yes, it turned out there is more than myth to six degrees. Broadcast by BBC Horizon, ABC, Discovery and many other networks, the film was well received and won awards, but I never imagined it would inspire a new generation of scientists. As we discover in my new film, "**The Science of Success**", the film introduced network science to **Dr. Samuel Fraiberger**, as a young researcher. **Fraiberger's** work – predicting success in art – plays a central part of this new documentary.

Since the pioneering work of Watts and Barabasi two things happened that paved the way to discover the secrets of success. One is that much of our daily lives is captured and stored as data. The other thing is that scientists developed tools that can make sense of this huge dump of data: machine learning, artificial intelligence and network science. Mining that data with this latest technology, now we know the success has little to do with your individual efforts. It's a collective phenomenon based on the acknowledgement of your community. And it turns out that understanding these patterns means scientists astarted to make accurate predictions about success in a nuber of fields, in much the same way that meteorologist can predict the weather. For me that this seemed an important inflexion point. Now we were on the cusp of something entirely new- a combination of mathematics and sociology that would bend the chaotic world of social interactions amongst Earth's eight billion inhabitants towards something altogether. Human outcomes were not left to chance - they were foreseeable, even certain, long before we knew it.

My new film is a kind of unfolding story of discovery, as my two protagonists -and a new generation just behind them began to reveal insights into what distinguishes success from failure. Why is it for instance that in almost any filed, there are a number of candidates who are effectively indistinguishable in terms of performance, yet only a handful truly succeed? Its not a dry question, as many of us want to know what makes for success in work, sport, the arts and business.

I was especially intrigued by the story of two young artists from New York in the late 70s. Initially they worked together, and their art was almost identical. But one, **Jean-Michel Basquia**t, would become the most valued artist in modern history, while his partner, **Al Diaz**, would toil away unheralded for decades. As it turned out, the scientists could explain why.

These and other very human stories in the film give meaning to what is, after all, computational sociology. To put it simply, it's maths that matters to us all, and for me that is the starting point for a science film. These are not dry or distant questions, they offer insights into the way society operates.

The challenge as filmmaker is to not only tell a good story, but to visualise it too. In this I was aided by some of the remarkable visualisations that the scientists had produced in the Barabasi Lab, stunning maps that revealed the links between artists and galleries; scientists and citations, and other vast data sets that are beginning to reveal the way the world really works. We used these data sets to generate some stunning CGI for the film - not guess work, but based on the actual data.

Despite the many disruptions caused by Covid, the film manages to travel the world, from India, China, across Europe and North America to unfold this new, and certain to be very significant, story of discovery. It's been a long and at times difficult journey, but we plan to keep our eye on the science because there are sure to be exciting developments ahead.

CONTRIBUTORS

Former Australian navy officer, **Professor Duncan Watts** is one of the principal architects of network theory. By teasing out the fundamental rules that govern networks of people, machines, companies, and economies, Watts studies how ideas spread, financial systems fail, and businesses survive crises. Duncan has been recognized by the 2009 German Physical Society Young Scientist Award for Socio and Econophysics, the 2013 Lagrange-CRT Foundation Prize for Complexity Science, and the 2014 Everett Rogers Prize. He is also the author of three books: Six Degrees: The Science of a Connected Age; Small Worlds and Everything is Obvious: Once You Know The Answer.

Born in Transylvania, Romania, **Albert-László Barabási** is a Professor of Network Science at Northeastern University, where he directs the Center for Complex Network Research and holds appointments in the Department of Medicine at Harvard Medical School. His work has led to many breakthroughs, including the discovery of scale-free networks in 1999, which continues to make him one of the most cited scientists today. Barabási's latest book, 'The Formula: The Universal Laws of Success', is available in five languages. His previous book 'Linked: The New Science of Networks' is available in fifteen languages.

