

DECEMBER 2019 • ISSUE 30

# THINK

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EDITORIAL

## PURPOSE

So what difference does this story make – to you, to the audience, to Malta and beyond? Every writer in **THINK** answers this question. Researchers are driven by a purpose to find things which no one else knows, to build on the passion and knowledge of others. We at **THINK** are driven to share these stories with you.

As we close a year of discussions about home, health, love and, now, purpose, we distill the compelling drive in our protagonists to do what they do. Purpose differs from the other ideas about quality of life. Having a purpose does not always translate into happiness. As summarised in an excellent web comic, *The Oatmeal*, it's not about smiling and feeling positive all the time. 'I want to be busy and beautiful and brimming with ten-thousand moving parts,' the comic's author wrote over a character nested in a bizarre flower with two light bulbs.

It hurts our protagonists to do what they do. From sweating inside a prosthesis (p.22) to coming home exhausted by classroom social issues (p.24), from getting out of bed despite a life-draining condition (p.47) to seeing one's beloved city sacrificed to consumerism (p.34), neither research nor activism nor excellence is an easy ride. Still, purpose is what brings out the best in you, and it's worth the trouble.

Explaining *ikigai*, the popular Japanese concept of 'value in living', Yukari Mitsuhashi stressed finding a purpose in action throughout daily life. We hope that even if you are swamped in routine, our stories will help you see a purpose in your own life as well, and that purpose will propel you forward.

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Are you a student, staff, or researcher at the University of Malta? Would you like to contribute to **THINK** magazine? If interested, please get in touch to discuss your article on [think@um.edu.mt](mailto:think@um.edu.mt) or call +356 2340 3451

COVER STORY



**PURPOSE**

The last in our celestial series, this cover takes you to the stars, which guide travellers just like the focus of this issue – PURPOSE

