SECRET

SCIENCE GALLERY

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START

NOTHING TO SEE HERE

SECRET

CON TENTS

SECRET

Ian Brunswick
Interim Director, Programme Manager,
Co-curator SECRET
Science Gallery Dublin

What is a secret? Why do humans like to keep and reveal secrets and why are we attracted to cracking codes and solving puzzles? When are secrets a good thing and who has the right to keep them? If you have nothing to hide, are you not looking hard enough?

We often think of privacy in a passive sense — something that can be lost, taken away, intruded upon or diminished. By contrast, secrecy is more active, empowering, and occasionally even enjoyable. It's something we can reveal to trusted friends, keep from foes, protect from prying governments or destroy through whistleblowing.

From government surveillance to Hollywood spoilers, everyone shares, keeps, or learns secrets every day. Rafael Lozano-Hemmer highlights the quotidian nature of secrecy with *Please Empty Your Pockets*, invading our personal secrecy by prompting us to reveal the ordinary items we carry, normally hidden from passers-by. Secrecy can even have its own visual vernacular; from the solid black bars of redacted text to the blurring of faces through pixelation, used on a grand scale in Aram Bartholl's installation *0,16*.

From gossip to encryption, PIN codes to patents, secrets pervade every layer of society. Knowledge may be power, but secrecy is the gatekeeper of knowledge. Who chooses what remains secret and what is revealed? Julian Oliver's *Transparency Grenade* is simultaneously metaphorical and functional, weaponising secrecy and reminding us that revealing secrets can be a highly political, even dangerous act.

The abstract concept of cryptography — behind simple everyday acts like using a debit card — seems more tangible when visualised in Frederik de Wilde's 3D sculptures of quantum numbers.

Scientists, hackers, spies, journalists, psychologists, criminals, companies and governments all approach this new world of secrets in different ways, but the omnipresence of secrecy is undeniable. From Easter eggs to cryptocurrencies, puzzles to politics, SECRET asks what is being hidden from us, what are we hiding, and why?

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SECRETS AND TECHNOLOGY

Marie Redmond

Co-curator of SECRET and Course
Director of the M.Phil. in Creative and
Cultural Entrepreneurship
Trinity College Dublin

The digital technologies that we have all embraced and included into our lives over the last decades have another side — a dark side. These technologies are monitoring our every move, communication and even emotion. The mobile technology that we carry with us at all times is used not only for us to stay in touch and communicate with our friends and loved ones — it is also providing information to our state agencies and others.

Can we have secrets anymore? We certainly cannot keep anything private if we send an email, engage in social media and even use a mobile phone. Our movements, our conversations, our personal data is all being collected, aggregated, indexed and processed. We are freely providing this information for public use without even realising it, or maybe we have a misguided trust in the ethics of collecting this data. How do we know how this data will be used? We constantly make a trade-off between convenience and security. Every device that has Wi-Fi has a unique address and this is constantly being broadcast as you move around and pass by computers that collect traffic data. If you supply your email address in order to use free Wi-Fi, then you are freely relating your device to your email and this will allow access to your personal data.

Several recent crimes have been solved by the use of technology. A man who killed his wife and thought he was undetected carried a mobile phone with him as he moved about, so his presence at the scene of the crime was substantiated by phone records. A more recent high profile case was also solved by tracing the records on a mobile phone which had been discarded and thrown into a reservoir. Neither of these crimes could have been solved without technology — mobile phone technology. Similarly, military drones are employed every day by powerful countries to monitor the movements of individuals and environments anywhere in the world in order to protect their territorial interests.

Our relationship to technology has many dimensions and some are wonderful and effect our lives in positive ways. There is no doubt that the use of different technologies has enhanced our lives and made many tasks and chores easier or redundant. The use of digital technologies has also radically changed how artists create and publish work and will consequentially change the future of scholarship and research. If the scribes who wrote The Book of Kells housed at Trinity College Dublin, used the technologies available today, we would know everything about the creation of this incredible artefact. Who created it? How many scribes contributed to the illumination? Where did they live and work? How many hours a day did they work? What tools did they use? The only actual known fact about this 9th century artefact is where it was found. Perhaps the allure of this magnificent manuscript is that we know very little about its creation. Is it the secrets of its provenance that make it so intriguing?

We are losing a lot by knowing everything. We need to keep our secrets.

@marieredmond

IN CON VERSATION WITH JU LIAN OLIVER

Julian Oliver
Artist, critical engineer and
co-curator of SECRET

To you, what is a secret?
I would say a secret is a means to selectively reveal yourself to the world. It's not necessarily something that is unilaterally constant, in the sense that 'I have a secret, and I keep that secret from everyone'. Very few of us have secrets that are like that. In fact, secrets can be anything from a slip-up that you made, like you said that you wouldn't tell anyone for the benefit of not damaging your reputation at that moment, or it's something that you might keep from your sister but that you would tell your mother, for instance. We sort of stage ourselves and our identities with secrets, and we build layered relationships with ourselves that could be cynically defined as territories, but I think more generally we actually use secrets to define ourselves as a social rule of engagement. Secrets can be institutional and they can be individual and I think all of them do relate primarily and ultimately to identity.

Are secrecies at a grand scale and secrecy at a personal scale utterly different?
I think that a government keeps secrets from reaching a public debate in an attempt to maintain an idea about themselves, the way that they operate and the job that they're doing. I would say from a perspective of state secrets and those that we might hold ourselves to as individuals, there are political differences that deal very much with the border of ideological questions of what it is to live in a democratic domain where we define ourselves as a people together. The oft-cited need for a government to have absolute transparency, that the public are allowed the right to be individually opaque to that government, comes up a lot. This is something that Snowden

talks a lot about, as have many before him, right back to the Cypherpunks in the early to mid-nineties. The politics of secrecy change as they scale... especially as they scale up into a relationship between a people and their elected government.

You said that the scenario has changed, from scale, power, and who is trying to eliminate or preserve secrets, how do you see the issue of secrets and society changing in the foreseeable future?
With the ever-penetrating reach of computer networking and the infrastructure that we build in it or with it, and this thing called the internet, the network of networks, we are getting into the habit of giving a lot away. You can never 'visit' your Facebook profile, it's surrounded by barbed wire, tacks, machine guns and a lot of lawyers, as well as heaps of air conditioning! And so what we've gotten into the habit of, I think quite unwittingly for some people, is the metaphor of the cloud, that very patronising deterritorialised image of the cloud as an object that has no particular relation to a particular country or place — it comes and goes. We've also got used to not knowing who has what on us, as you've seen with the Ashley Madison hack where millions of people were affected. The $19 'delete my profile' full delete button that they made $1.7 million dollars from in 2014 proved to be a lie and this is something that I've been talking about a lot. It's expensive to delete data on hard disks, it's actually cheaper to leave it on there as storage is cheap, and so that $19 'delete my profile' feature has had a significant effect... some people talk about it being a social apocalypse for vast numbers of families. There are people that may have joined and then changed their minds later, and then were of the belief that they had deleted their profile and could carry on as a person who was a bit more comfortable with themselves. We've got so used to giving ourselves away and handing over tremendously significant personal information to people we've never met, often in countries that we don't have a jurisdictional right in, that we are at risk of losing a critical and vital and socially productive relationship with secrecy and secrets, as things that are held dear. And that itself needs to be observed over the years to come before we can know the full impact, but already anthropologists are starting to look at this.