Professor Arnout van de Rijt is a sociologist at European University Institute, Florence. At Stony Brook University he co-founded and led the Center for Computational Social Science. He is president of the International Network of Analytical Sociology and elected member of the European Academy of Sociology. Van de Rijt received the Lynton Freeman (2010) and Raymond Boudon (2017) early career awards.

Professor Dashun Wang is the Founding Director of the Center for Science of Science and Innovation at the Northwestern Institute on Complex Systems. He is a recipient of the Junior Scientific Award from the Complex Systems Society, the Erdos-Renyi Prize, Thinkers50 Radar 2021. His research has been published in Nature, Science, PNAS, and in virtually all major global media outlets, including The New York Times, Wall Street Journal, , Bloomberg, Financial Times, The Today Show, Harvard Business Review, The Atlantic, World Economic Forum, Forbes, The Guardian, The Washington Post, and The Boston Globe.
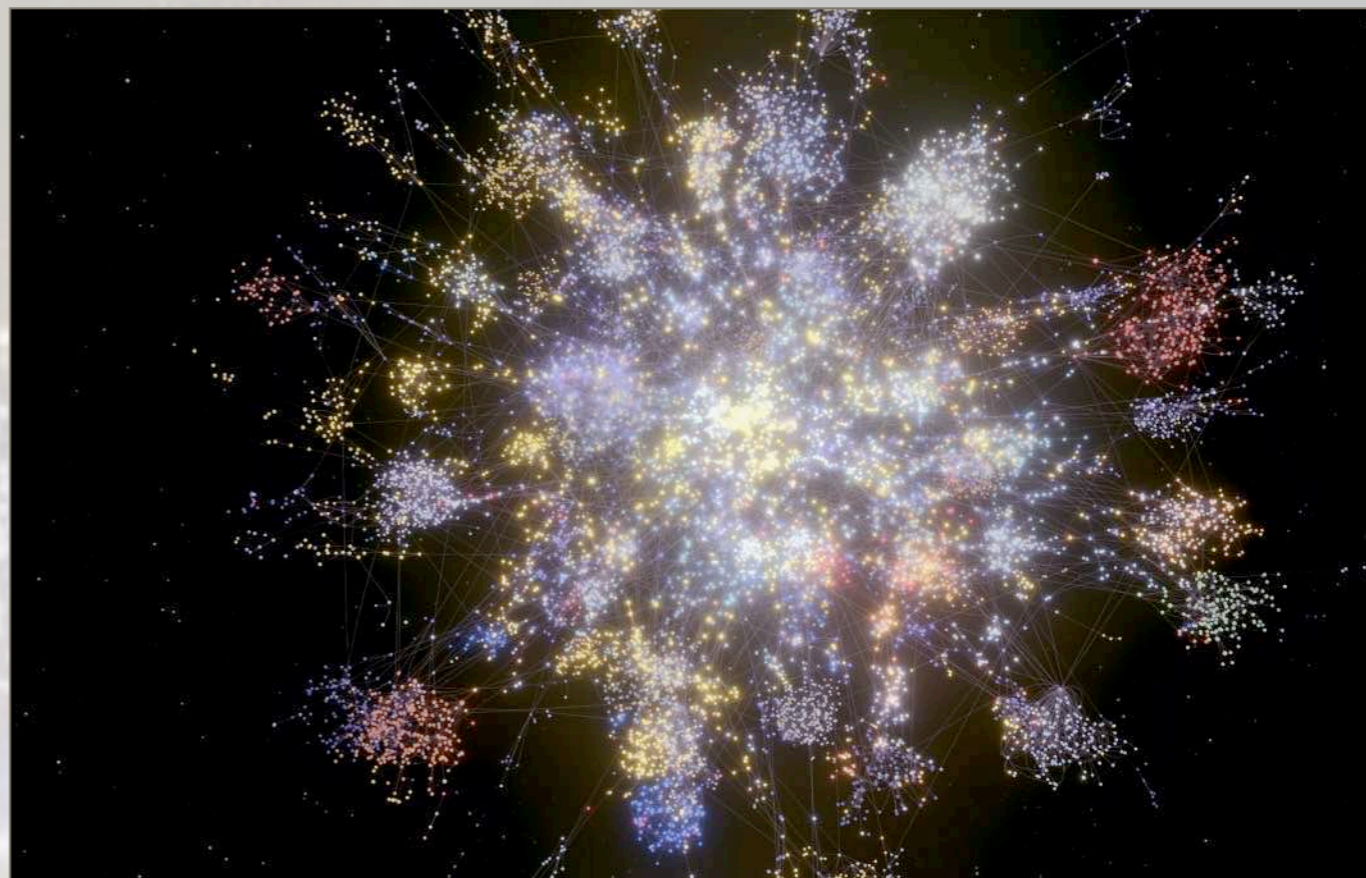
Magnus Resch is considered the most disruptive thinker in the art market. He is a Professor for art economics and founder of the Magnus app, which works like Shazam for art. **Leonardo DiCaprio** is his investor and advisor. Magnus lectures art management at Columbia University and the University of St. Gallen. He is author of five books on the art market. In December 2018, Magnus published his paper "Quantifying reputation and success in art" in Science, the world's leading academic journal. His data set lead to the discovery of what drives success in art.