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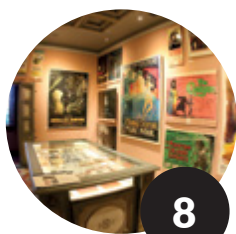
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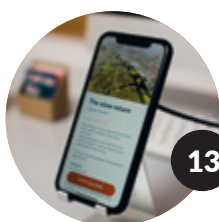
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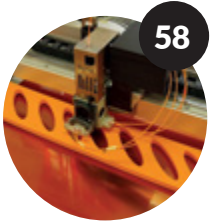
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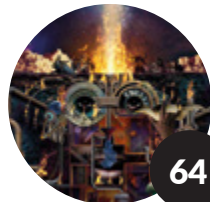
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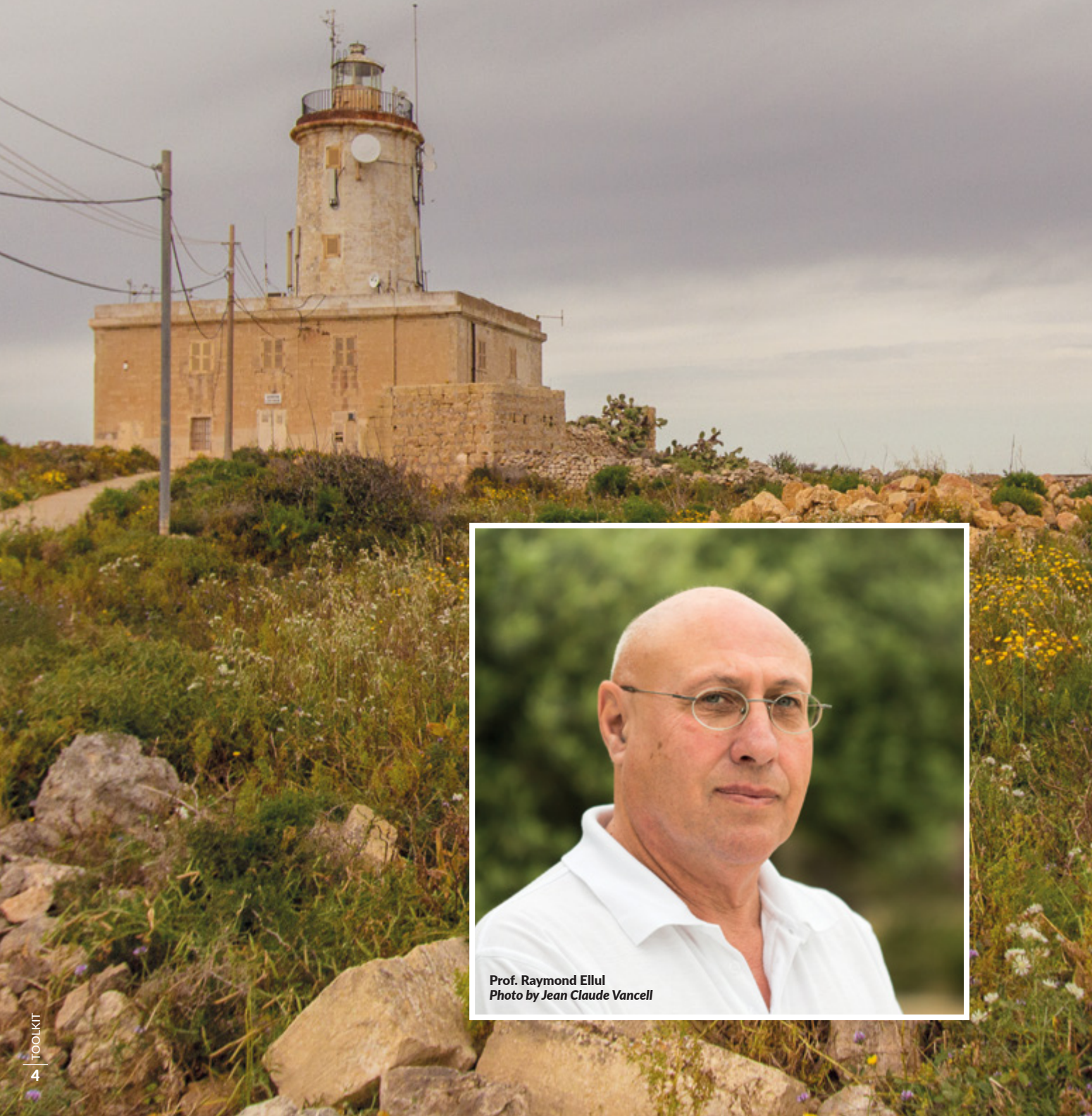
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# TOOLKIT



**Prof. Raymond Ellul**  
*Photo by Jean Claude Vancell*

# Steam, Ships, and Emissions

Author: Chris Styles

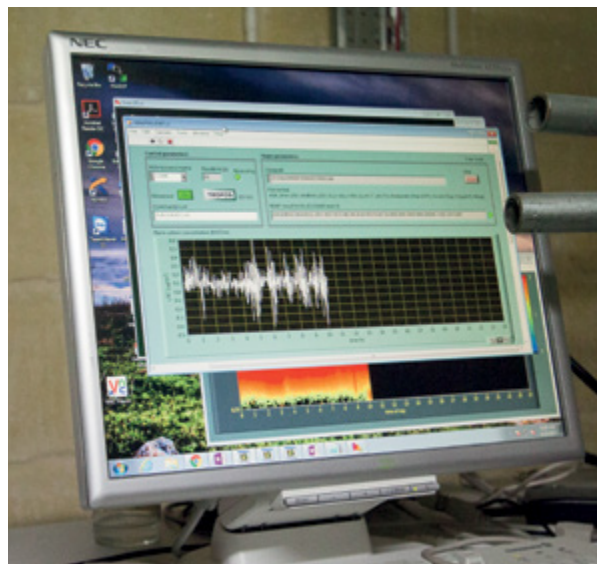
**O**n one of the highest spots in Gozo there proudly stands a lighthouse. Built in 1840, it continues to warn nearby ships away from the shallows. After a long night shift, the lighthouse has another crucial role to play. A team of researchers from the University of Malta, led by Prof. Raymond Ellul, has converted this historic piece of Malta's heritage into a remote laboratory.