Is there anything in particular you hope visitors take away from SECRET?
I would like to see a general re-evaluation of what has become an unfortunate trope of late of 'having nothing to hide'. I would like the idea of having something to hide as being a negative or expressing a lack of social confidence or otherwise just being a little prudish, to be challenged and have secrecy be cast in a positive, socially nourishing light. I would even go so far as to say it becoming spiritually vital. On the other hand, I would also like to see a healthier paranoia in audiences, at least regarding some of the very pervasive surveillance implementations, state agencies and the more technological side of things. I would like to see a mix of excitement and fear on the audience members' faces as they engage with a work, and maybe mouthing the words 'Oh my god, they can do that?!'. I think this is always productive. I think fear needn't necessarily be a wholly negative and destructive force, I think it can be quite productive indeed. Certainly, with my own project *Transparency Grenade*, that was a huge part of the motivation to make the work.
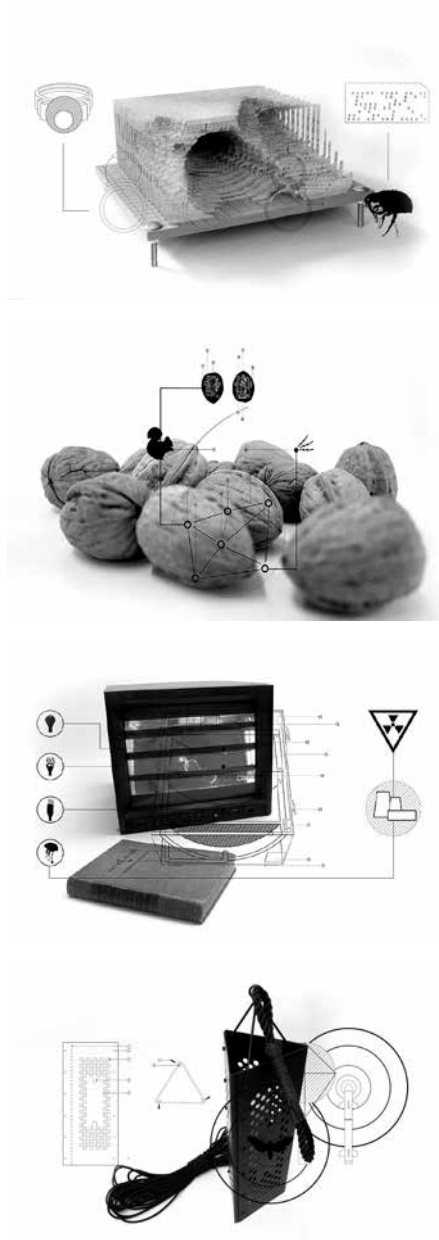
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TECHNO CRATIC FABLES

Technocratic Fables
Tales of nature and technology, 2014
Marcel Helmer (DE)

Technocratic Fables is a collection of narratives that tell stories of technology depending on, cooperating with, or being defeated by animals. These fables are represented by a library of objects and images based on true events taking place within the last hundred years of top secret animal warfare and espionage tactics. The nature of these fables is almost unbelievable, but because they are rooted in fact, anything seems possible.

While the presented possibilities remain just that — possibilities — they open up an alternative realm which might help visitors to discover different angles and perspectives on today's world. The combined theme of nature and technology is designed to question the status quo.

The world of secrecy and espionage is an enigmatic one, a world which has nurtured our fantasies and imagination for decades. In *Technocratic Fables*, the borders between historic fact and designed fiction vanish, and are supposed to remain unclear. It is up to the visitor whether to leave the mystery within the gallery or investigate further to separate truth from fiction.

As a technology enthusiast and dedicated storyteller, Marcel looks into the social status of technology, both in the past and present. He investigates and creates narratives that include machines and devices as characters, in order to research their relationship to nature and each other. Currently based in London, Marcel is working on new projects within his own practice and in collaboration with design studio, proto/meta.

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THE RE PUBLIC OF PRI VACY

The Republic of Privacy
Striving for absolute privacy, 2013
Soomi Park (UK)

The Republic of Privacy is a fictional nation where people can live in absolute privacy. It starts with a simple question: What kinds of new systems are needed to guarantee a life that is one hundred percent private?

This project attempts to examine three privacy issues: How to respect individual boundaries in the sharing of personal information, how to be free from written personal data storage and how to be free from identity analysis by unknown observers and organisations. It responds to these questions by imagining alternative systems to the ones we currently use. 'Identity Marriage' is a speculative marriage ritual where couples exchange their most private personal data, while 'Sniffer Dog Authentication' is an identification system that works on human odour.

The Republic of Privacy illustrates this speculative scenario through an anthropologist's approach of examining physical-cultural elements of the society, such as technological applications, costumes, languages and mannerisms.

Soomi Park is a speculative designer and multimedia artist based in London in the United Kingdom and Seoul in South Korea. Through her work she explores the concept of new emotions emerging in our ever-changing society. She is currently doing a Ph.D. in Media and Arts Technology in the School of Electronic Engineering and Computer Science at the Queen Mary University of London. She completed her M.A. in Design Interactions at the Royal College of Art in London, and also received an M.A. in Digital Media Design from the International Design School of Advanced Studies at the Hongik University in Seoul. Her works have been included in several exhibitions around the world, such as the Biennale Internationale Design Saint-Etienne, the Queen Elizabeth Prize of Engineering, and Ars Electronica. She researches and explores the relationship between the human body and technology at her design consultancy, ReFlexLab, in London.

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CROWD-SOURCED INTELLIGENCE AGENCY

Crowd-Sourced Intelligence Agency
Web-based, crowd-sourced social media
intelligence gathering, 2015
Derek Curry & Jennifer Gradecki (US)

Crowd-Sourced Intelligence Agency is an interactive artwork that allows participants to perform the role of an intelligence analyst through an online interface. By replicating some of the known data-mining processes used by intelligence agencies, participants can monitor social media and evaluate the potential threat of posts that have been algorithmically flagged as suspicious in nature.

The visitor, or volunteer analyst, can catalogue Twitter posts as threatening, non-threatening, or flagged for review by other agents, and can enter notes explaining their decision. When a post has been evaluated, all of the information is entered into a database and is open for review and comments. The Twitter user that originally posted the evaluated tweet is notified, provided with a link to the post on the *Crowd-Sourced Intelligence Agency* site, and is also free to comment on the decision of the analyst.

Additionally, the interface allows participants to view the Freedom of Information Act files and leaked documents that comprise the mosaic of information the project is based on, opening a small window into the secret realm of intelligence gathering.

Derek Curry is a Ph.D. candidate in Media Studies at the State University of New York at Buffalo. Derek's dissertation research focuses on algorithmic modes of control, particularly in electronic stock exchanges. Derek's art practice engages questions of agency and knowledge production through a variety of mediums from video games and data analytics to participatory performance and sculptural data visualisations.

Jennifer Gradecki is also a Ph.D. candidate in Visual Studies at State University of New York at Buffalo. Jennifer's research and practice focuses on the relationship between information and power, and aims to make specialised knowledge and technical information more accessible.

**crowdsourcedintel.org
@CrowdSourcedINT**

AM AU DIO DESK LIGHT

AM Audio Desk Light
Hidden audio data in light signals, 2015
Steven Tevels (BE)

This project was inspired by Alexander Graham Bell's wireless communication research which allowed him to transmit and receive sound through a modulated beam of light. *AM Audio Desk Light* is a personal version of Bell's research applied to a regular black desk lamp. The audio output of an MP3 player is wirelessly transmitted to a photocell (an electronic device that generates electricity when light falls on it) via a flickering LED light.

An LED is the perfect tool to transmit data and sound from a few metres away without anyone intercepting the transmission. The medium of communication used is a fluctuating beam of white light which can be seen and even physically interrupted by the viewer's hand. The LED audio transmitter uses light rather than radio waves to transmit sound. This is a more secure way to send audio signals, as regular radio waves can be intercepted by anyone at any time.