For **THE SCIENCE OF SUCCESS** Resch granted access to his data set of one million artists to build computer generaed animation of the real art network.
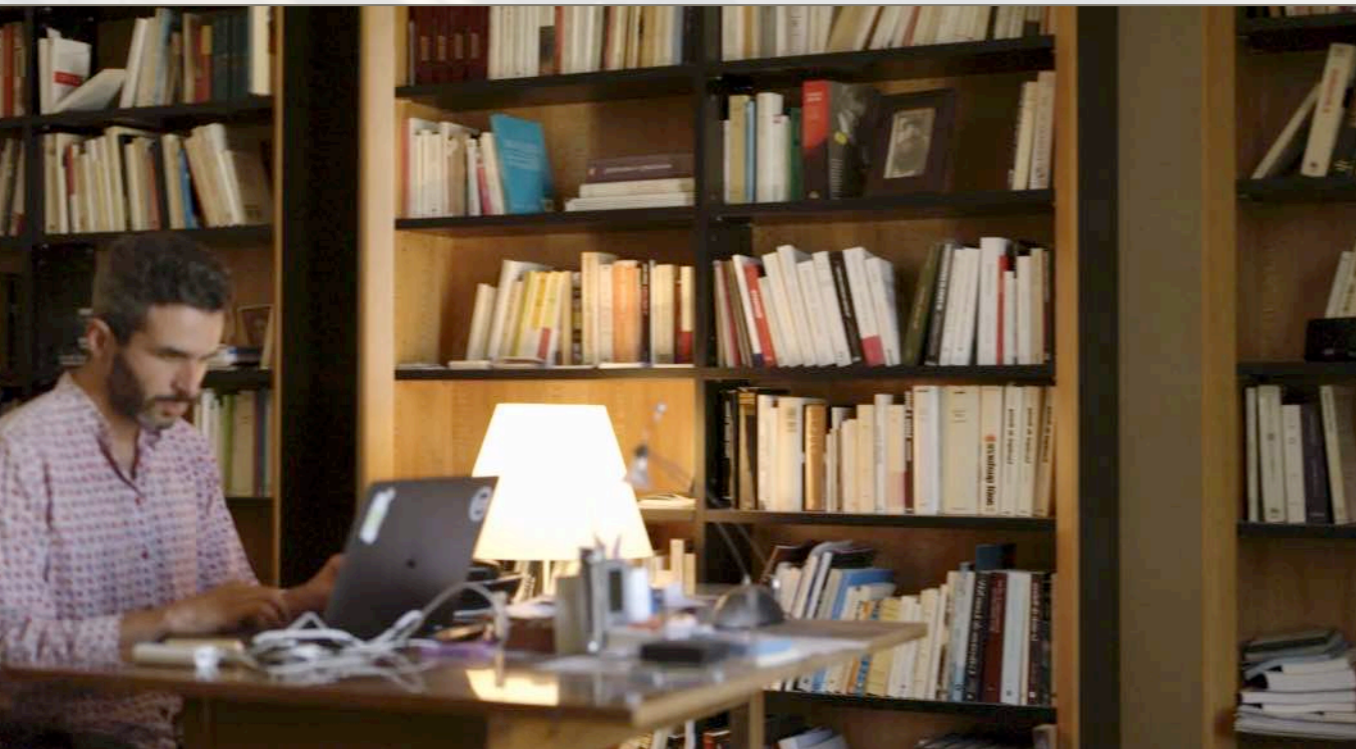
Dr.Samuel Fraiberger is a computational social scientist fascinated by how the digitization of our lives allows to study social processes at an unprecedented scale, using massive datasets and methods borrowed from computer science and social sciences. He is also a firm believer in the power of data and technology to solve societal challenges. He is currently part of the Data Analytics and Tools team at the World Bank, where he focuses on extracting insights from very large datasets to tackle economic development issues. He is also a Visiting Researcher at NYU Computer Science, a Connection Science Fellow at the MIT Medialab, and a Senior Research Affiliate at Data-Pop Alliance. He has published his research in prestigious academic journals such as Science and presented it at TEDx. He holds a Msc from Harvard University and a PhD from New-York University.