It turns out this is the perfect spot for an air monitoring station. North of the island, in the seas between Gozo and Sicily, lies one of the busiest stretches of international waters on Earth, seeing approximately 85,000 cargo ships passing by annually. Each of these vessels constantly belches out masses of harmful gases, such as carbon dioxide (CO<sub>2</sub>), nitrous oxide (NO<sub>x</sub>), and sulphur dioxide (SO<sub>x</sub>). High levels of sulphur dioxide are associated with respiratory disease, preterm births, and at very high levels, death. Nitrogen oxides also cause respiratory disease and headaches, reduce appetite, and worsen heart disease, leading to death. Prevailing winds carry these toxic gases towards the Maltese Islands.

Apart from shipping, some of these harmful gases are released by natural processes, such as volcanic eruptions from nearby Mt Etna. Therefore, sophisticated equipment and mathematical modelling help researchers discriminate just how much cargo ships impact our air.

When Transport Malta first opened the doors of the lighthouse to researchers in 1996, the team had only three pieces of monitoring equipment. 'That was all we could borrow from our German friends,' Ellul recalls. 'At that time research funding at the University of Malta was practically non-existent.' Today the laboratory is full of blinking lights and monitors.

Before the station opened, there was very little information on the rate of emissions in the Mediterranean. Meanwhile, similar systems had been set up in the Baltic Sea and proved effective. Although Ellul has not observed



**Mathematical models distinguish pollution sources**  
*Photo by Jean Claude Vancell*

the volume of gas emissions to significantly increase since the 1990s, he warns, 'What is clear is the trend in temperature which indicates an increase of 3–5 degrees if projected to 2100. It is not simply a case of pollution increasing or decreasing, as the pollutants monitored exhibit very complex patterns [and interactions].' According to emission expert James Corbett's (University of Delaware) data, 27,000 people in Europe die annually due to the toxic fumes emitted by ships.

Having precise data will help the islands keep officials and experts informed on the potential impacts of these fumes and hopefully make proactive changes. The complex system of monitors, sensors, and algorithms that Ellul and his team are operating in that lighthouse on top of that hill is crucial for this. **T**

**You can read more about Prof. Ellul's research in THINK Issues 7 (2013) and 20 (2017).**

# WITHOUT BORDERS

## Where Archaeology, Physics, and Artificial Intelligence Meet

Author: Dr Marc Tanti

**A**ncient Egypt is famous for the mummies of Pharaohs, but did you know that there are many mummified animals? Studying them offers scientists a wealth of knowledge on the method and motivation behind this practice. But mummies are fragile artefacts, and museum curators don't generally appreciate archaeologists dissecting their specimens. To get around this, X-rays help researchers peek inside the mummies without damaging them.

After finishing my Ph.D. in artificial intelligence, I started working as a research support officer at the University of Malta on a collaborative project with archaeologists at the European Synchrotron Radiation Facility (ESRF), a research institute in France. These archaeologists are studying animal mummies from museum

collections, such as the Museum of Grenoble, in order to learn about their structure. This institute is better known for its particle accelerator, which sets electrons flying at nearly the speed of light to understand the shape of drugs and other molecules. So, what's the link with mummies?

A medical grade X-ray is not powerful enough to obtain high resolution radiographs of mummies, but a particle accelerator can emit intense X-rays that can pierce deep into the mummy and create beautiful high resolution images. A single X-ray radiograph is like a shadow of the object from one side, and does not give enough information, but by rotating the object as it is being X-rayed, a radiographer can get shadows from every angle.

A computer can turn hundreds of those images into a 3D shape. This process is called tomography, which I used in my research.

It turns out that this is a very small part of the archaeologists' work. The bulk of the time is spent recognising and colouring different parts of the mummy from the greyscale tomograph (the bones, skin, textiles, and so on) to inspect these parts separately. This is where my work on the Automated Segmentation of Microtomography Imaging (ASEMI) project comes in.