The LED is a focused beam of light; if there is secret data contained within, no-one across the room would be able to read it. There is only audio data when light is visible. Thus, if the viewer doesn't want anyone else to receive the data, then they can simply turn the desk lamp away, or switch it off.

In his search for the essence of auditory perception, Steven Tevels aims to develop a personal sonographic language — an individual means of 'composing' — and he searches for newer presentations of 'sound' and other media than the conventional methods we have used for decades. Simply put, sound is an essential and logical component of his working resources. Steven's latest shows include a variety of festivals, exhibitions and galleries across Belgium, including Sound Art Festival Klinkede Stad in Kortrijk and Experimental Art House in Ghent.

SECRET HAND SHAKE TRAINING DEVICE

Secret Handshake Training Device
Learn and share subtle secret handshakes, 2015
Nicolas Myers (UK)
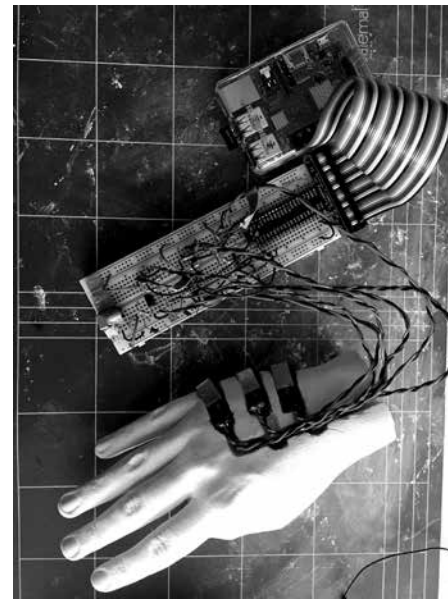
Most of the secrets we keep and exchange, from passwords to personal photos, seem to exist only in digital form. So much so that it's now difficult to imagine passwords and cyphers being mediated by anything but computers. Is there a still a role for a purely analog exchange of secrets?

The *Secret Handshake Training Device* looks to reinstate the idea of secret handshakes in a playful way. Sticking out of a box placed on a stand, an artificial hand invites visitors to shake it. When grasped, the device will offer simple instructions on how to use this training device, before sending a sequence of vibrations to each finger. The visitor is then invited to reproduce the sequence by squeezing each finger in the same order and rhythm. The machine will offer feedback on the trainee's performance.

Tapping into our muscle memory, the *Secret Handshake Training Device* offers the perfect way to practice and learn complex sequences and subtle secret handshakes to share identities and credentials between people.

Nicolas Myers' work, greatly influenced by his studies in graphic design and computer sciences, investigates the implications of digital technology through the filter of design. In a context where almost all physical objects and phenomena are described in a digital manner, his projects question the neutrality of these representations, while focusing on aesthetic and visual representations and interactive experiences. Nicolas graduated from the Design Interactions course of the Royal College of Art in London. He holds an M.A. in Graphic Design from the École des Arts Décoratifs in Paris. He works and lives in London and has shown his work in numerous exhibitions including at MoMA in New York and at the Design Museum in London.
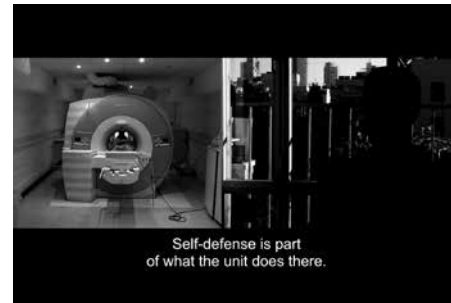
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A SECRECY IMPULSE/ IMAGE BLOCKADE

Self-defense is part
of what the unit does there.

he puts an X on it

there was lots of auditory activity
when they saw the footage.

A Secrecy Impulse/Image Blockade
The ties between censorship, representation,
sensual perception and secrecy, 2015
Ruti Sela & Maayan Amir (Exterritory)

The Israeli Central Collection Unit of the Intelligence Corps, also known as 'Unit 8200', is considered Israel's most elite and secret intelligence unit, responsible for signal intelligence and code decryption. This piece offers a look into the brain of current and former members of Unit 8200. It does that not only by presenting close and intimate interviews with the unit members, but also by simultaneously measuring and exposing their brain activity using MRI technology.

Created in collaboration with prominent Israeli scientists in a research group from the neurobiology lab at the Weizmann Institute of Science in Israel, this work presents a unique investigation into the ways those involved in a system of secrecy process information. It explores issues of censorship and the manner in which it shapes and affects the brain, mainly examining the ways blocking information influences brain activity and how adherence to state secrets affects how one sees and hears in the sensory regions of the brain, like the visual and auditory cortices.

Ruti Sela is an artist whose works have been shown internationally at various exhibitions and venues, including the Sydney Biennale; the Berlin Biennale; The Israel Museum in Jerusalem: the Centre Pompidou in Paris; Art in General in New York; Tate Modern in London, among many others. In 2009 she initiated, together with Maayan Amir, an art project titled *The Exterritory Project*, for which they won an award for young artists from the United Nations Educational, Scientific and Cultural Organization in 2011. Ruti studied art at the Bezalel Academy of Arts and Design, and holds an M.F.A. from the film department of the Tel Aviv University. She teaches at the University of Haifa, the Midrasha School of Art, and other institutions. A book about her work was recently published by Archive Books.

Maayan Amir is an artist, curator, and theorist who holds an M.F.A. in cinema and is completing her Ph.D. at the Centre for Research Architecture at Goldsmiths at the University of London. Her works have been shown internationally in exhibitions such as the Istanbul Biennial; the Berlin Biennale; Jeu de Paume in Paris; the Ludwig Museum in Cologne; Haus der Kulturen der Welt in Berlin; among many others. She edited a book on Israeli documentary cinema, which was published in 2008. Mayaan teaches in the M.F.A. program at the University of Haifa, Sapir Academic College, and at other academic institutions. Since 2012 she has been a researcher on the Forensic Architecture project at Goldsmiths, University of London.

exterritory.wordpress.com

OCCUPY MARK STONE

Occupy Mark Stone
Occupation of a discarded undercover
police identity, 2012
Simon Farid (UK)

In early 2011, *The Guardian* began reporting on the case of the Metropolitan Police officer, Mark Kennedy, who had spent seven years undercover as an environmental activist called Mark Stone. Stone had homes, a passport, a driving licence, a bank card. Once Kennedy's cover was blown however, Stone no longer had a body.

In 2012, Simon Farid began to explore what happens to identities like 'Mark Stone' once they are discarded by their original occupant. Presumably they weren't killed off by the police; who would make the call to the bank to inform them of Mark's death? Instead, Simon speculated that Mark Stone might live on in the different institutional systems that had originally constituted him. If so, could someone else become Mark Stone, using the dormant identifiers sustained by these institutions?

Presented in the gallery are the identity articles Simon was able to secure while occupying the discarded Mark Stone identity. All are fully functioning. They are a result of luck, blagging, amateur detective work and gaps in the system.

Simon Farid is a visual artist interested in the relationship between administrative identity and the body it purports to codify and represent. Taking on the role of a hacker or trickster, he looks to playfully intervene in the identity-generation process, operating as 'other people' and enacting ways to counter emergent institutional identity confirmation mechanisms. A quick Google search will, of course, reveal where he lives, works, what he looks like and information about other people with whom he shares his name.