Dr. Fraiberger discovered that in areas of human activity where performance is difficult to quantify in an objective fashion, reputation and networks of influence play a key role in determining who becomes successful. He showed how big data and network science can help us predict artistic success.

AL DÍAZ is best known for his friendship with Jean-Michel Basquiat and collaboration on SAMO©. Since Basquiat's rise to fame, the SAMO©... legend has become a globally recognized graffito and has been celebrated as cutting social commentary throughout contemporary art history.

Díaz was known by age 15 as a prolific and influential, first-generation subway graffiti artist. Currently, Díaz works with WET PAINT and other signage used throughout the NYC MTA subway system. In 2016, he resurrected the SAMO©... writings and contemporary fans appreciate his frequent use of Instagram (albert_diaz1), where the satirical images are shared widely. His work has been shown in Beyond the Streets, the World Trade Center, Urban Arts Fair. A notebook that he made with Jean-Michel Basquiat and friends during his teens is currently held in the private collection of the Yale University.

JEAN-MICHEL BASQUIAT was an American artist/ He first achieved fame as part of the graffiti duo SAMO, alongside Al Diaz, writing enigmatic epigrams in Manhattan's Lower East Side during the late 1970s, where rap, punk, and street art coalesced into early hip-hop music culture. At 22, he was one of the youngest to exhibit at the Whitney Biennial in New York. The Whitney Museum of American Art held a retrospective of his artwork in 1992.

Since his early death his work has increased in value. At a Sotheby's auction in May 2017, Untitled, a 1982 painting, sold for $110.5 million, becoming one of the most expensive paintings ever purchased. It also set a new record high for an American artist at auction.

Jitish Kallat is an Indian contemporary artist, living and working in Mumbai. His work includes painting, photography, collages, sculpture, installations and multimedia works. He is represented by Nature Morte, New Delhi, Chemould Prescott Road, Mumbai, ARNDT, Berlin and Galerie Daniel Templon in France and Belgium.

Jitish Kallat was one of the 30,000 artists in Dr. Samuel Fraibergers art network study. Dr. Fraiberger predicted that Jitish's work will be displayed in the most prestigious exhibition places, despite the initial odds in his early career.

THE SCIENCE OF SUCCESS tracks the artist's trajectory of success, providing inspiring insights for young artists.