In the project, my job is to use artificial intelligence to automatically recognise and colour in the mummy parts. This year-long project will bring down the time spent segmenting objects from a few months to a few days or hours. It will allow the





Segmenting a crocodile mummy to reveal textiles, skin, bones, internal organs, and skeleton.  
 Credit: Camille Berruyer and Paul Tafforeau (ESRF)

archaeologists to study populations of animal mummies rather than individuals, which will give us a better understanding of this strange but fascinating practice. **T**

The ASEMI project is a collaboration between the University of Malta and the European Synchrotron Radiation Facility, and has received funding from the ATTRACT project funded by the EC under Grant Agreement 777222. The project is led by Prof. Johann A. Briffa (Department of Communications & Computer Engineering, Faculty of Information & Communication Technology), and a team of researchers from the Data Science Research Platform, University of Malta, and four researchers at the ESRF.



Dr Marc Tanti  
 Photo by James Moffett

# DESIGN

## Discover the other side

Author: Emma Clarke

Featuring books, comics, graphic novels, movie posters, and magazines, *The Other Side* is an exhibition that celebrates the bizarre and unearthly. Each room is dedicated to a genre (sci-fi, horror, or gothic fiction), particular character, or prominent author.

If you enter the H.P. Lovecraft room, you will find a thorough documentation of the author's legacy – from the cheap pulp magazines he published in while he was alive and virtually unknown, to the graphic posters of the blockbuster movies inspired by his work. Lovecraft was a recluse who tended to only leave his house after sunset and was never able to support himself through his writing. He died in poverty at the age of 46. After his death, his imaginings of the otherworldly – characters far more surreal than the human-like aliens described by other sci-fi writers – captured people's imagination and inspired numerous works, from 'Day of the Triffids' to 'The Thing'. The graphic art displayed in the collection captures the diversity of his bizarre creations.

The arrangement of the collection helps us to follow concepts and characters as they appeared in popular culture and evolved over time in the hands of different writers and artists. We encounter a variety of incarnations

of Dracula, from early comic-book depictions to the more modern and familiar impersonations by actors like Christopher Lee or Bela Lugosi. A particularly striking piece is a French poster from 1958 by artist Guy-Gérard Noël, advertising Terence Fisher's first *Dracula* film.

Curated by Prof. Saviour Catania, Dr Fabrizio Foni, and Ray Vassallo, and featuring the collection of Carmel Bonnici, the exhibition contains many rare items. Some of these treats are the first appearance of Dracula in a comic book from 1951, or an aged copy of *The Castle of Oltranto: A Gothic Story* by Horace Walpole, published in 1765 and considered to be the first example of a Gothic novel. Two oil paintings by Maltese artist Joseph Bugeja portraying the Valletta vampire add some local flair.

*The Other Side* is rich in nostalgia and intrigue. It is also a thought-provoking demonstration of our fascination with mystery and the possibility that lies in the unknown. Whether it is under the ocean in Atlantis or beyond our universe, the exhibition showcases the ideas which have captured the imagination of people for generations. **T**

**The exhibition is hosted by the Storm Petrel Foundation:**  
[stormpetrelfoundation.org](http://stormpetrelfoundation.org)

The Other Side, Exhibition  
Photos by Carl Farrugia





## Lights, camera, activism

**Raisa Galea**

In 2019, hardly anyone personifies activism more conspicuously than Greta Thunberg. Since August 2018, the teenager's solitary calls for climate action have inspired millions of people to follow her example and take to the streets. The resulting wave of climate strikes is every activist's dream come true: inspiring a mass movement to support a cause, passing on the flame of resistance, stirring the power of a democratic collective. What can we learn from this phenomenon?

After being involved in voluntary work for years, I have come to a conclusion that activism, at its most basic, is about *being seen doing something*. Both elements — 'being seen' and 'doing something' — are equally important.