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YOUR VOICE IS YOU

Your Voice is You
Call for truth, confusion, embarrassment,
stress, excitement and lies, 2015
Zoë Irvine (UK)

You are currently being observed and profiled to an unprecedented degree, be it through loyalty cards or your browsing history online. Voice analysis software can also be used to generate an individual profile or assist in deciding if someone is telling the truth. Voice analysis and personal profiling is a growing area of research and practice for governments and private companies.

Artist Zoë Irvine accidentally recorded the last two years of her mobile phone calls, having used an app to try and capture one important call back at the start of 2013. It didn't work, as it only recorded her side of the conversation, and she forgot about it. When her phone memory became full, she discovered it had kept on recording every single phone call.

Visitors can call this work by phone and explore this extraordinary vocal profile, created by Zoë using voice analysis software applied to her side of mobile phone conversations.

The listener can navigate through categories defined by the software: truth, confusion, embarrassment, stress, excitement and anticipation, and suspected lies.

Zoë Irvine is an artist and sound designer living and working in Edinburgh. Her artistic work spans radio, installation and performance. She has a long-standing fascination with voice and sound editing, which have been themes and tools throughout her work. *Your Voice is You* develops themes from other recent work exploring biometric voice analysis, such as her *Eloquent Voice* performances in 2013 and 2014. Further back in time, in 2005, Zoë created *DIAL-A-DIVA*, a 24 hour live phone cast concert from around the world.

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SCARE MAIL

ScareMail
Disrupt the NSA with 'scary' stories, 2013
Benjamin Grosser (US)

ScareMail is a web browser extension that makes email 'scary' in order to disrupt National Security Agency (NSA) surveillance. Extending Google's Gmail, the work adds an algorithmically generated narrative containing a collection of probable NSA search terms to the signature of every new email. This 'story' acts as a trap for NSA programs like PRISM and XKeyscore, forcing them to look at nonsense. Each email's story is unique, in an attempt to avoid automated filtering by NSA search systems.

One of the strategies used by the NSA's email surveillance programs is the detection of predetermined keywords. Large collections of words have thus become codified as something to fear, as an indicator of intent. The result is a governmental surveillance machine run amok, algorithmically collecting and searching our digital communications in a futile effort to predict behaviors based on words in emails.

By filling all emails with 'scary' words, *ScareMail* proposes to disrupt NSA search algorithms by overwhelming them with too many results. Searching is about finding the needles in haystacks. If every email contains the word "plot" or "facility" for example, then searching for those words becomes a fruitless exercise. A search that returns everything is a search that returns nothing of use.

bengrosser.com
@bengrosser

Artist Benjamin Grosser creates interactive experiences, machines, and systems that explore the cultural, social, and political implications of software. Recent exhibition venues and festivals include Eyebeam in New York, The White Building in London, the Media Art Biennale in Wroclaw, the Athens Digital Arts Festival, FILE in São Paulo, and Museum Ludwig in Cologne. His works have been featured in *Wired*, *The Atlantic*, *The Guardian*, *Neural*, *Rhizome*, *Hyperallergic*, *FastCoDesign*, *Gizmodo*, *Engadget*, *Al Jazeera*, and *The New Aesthetic*. Benjamin's recent recognitions include First Prize in VIDA 16, a Net Art Grant and Commission from *Rhizome*, and the Expanded Media Award for Network Culture from the Stuttgarter Filmwinter.

SPY PUZZLE CAFÉ

Spy Puzzle Café
Puzzles about digital surveillance
and cryptography, 2014
Untold Stories (NL)
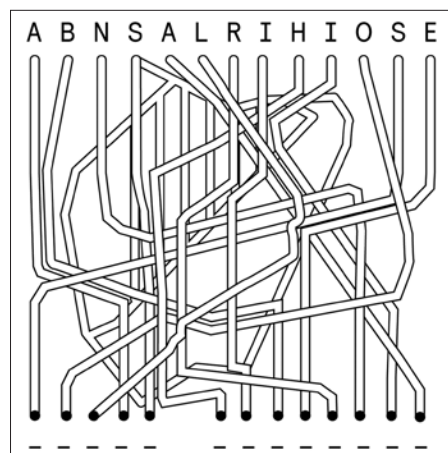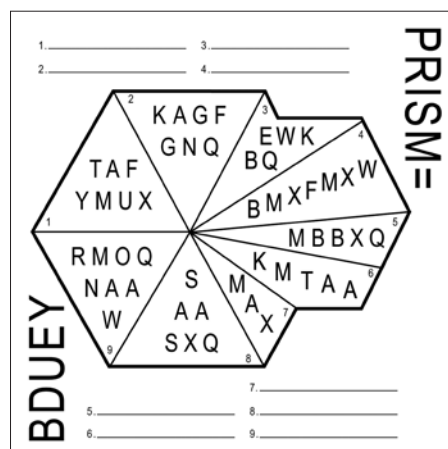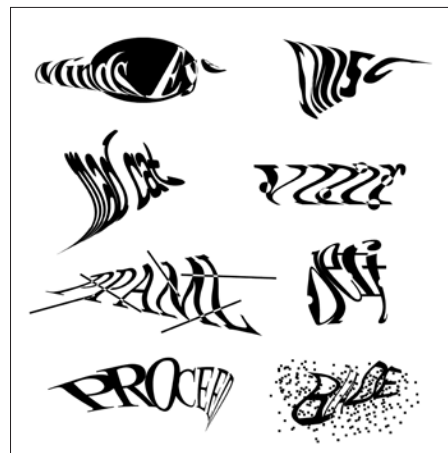
Thanks to Edward Snowden, we have learned about some of the government surveillance tactics that are used to spy on people around the world. Now that the veil of secrecy has been partly lifted, the challenge is to explain what the consequences are for the average citizen. On the one hand, everyone with a laptop or a cellphone is a potential target of digital surveillance. On the other hand, we feel powerless in the face of the complexity of the techniques and tactics that are being used.

Spy Puzzle Café **is a project that tries to address issues of surveillance and digital espionage by letting people solve puzzles. Solving puzzles about matters of surveillance and cryptography brings people closer to understanding them. With a degree of difficulty varying from beginners to more experienced puzzle enthusiasts, the puzzles are designed to interest the average reader in matters of surveillance and privacy that affect us all, but are ignored because of their technical nature.** *Spy Puzzle Café* **is a space where visitors can sit down and try their puzzle-solving skills.**

Completed puzzles can be seen at #spypuzzlecafe.

Under the name Untold Stories, Ruben Pater creates visual narratives about geopolitical issues. He initiates projects in which research is followed by visual storytelling to a wide audience, creating new relationships between journalism and design. His *Drone Survival Guide* received attention worldwide in 2013 as an educational and activist tool against military drones. Research into disaster communication in times of climate change resulted in the *First Dutch Flood Manual* in 2011, and *Double Standards* in 2012 was an installation and publication about the role of global maritime trade in Somali piracy. He finished the Masters Programme in Design at the Sandberg Institute in Amsterdam, and teaches at the Willem de Kooning Academy in Rotterdam.

untold-stories.net
#spypuzzlecafe

ADNAU SEAM

AdNauseam
An artware intervention against advertising
surveillance, 2014
Daniel C. Howe (US) & Mushon Zer-Aviv (IS)

AdNauseam is an artware browser add-on
designed to protect users from being tracked
by ad networks and to allow them to register
their discontent with web advertising systems.

Like an ad-blocker, *AdNauseam* blocks ads on
visited pages, but then automatically clicks
each ad in the background, polluting the user's
profile and creating mistrust between advertisers
and ad networks. By allowing users to explore
visualisations of the ads they've been shown,
AdNauseam also reveals to its users how they
appear to the trackers who violate their privacy
and facilitate bulk-surveillance agendas.