PRODUCTION TEAM (Australia)

Director/Producer. Writer

Annamária Tálas is an internationally acclaimed television producer/director. Annamaria has a proven ability to pull together complex strands in science to create an original narrative. She has produced/directed award winning science series and one-offs for the world's leading broadcasters including ABC, ARTE, Asahi TV, BBC, CBC, CH4, Curiosity, Discovery, NHK, NRK, RAI, SBS, SVT, The Science Channel, WGBH NOVA and ZDF. THE SCIENCE OF SUCCESS is the continuity of her previous multiple award winning documentary on the emergence of network science: How Kevin Bacon Cured Cancer.

IMDB: **THE KINGDOM – How Fungi Made the World** (52) - CBC. ARTE/ZDF, Curiosity Stream. SVT, Science Channel - winner of 15 and finalist of 25 festivals.**LIFE ON US** (2x52) - SBS, National Geographic US, ARTE - Silver Dragon Prize 2015 **ALIEN FROM EARTH** (52) PBS Nova, ABC, CBC - AWGIE, Silver Dragon Prize, EUREKA, Archeology Channel Best Film, **HOW KEVIN BACON CURED CANCER** (52) BBC ABC - AFI, Silver Dragon Prize, SCINEMA, EUREKA PRIZE

Executive Producer

Simon Nasht is one of Australia's most experienced filmmakers, and an industry advocate who sees true stories as a powerful agent of social change. Nasht's own films have won many award including Logies, AFI and Awgies and the Eureka Prize for science journalism. He has worked with Prime Ministers, Presidents and Nobel Prize winners on every continent including Antarctica, from the slums of Manila to the White House. He has written best-selling non-fiction, taught at the world's leading film schools and founded production businesses in Sydney, London, Budapest, Prague and New York.

PRODUCTION TEAM (Canada)

Co-Producer

Ina FIchman is president and Executive Producer/Producer at INTUITIVE PICTURES, a Montreal-based company dedicated to producing quality film, television and transmedia productions. She works with some of Canada's finest creators: writers, directors, "ideas people" in developing projects that are both innovative and have a wide audience appeal. For over twenty five years, Ina has been producing award-winning documentary and fiction films for television and theatrical release. She was one of the producers of the feature film MABUL (THE FLOOD), directed by Guy Nattiv, winner of best feature film at the Haifa Film Festival and featured at the Berlinale as well as the alternative drama FAMILY MOTEL which screened in theatres in Canada and the US. Her documentary productions include the acclaimed mini-series BLACK COFFEE, the Gemini Award-winning UNDYING LOVE, IDA nominated BEING DOROTHY and PARTLY PRIVATE which was awarded a prize at the TRIBECA Festival.

Executive Producer

Paul Lewis is a television executive and consultant with more than three decades of broadcasting and production experience. As president and general manager of the Discovery business in Canada, Paul created, developed and commissioned some of the world's most ambitious and successful factual television and digital content. He launched the world's first daily science program, Daily Planet, executive produced documentary series and live specials and partnered with international broadcasters – leading Discovery Canada to become the most watched factual channel in the country. Paul oversaw the launch of five television networks and was responsible for their related websites and social media platforms, an in-house production company and a distribution business.

He's a founding Board member and the Director of the World Congress of Science and Factual Producers and the Canadian Science Media Centre of Canada. He's also the consultant-in-chief for the Guangzhou International Documentary Festival, China's biggest and most established documentary festival. He's a regular speaker, judge and panelist at international markets and festivals.

Writer/Director - **Annamária Tálas**

Producers: **Annamária Tálas, Ina Fichman, Simon Nasht**

Editors: **Annamária Tálas , Nora V. Kovacs**

Directors of Photography: **Oliver Nasht, Alex Margineanu, Karl Raymond**

Composer : **Lauren Belec**

CGI : **Real by Fake, Barabasi Lab**

Executive Producers: **Paul Lewis, Simon Nasht**

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Trailer: https://vimeo.com/694252808

pw: SoS