In order to inspire action in others, we must first *demonstrate it ourselves and be visible*. Thus, irrespective of the urgency of the cause, activities lacking in media coverage are doomed not to reach a broader audience, and, consequently, their organisers would not be seen as activists.

On the other hand, even if showered with media coverage, the action might not inspire a movement if it does not offer a space for practical involvement. The latter is decisive because one of the most attractive sides of participating in activism is moral satisfaction from *doing something about the problem*.

Alongside daily dispatches of ecological calamities from the Amazon to Siberia, we are regularly encouraged

to do our little bit by refusing plastic and switching to veganism. The anxiety of inaction, reinforced by policy makers' and public servants' inertia, breeds a feeling of personal guilt. Many thus turn to activism for a comforting escape from this guilt trap.

The emotional pressure to act can shape two kinds of strategies: one that shifts responsibility to and demands actions from individuals, and the other that exerts political pressure on decision-makers. To alleviate the internalised guilt for the disturbing state of the planet, it could be tempting to demand individual action, from advertising 'conscious' consumer choices on social media to picking up rubbish. Individualised



activism brings moral satisfaction and boosts egos with public admiration, but fails to challenge the status quo and absolves governing bodies.

Cleanups are perhaps the starkest example of the escapist kind of activism; politically impotent, yet widespread. Moving rubbish away from visible spaces to landfills — out of sight, out of mind — ticks all the boxes: it attracts media coverage, creates space for practical involvement, and offers moral satisfaction from ‘doing something about the problem’. Although it brings visible (yet temporary) improvement — cleaner beaches and pavements — this kind of activism rarely addresses the causes of pollution, the intrinsic

flaws of plastic manufacturing, and the market mechanisms that enable it.

Pressure group *Moviment Graffiti* leads a different, political, kind of activism in Malta. The movement’s direct actions have succeeded in drawing public support and are creating a space for a broader democratic participation. Regardless of shared elements with the individualised kind of cleanup activism — visibility and action — it differs from the latter in one aspect: it offers no immediate moral gratification from witnessing the results of the action.

Authorities don’t accept demands for policy change and challenges to the developers’ power right away. Instead of the personal glorification

behind consumer activism or cleanups, system-level actions require persistence and trust in the power of a democratic collective.

The true social value of activism is not in the instant gratification it may offer to private individuals. It rests in its power to inspire a movement for a common goal that puts pressure on decision-makers to act in the common interest. Eventually, this movement may even lead to more radical demands, such as ‘system change not climate change’. The most praiseworthy effect of activism is to help us experience our collective power — just as Greta Thunberg’s inspiring example has successfully proven. **T**



## Designing success

**Daniela Quacinella**

**P**icture the following. You are a museum director or curator who wants more locals in your space. You are confident that your next art event will attract them: a prestigious artist from London, a series of exciting talks... You are certain it will be a success, because your passion and knowledge are behind this activity. On the day, as you stand near the entrance with excitement tingling across your fingertips, you slowly begin to despair. Despite a great marketing campaign, the local residents congregate anywhere but the museum. What went wrong?

Ask a design researcher, and you'll find out that the first misstep was to assume your target audience would share your passion. The designer would ask: Why should people care about your museum? Contemporary design practice requires you to put yourself in somebody else's shoes.

I've been applying a design approach to meetings and workshops: making thoughts and ideas tangible in a visual way. It's a powerful communication tool, and it is really useful for making collective, complex decisions. I draw inspiration from emerging design practices like design for social innovation, transition design, and strategic design, as the focus moves away from objects towards 'ways of thinking and doing'. In undergoing this shift, design becomes a means to tackle social, environmental, and political problems.

Designers' 'magic formula' is 'design thinking': it is an evidence-based, solution-focused iterative process with a clear set of steps that aims to make sense of the mysterious process of creativity. Let's go back to the museum. Rather than starting from your impossible-to-fail

art event, the first step of this process requires research and an understanding of the local context, by observing and interviewing people to figure out their needs.