Daniel C. Howe is an artist, researcher and
critical technologist whose work focuses
on the social and political implications of
networked and computational technologies.

Mushon Zer-Aviv is a designer, educator and
media activist based in Tel Aviv. His work and
writing explore the boundaries of interface
and the biases of techno-culture as they are
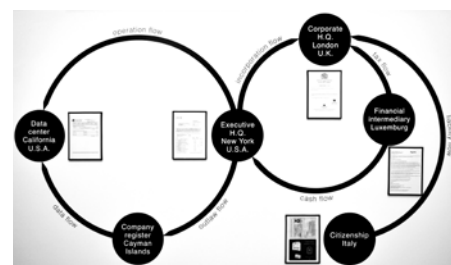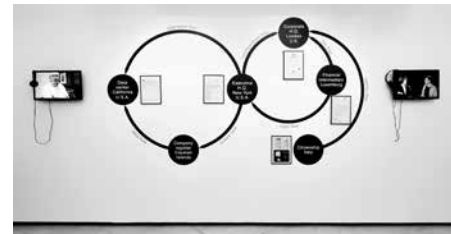redrawn through politics, design and networks.

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LOOP HOLE FOR ALL

Loophole for All
Hacking and exposing Cayman
Islands companies, 2013
Paolo Cirio (IT)

Loophole for All exploits available tax and legal accountability loopholes by registering a company in countries considered 'offshore centres'. Several countries in the world help businesses by providing secrecy, little or no taxation, and lax legal accountability to companies. Consequently, most of the wealthy, major multinationals and banks are incorporated on paper in those offshore centres. The services that they provide are unaffordable for the normal citizens onshore, who have to pay more taxes and legal obligations, while facing cuts to public services and increasing national debt.

Loophole for All democratises the use of offshore centres. It provides a service to the middle class and small businesses who don't want to pay more taxes than they feel they should. The artwork unveils over 200,000 Cayman Islands companies and reverses global finance norms for more creative agendas. The website Loophole4All.com promotes the sale of real identities of anonymous Cayman Islands companies at a low cost in order to democratise the privileges of offshore businesses.

It does this by forging Certificates of Incorporation documents for each company, all issued with the artist's real name and signature. A video documentary investigating offshore centres accompanies the piece, exposing their social costs and envisioning solutions to global economic inequality.

Paolo Cirio conceptually explores issues in economics, democracy, privacy, transparency, and copyright with an innovative aesthetic. His artworks engage power structures, global mass media and the general public — voluntarily and involuntarily — in current social and critical debates. He is particularly interested in how media and specific arrangements of information can influence the creation and perception of cultural, political, and economic reality as well as personal emotional states, interpersonal relationships and instinctive human behavior. Paolo has exhibited internationally has won numerous prestigious art awards. His artworks have been covered by hundreds of media outlets and he regularly gives public lectures and workshops at leading art festivals and universities. He has won a number of awards, including the Golden Nica at Ars Electronica, Transmediale and the Eyebeam fellowship, among others.

paolocirio.net
@paolocirio

0,16

0,16
An interactive analogue pixel wall, 2013
Aram Bartholl (DE)
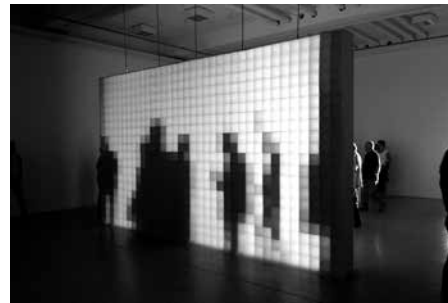
0,16 is a light installation in which the shadows of a visitor are transformed into 'pixels', creating an interplay between internet, culture and reality. The installation consists of a wall built of small square frames covered front and back with transparent paper. A third layer of paper is attached in the centre of the frames. A lamp shining at a distance breaks the shadows of the visitors into squares, allowing a pixelated human figure to be seen on the other side of the installation, revealing the tension between public and private, online and offline, technology infatuation and everyday life. The 'resolution' of the screen is 0.16 pixels per inch, giving the piece its title.

In this simple way, the artist renders tangible the pixels found in the world of digital communications, and examines how and which parts of the digital world can reach back into reality.

Aram Bartholl is a member of the internet-based artist group, Free, Art and Technology Lab. Net politics, the DIY movement, and internet development in general play an important role in his work. Alongside numerous lectures, workshops and performances, he has exhibited at the Museum of Modern Art in New York, The Pace Gallery in New York and Hayward Gallery London. Aram lives and works in Berlin.

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HACKING THE UNI VERSE

Hacking the Universe
3D prints of quantum fluctuations
and quantum vacuum noise, 2015
Frederik de Wilde (BE)
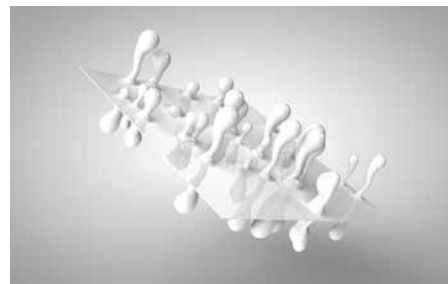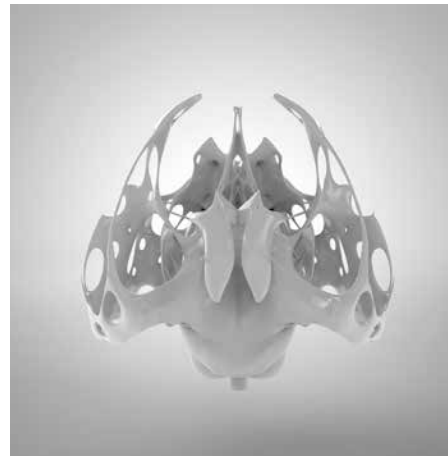
What happens when we explore the creative potential of hacking the substrate of our Universe? In quantum field theory (a mechanical model of subatomic particles), the quantum vacuum state is considered as an unlimited source of energy and defined as the lowest energy state of the Universe, yet it is full of 'life' like the bubbles in a glass of champagne, with fleeting electromagnetic waves and particles that pop in and out of existence.

Through setting up an innovative lab experiment organised by the Australian National University to measure quantum fluctuations, Frederik de Wilde was able to use the quantum vacuum as a source to generate true random numbers. He extracted quantum vacuum noise from the Universe and rendered the noise as true random numbers and piped these into custom-made 3D visualisation software to generate digital 3D models, creating *Quantum Foam #1* and *Quantum Object #1*, the world's first quantum encrypted 3D printed artworks.

Frederik de Wilde practices on the border area between science, technology and art. The conceptual crux of his artistic processes are the notions of the intangible, inaudible, invisible. It is this interstitial territory that Frederik explores in his various works. Sometimes on the side of the technological, and often in the perceptual and conceptual, Frederik's art is grounded in the interaction between complex systems, both biological and technological. The indistinct, diffuse, 'fuzzy' arena where the biological and the technological overlap and mingle is a productive and favored ground for his projects.

frederik-de-wilde.com

NET WORTH

Net Worth
Exploring a new value system for our
information dependent society, 2004
Osman Khan (US)

The visitor arrives at a kiosk with a magnetic
card reader that stands in front of a monolith-
like structure. Visitors are encouraged to
swipe their credit card or ATM card, and the
name contained on the magnetic stripe of the
card is parsed and Googled. The positioning
or ranking of the name is projected onto the
monolith, representing the number of hits
returned by the search on the visitor's name.

The name appears on the projection with the
names of other visitors who have swiped, as
well as some higher net worth individuals, like
celebrities, politicians, artists, and other famous
figures who were pre-fed into the system —
not only as a litmus test for the visitors and
a comparison of their 'net worth', but also
as a reflection of our social condition. Who
has more Google hits… visitors to SECRET,
Paris Hilton or William Shakespeare?

Osman Khan is an artist interested in
constructing artifacts and experiences for
social criticism and aesthetic expression. His
work plays and subverts the materiality behind
themes of identity, homeland, and social
and public spaces through participatory and
performative installations and site-specific
interventions. He is currently an Associate
Professor at the Penny W. Stamps School of
Art & Design at the University of Michigan,
and is a recipient of an Art Matters grant, Ars
Electronica's Prix Ars Award of Distinction
and The Arctic Circle 2009 Residency.

osmankhan.com
@OsmanKhan

FLASH BACK COLLECTION

Flashback Collection
Reflective clothing that transforms you
into a thermonuclear photobomber, 2015
Chris Holmes & Betabrand (US)

After wearing reflective clothing to several performances while touring with Paul McCartney, DJ Chris Holmes noticed that photos from those shows always looked odd, because the flash that bounced off his clothing would obscure almost everything else.

While he wasn't thrilled that many of these photos were ruined, it inspired him to consider if he could use this technology for a greater purpose — like making paparazzi photos worthless or granting someone photographic anonymity.

That was the inspiration for the Flashback Photobomber Hoodie and Flashback Silver Screen Scarf, garments made from highly reflective material (glass nanospheres) that are perfect for anyone who doesn't want their picture taken, or for photobombers who really want to make a lasting impression.

Chris Holmes is a DJ, tech head, music producer, and super connector. Chris has spent the greater part of the last four years DJing as the opening act for Sir Paul McCartney on his world tours. Chris has DJed and produced Grammy parties for Phoenix, The Black Keys, Daft Punk, and Radiohead; movie premieres parties for Edgar Wright, Nick Cave, Jon Favreau; and an Oscar party for Spike Jonze and Annapurna Pictures. Chris works regularly with *Vice*, Adultswim, and Comedy Central. He DJs and produces the world famous Nightswim party along with guest DJs Questlove, Thom Yorke, James Murphy, Young Guru, and Nigel Godrich. Chris also DJed Paul McCartney's wedding. Recently Chris helped design the 'parallel remix' music engine with Harmonix for the new Disney Fantasia Game.

CRYPTO BAR

Crypto Bar
Get secure, have fun, keep secrets, 2015
Science Gallery Dublin (IE)
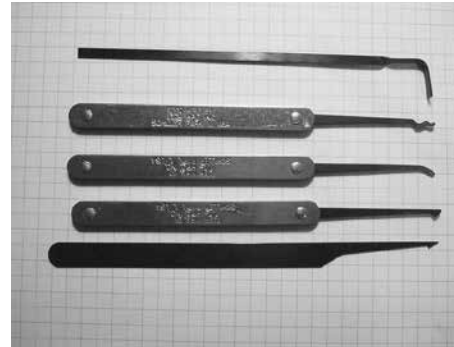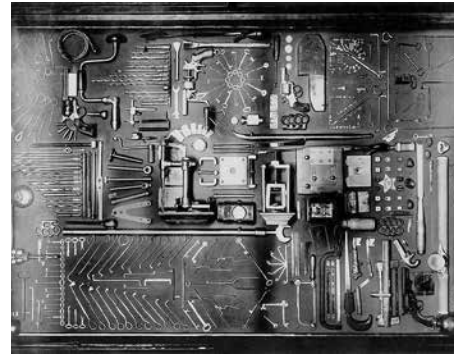
Welcome to the *Crypto Bar* where our Crypto Bartenders will blend up a bespoke cocktail of secure software, useful obfuscation and playful steganography, depending on your personality, preferences and interests.

In addition to cryptographic software and artist created apps, the *Crypto Bar* features lock picking games and browser uniqueness competitions, amongst other activities. These allow visitors to explore systems and understand the ways that even the most secure system can be exploited.

Visitors can book in for our full package of events, where they can get a more personalised consultation for making their systems secure and their communications private.
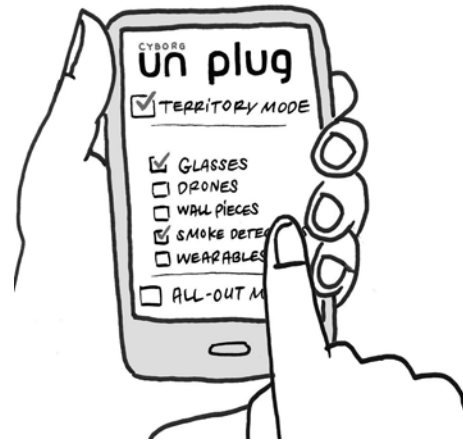
@scigallerydub
dublin.sciencegallery.com

LITTLE SNIPPER

Little Snipper
Wireless anti-surveillance system, 2014
Julian Oliver (NZ)

Cyborg Unplug hits wireless surveillance devices where it hurts: network connectivity. *Little Snipper* is a 'plug to unplug' device made by Cyborg Unplug. It sniffs the air for wireless signatures from unwanted devices, sending an alert to a smartphone when detected. Should the target device connect to a network the user has chosen to defend, *Little Snipper* will immediately disconnect them, stopping them from streaming video, audio and data to the Internet.

Convenient and easy to use, *Little Snipper* just needs to be plugged into an electrical socket and connected to a laptop or smartphone. In just a few screens, users can select which classes of device they'd like to block and the networks they'd like to protect. *Little Snipper* can be kept up-to-date on the latest threats by plugging it into a router: each night it will anonymously and securely check for updated lists of wireless surveillance devices as they enter the market.

Julian Oliver is a New Zealander, critical engineer and artist based in Berlin. Julian's work often focuses on software art, data forensics, creative hacking, computer networking, counter-surveillance, augmented reality, virtual architecture, video game development, and information visualisation, amongst other things. His work and lectures have been presented at many museums, galleries, international electronic-art events and conferences, including Tate Modern in London, Transmediale in Berlin, Chaos Computer Congress, Ars Electronica in Austria, and the Japan Media Arts Festival. Julian has received several awards, most notably the distinguished Golden Nica at Prix Ars Electronica 2011 for the project *Newstweek* (with Daniil Vasiliev).
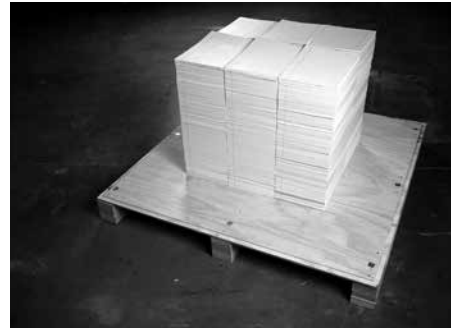
julianoliver.com
@julianOliver

NOTE
PAD

Notepad
Micro-printed text disguised as ordinary
paper, 2008
Matt Kenyon (US)

Notepad is an act of protest and
commemoration disguised as a stack of
ordinary yellow legal pads. When the pages
are magnified, each ruled line is revealed
to be micro-printed text enumerating the
full names, dates, and locations of each
Iraqi civilian death on record over the
first three years of the war in Iraq.

In 2010, a printed edition of one hundred
notepads was covertly distributed to US
representatives and senators. As a form of
Trojan Horse, the effort injected transgressive
data into the halls of power and put the pages
into circulation around Capitol Hill. Eventually,
many of these sheets will be memorialised
in official archives where the names of Iraqi
civilians will also find historical recognition.