Another basic principle of the design process is the ongoing experimentation by externalising ideas in brainstorming sessions and adopting a hands-on approach in prototyping and testing. One of the most challenging and exciting things I do is teaching design. It is a mindset and a practice that can't be acquired through theory and books. You can easily memorise the design thinking process, but what's the use of a compass if you are not travelling? So I asked my students to conduct a research project on re-imagining the future of education in 2050 with the use of emerging technologies.

Learning to be an innovative designer requires tapping into your own motivation, personal interests, and values. Giving students a future-oriented project encourages them to critically reflect on future needs, challenges, and opportunities for education in 2050 to bring forward and envision preferable futures. Embracing this learning method can be daunting for students who are used to memorising concepts to pass exams. My role is to guide them in the process, providing different design frameworks, tools, and methods that support them in building their creative confidence and leading them to be comfortable with the ambiguity and uncertainty of the 'not yet'.

Back to the museum, if you are a director and want the community around you to rush through the door in anticipation of the latest exhibition opening, step outside and look at the world as if you've never seen it before. **T**

# STUDENTS



Datsuzoku  
mobile  
application  
interface

## Allow yourself to get lost

**Maria Elena Galea**

In the fast-paced world of today, the word 'slow' often conjures negative feelings. When on holiday, many people rush attractions, taking snapshots to create proof of their visit for social media. In Malta, popular tourist apps guide visitors to overcrowded beaches, while there are a lot of small villages that tourists never discover. As a passionate traveller, I chose to integrate the concept of slow living into my dissertation and explore how user interface design can help people appreciate the place they are visiting.

Supervised by Malcolm Bonello, I created an interface for a mobile application that can offer a different travel experience to individuals desiring to discover less visited places in a leisurely manner. I decided to name my mobile app *Datsuzoku*, which means 'escaping routine' in Japanese. It combines travel inspiration and documentation in one application. This is done by following the principles of Zen while connecting with the world, ourselves, and the people around us.

When the interface is further developed, the app will send a daily reminder to the user with a suggestion to spend some time outdoors, escaping the routine. Over time, the community of users will generate challenges and suggestions for each other. The use of social media through the app is minimal. After completing several

challenges and achieving badges, the app allows the user to add their personal Instagram handle, so that users can connect and make friends through Instagram.

After graduating with this project, I went on to spend three weeks volunteering in Cairo, Egypt. Deciding to embark on such an experience with the University Chaplaincy was something that fit well with Datsuzoku's vision. As a group of 13 volunteers, we lived simply, excluding all non-essentials. This tranquil experience stimulated connectedness, calmness, and harmony within the group, giving us a sense of family and belonging. I feel that this has helped me grow as a person.

Back in Malta, I am planning to take this application further. I have several offers from various software developers, including the University of Malta itself. Many people have encouraged me to make it work so that they can use it in their daily lives. These comments give me the energy and determination I need to make slow travel a reality for others. **T**

Maria Elena Galea is a recent graduate of the Bachelor of Fine Arts in Digital Arts (Faculty of Media and Knowledge Sciences) course.



# I, in the Sky

**Andrea Francesca Bellia**

**T**his summer, I was fortunate to experience the rigorous process of academic research and publishing. Under the supervision of Dr Sandro Lanfranco, I examined the efficiency of using a drone to obtain large-scale vegetation maps, which resulted in a paper in the journal *Xjenja Online*. The study shows how influential technology has become, even in traditionally 'low-tech' fields like ecology.

Without drones, vegetation maps would normally require a large team, and several days or weeks of surveying. The use of drones has enabled us to cut costs, time, and resources. This allowed us to image and analyse vast expanses of land in a fraction of the time. I learnt how to pilot the drone and navigate its software. I also acquired skills such as photographic imaging, image analysis, and flight physics throughout the study – sometimes by trial and error.