Matt Kenyon is an American artist based in
the Metro Detroit area of Michigan, where he
is also an Associate Professor in the Stamps
School of Art and Design at the University
of Michigan. Matt runs SWAMP (Studies of
Work Atmosphere and Mass Production),
which focuses on critical themes addressing
the effects of global corporate operations,
mass media and communication, military-
industrial complexes, and general meditations
on the liminal area between life and artificial
life. Matt has participated in numerous
collaborations with artists, architects, and
technologists, including McLain Clutter, Tiago
Rorke and Wafaa Bilal. Kenyon's work has
been exhibited internationally and collected
by institutions including the Museum of
Modern Art in New York. His work has
received a number of awards including the
distinguished FILE Prix Lux Art prize.

swamp.nu
@mattckenyon

PLEASE EMPTY YOUR POCKETS

Please Empty Your Pockets
A conveyor belt that records everything that travels along it, 2010
Rafael Lozano-Hemmer (CA)

Please Empty Your Pockets is an installation that consists of a conveyor belt with a computerised scanner that records and accumulates everything that passes under it. Reminiscent of an airport security scanner, visitors may place any small item on the conveyor belt, like keys, ID cards, wallets, worry beads, notepads, phones, coins, dolls and condoms. Once they pass under the scanner, the objects reappear on the other side of the conveyor belt beside projected objects from the memory of the installation.

As a real item is removed from the conveyor belt, it leaves behind a projected image of itself, which is then used to accompany future objects. The piece remembers up to 600,000 objects which are displayed beside new ones that are added to the installation. The piece intends to blend presence and absence using traditional techniques of augmented reality, combining real objects with the traces they leave.

Rafael Lozano-Hemmer was born in Mexico City in 1967. He is a faculty associate of the Graduate School of Design at Harvard University. He develops interactive installations that are at the intersection of architecture and performance art. His main interest is in creating platforms for public participation, by perverting technologies such as robotics, computerised surveillance or telematic networks. Recently the subject of solo exhibitions at the San Francisco Museum of Modern Art, the Fundación Telefónica in Buenos Aires and the Museum of Contemporary Art in Sydney, he was the first artist to officially represent Mexico at the Venice Biennale with a solo exhibition at Palazzo Soranzo Van Axel in 2007. He has received two BAFTA British Academy Awards for Interactive Art in London, a Golden Nica at the Prix Ars Electronica in Austria, Artist of the Year Rave Award from *Wired* Magazine, a Rockefeller fellowship, the Trophée des Lumières in Lyon and an International Bauhaus Award in Dessau.

lozano-hemmer.com
@errafael

TRANSPARENCY GRENADE

Transparency Grenade
Network intervention and exposure
device, 2012
Julian Oliver (NZ)
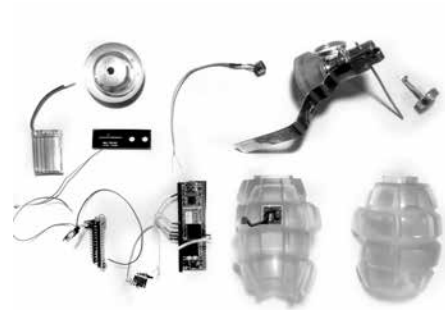
The lack of corporate and governmental transparency has been a topic of much controversy in recent years, yet the only tool for encouraging greater openness is the slow, tedious process of policy reform.

Presented in the form of a Soviet F1 Hand Grenade, the *Transparency Grenade* is an iconic cure for these frustrations, making the process of leaking information from closed meetings as easy as pulling a pin.

Equipped with a tiny computer, microphone and powerful wireless antenna, the *Transparency Grenade* captures network traffic and audio at the site that the pin is pulled, and securely and anonymously streams it to a dedicated external server where it is mined for information. Email fragments, HTML pages, images and voice recordings are extracted from this data are then presented on an online, public map, shown at the location of the detonation.

Whether trusted employee, civil servant or concerned citizen, greater openness was never so close at hand...

Julian Oliver is a New Zealander, critical engineer and artist based in Berlin. Julian's work often focuses on software art, data forensics, creative hacking, computer networking, counter-surveillance, augmented reality, virtual architecture, video game development, and information visualisation, amongst other things. His work and lectures have been presented at many museums, galleries, international electronic-art events and conferences, including Tate Modern in London, Transmediale in Berlin, Chaos Computer Congress, Ars Electronica in Austria, and the Japan Media Arts Festival. Julian has received several awards, most notably the distinguished Golden Nica at Prix Ars Electronica 2011 for the project *Newstweek* (with Daniil Vasiliev).
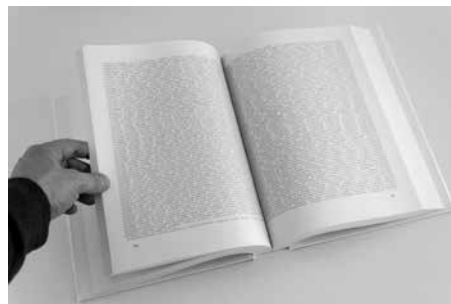
transparencygrenade.com
julianoliver.com
@julianOliver

FORGOT YOUR PASS WORD?

Forgot Your Password?
Books with 4.7 million LinkedIn
user passwords, 2013
Aram Bartholl (DE)

In summer 2012, the social network LinkedIn.
com was hacked by Russian cyber criminals
and lost its whole user database. Hours later,
millions of the stolen passwords, which were
originally in an encrypted format, had been
decrypted and posted on the Internet.

Internet security experts said that the passwords
were easy to unscramble because of LinkedIn's
failure to use a 'salt' (a random number that
is needed to access the encrypted data,
along with the password) when hashing them,
which is considered an insecure practice
because it allows attackers to quickly reverse
the scrambling process using pre-made lists
of matching scrambled and unscrambled
passwords. The eight volumes in the exhibition
contain 4.7 million LinkedIn clear text user
passwords printed in alphabetical order. Visitors
are invited to look up their own password.

Aram Bartholl is a member of the internet
based artist group, Free, Art and Technology
Lab. Net politics, the DIY movement and
internet development in general play an
important role in his work. Beside numerous
lectures, workshops and performances,
he has exhibited at MoMA Museum of
Modern Art in New York, The Pace Gallery
in New York and Hayward Gallery in
London. Aram lives and works in Berlin.

datenform.de
@arambartholl

NANO BLACK

Nano Black
A new colour that's blacker than black, 2014
Frederik de Wilde (BE)
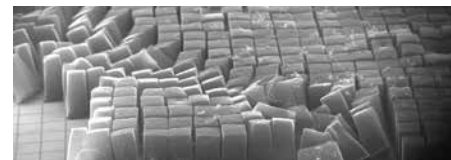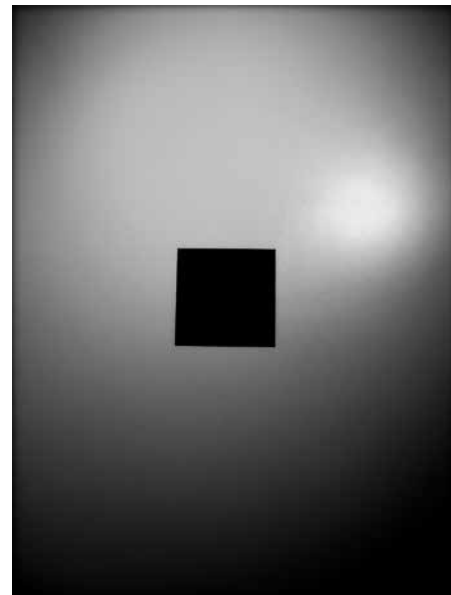
In *Nano Black*, molecular matter has been manipulated to form a sculpture that exists at the atomic scale. By playing on the boundaries of art, science and technology, Frederik was able to utilise nanotechnology to pioneer a super-black material using carbon nanotubes.

This material, made in collaboration with NASA, has been used to craft the blackest of black artworks in the world, an artwork that is able to capture all light. The result is so dark that the eye has trouble figuring out what it is looking at, giving the illusion of a black hole or a void-like appearance.

In a time where we're over-saturated with media and information, *Nano Black* pulls the viewer back to something that is private and personal. The blackest-black concept and artwork help us to question our perception and reality. The blackest-black is not just an interesting coating with an unusual effect, it's the ultimate celebration of the unknown.

Frederik de Wilde practices on the border area between science, technology and art. The conceptual crux of his artistic processes are the notions of the intangible, inaudible, invisible. It is this interstitial territory that Frederik explores in his various works. Sometimes on the side of the technological, and often in the perceptual and conceptual, Frederik's art is grounded in the interaction between complex systems, both biological and technological. The indistinct, diffuse, 'fuzzy' arena where the biological and the technological overlap and mingle is a productive and favored ground for his projects.

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Derek Curry and Jennifer Gradecki would like to thank Science Gallery Dublin for their generous support of this project.

Notepad
Matt Kenyon would like to thank Penny W. Stamps School of Art & Design and the Lear Family Foundation.

Occupy Mark Stone
This project was realised with support from AND Festival, Heath Bunting, Prof Liesbet van Zoonen, Georgina Turner, Loughborough University, and IMPRINTS: Public Responses to Identity Management Practices and Technologies.

Please Empty Your Pockets
This artwork in kindly on loan to Science Gallery Dublin from Borusan Contemporary in Istanbul.

The Republic of Privacy
Soomi Park would like to express her special gratitude to Dr. Anthony Dunne, and Dr. James Auger at the Royal College of Art for their expert guidance of her project. She would also like to thank the people who gave their sincere support to her project, especially to Marcel Helmer, Hyung-ok Park, Elodie Mallet, Henrik Nieratschker, Lana Z Porter, Adam Peacock, Channing Ritter, Alexa Pollmann, Koby Barhad, Jennifer Morone, Christian Schmeer, and Shiori Clark.

Your Voice is You
This project was commissioned by FCA&C. LVA software was kindly provided by Nemesysco.

CURA
TORS

Ian Brunswick

Ian Brunswick is the Interim Director and Programme Manager at Science Gallery Dublin, having joined the team in 2010. He has worked in science broadcasting and youth outreach, and holds an M.Sc. in Science Communication from Dublin City University and a B.A. in Comparative Literature from the University of Wisconsin-Madison. He regularly presents the science news on *Futureproof*, Ireland's weekly science radio programme on Newstalk, and is the lead organiser of TEDxDublin.

Marie Redmond

Marie Redmond studied Mathematics at Trinity College Dublin, and then worked in the computer industry for twelve years in the US for Digital Equipment Corporation. While working in the US, Marie taught at M.I.T. in both the Writing Program and in the Media Lab.

She returned to Ireland where she set up the Multimedia Research Group in the Department of Computer Science, and this led to the founding of X Communications in 1994 as a campus company. Marie designed the MSc in Interactive Digital Media course in 1996 and this course is still running successfully with over 350 graduates working in the digital media and related sectors internationally. Marie also designed an MPhil course in Creative & Cultural Entrepreneurship that commenced in September 2013.

Marie consults to the European Commission on different areas of digital media and is also chair of Rough Magic Theatre and Darklight Festival. She is one of Science Gallery Dublin's Leonardos and has curated shows on robotic art, ArtBots, in both The Ark and in Science Gallery Dublin.

Tad Hirsch

Currently Assistant Professor of Interaction Design and co-director of graduate studies in the Division of Design at the University of Washington, his research focuses on interaction design in urban environments with a strong emphasis on advocacy and civic engagement, and often involves collaboration with NGOs and community based organisations. His work is strongly influenced by public and critical art practice, and has tackled such thorny issues as human rights, environmental justice, and community empowerment.

Tad was previously the Senior Research Scientist and Manager with Intel Labs. He has also worked with Motorola's Advanced Concepts Group and the Interaction Design Studio at Carnegie Mellon University, and has several years experience in the nonprofit sector. Tad was a member of the Rhode Island School of Design's Digital Media faculty from 2006 to 2008, and has taught courses in art, design, and engineering at Carnegie Mellon University, the Massachusetts Institute of Technology and the University of Oregon.

Tad's work has been exhibited in museums and galleries including the Zentrum für Kunst und Medientechnologie Karlsruhe, The New Museum, The Aldridge Museum of Contemporary Art, and MassMoca, and has been featured at major international festivals such as ISEA and Ars Electronica. He has been the recipient of several prestigious awards and commissions, including an Award of Distinction and two honorable mentions at Prix Ars Electronica in 2000 and 2005, and Rhizome Net Art Commissions in 2002 and 2006.

Tad currently serves as the Director of Graduate Studies for the Division of Design at University of Washington. Tad also directs the Public Practice Studio.

Julian Oliver

Julian Oliver is a New Zealander, critical engineer and artist based in Berlin. His work and lectures have been presented at many museums, galleries, international electronic-art events and conferences, including the Tate Modern, Transmediale, the Chaos Computer Congress, Ars Electronica, FILE and the Japan Media Arts Festival. Julian has received several awards, most notably the distinguished Golden Nica at Prix Ars Electronica 2011 for the project Newstweek (with Daniil Vasiliev).

Julian has also given numerous workshops and master classes in software art, data forensics, creative hacking, computer networking, counter-surveillance, object-oriented programming for artists, augmented reality, virtual architecture, video-game development, information visualisation and UNIX/Linux worldwide. He is an advocate of Free and Open Source Software and is a supporter of, and contributor to, initiatives that promote and reinforce rights in the networked domain.

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Science Gallery Dublin

— In 2008, a car park in a forgotten corner of Dublin was transformed into a living experiment that would bridge art and science, unleashing their combined creative potential. Through a cutting-edge programme that ignites creativity and discovery where science and art collide, Science Gallery Dublin encourages young people to learn through their interests. Since opening in 2008, over 2 million visitors to the gallery have experienced 34 unique exhibitions — ranging from living art experiments to materials science and from the future of the human race to the future of play. Science Gallery Dublin develops an ever-changing programme of exhibitions and events fuelled by the expertise of scientists, researchers, students, artists, designers, inventors, creative thinkers and entrepreneurs. The focus is on providing programmes and experiences that allow visitors to participate and facilitate social connections, always providing an element of surprise. Science Gallery Dublin is kindly supported by the Wellcome Trust as founding partner, and by 'Science Circle' members — Deloitte, ESB, Google, ICON, NTR Foundation, and Pfizer. Science Gallery Dublin receives support from financial partner Bank of Ireland, Intel Ireland as education partner and accomodation partner, The Marker Hotel. It also receives government support from the Department of Arts, Heritage and the Gaeltacht and Science Foundation Ireland, and from the European Seventh Framework Programme. Science Gallery Dublin's media partner is *The Irish Times.*

For more information visit dublin.sciencegallery.com

About the Global Science Gallery Network
— Science Gallery is an award-winning international initiative pioneered by Trinity College Dublin that delivers a dynamic new model for engaging 15–25 year olds with science. In 2012, the Global Science Gallery Network was launched with the support of Google.org. This initiative aims to establish Science Gallery locations in eight cities around the world by 2020, with the first new gallery opening in London in 2016.

For more information visit international.sciencegallery.com

NOTHING TO SEE HERE