Our final product, which was eventually published after several unnerving weeks of peer-review, was the culmination of a long but worthwhile learning process. Although publication gave a short lived sense of accomplishment, this was quickly replaced by the anticipation of further questions we wanted to answer. After spending hours in the sky, I've also realised that looking at familiar situations from a new

perspective enabled me to see things that I would have missed. Another lesson is that in science, you don't just do what's asked; you always do just that little bit more!

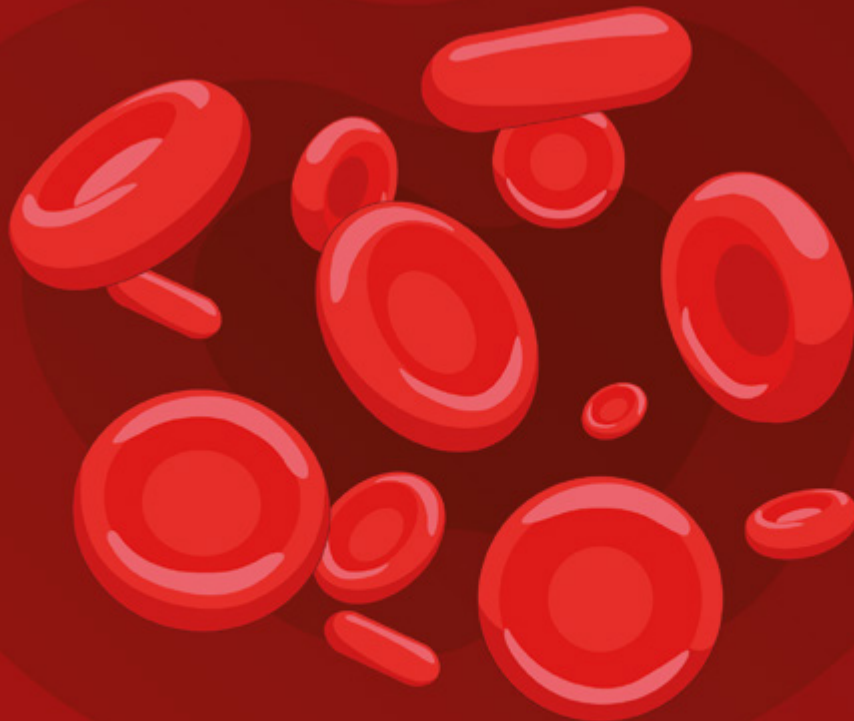
While working on this project, I've learnt how to recognise patterns and interpret them, to query everything and ask the correct questions; ones that are actually impactful and relevant to the world today. But most importantly, I've grasped the beauty of science, which definitely isn't memorising and regurgitating what we've been taught; it's the exhilaration of discovery. Science is an attitude as well as a lifestyle, not something you can just go into half-heartedly – never be afraid to ask 'why?' **T**

**This research was carried out in the Department of Biology (Faculty of Science).**

**Further reading:**

**Bellia, A. F., & Lanfranco, S. (2019). A preliminary assessment of the efficiency of using drones in land cover mapping. *Xjenja*, 7(1): 18-27. DOI:10.7423/XJENZA.2019.1.02**





# Keep Calm and Factor This

## Malcolm Pace

**P**eople suffering from haemophilia, an inherited disorder, will bleed for much longer after an injury, bruise easily, and risk internal bleeding in joints or brain. This is a widely studied condition with unique variations in the disorder to Malta. While pursuing an M.Sc. in Applied Biomedical Science, I have profiled and found the contributing genes in all Maltese patients and compared them to patients abroad.

The genes that code for important clotting factors in blood are located on human sex chromosome X. This means that a woman will be ill only if she receives it from both parents, explaining the much higher manifestations of the disorder among men (men only inherit one X chromosome). In Malta, both factor deficiencies are rare: around 30 to 40 patients by either Haemophilia A or B. There are two types of the disease (factor VIII and IX), and their DNA variations are known and documented. But this study uniquely mapped both types of haemophilia.

My research (supervised by consultant haematologist Prof. Alex Gatt, and molecular geneticist Prof. Joseph Borg) in haemophilia needed an interdisciplinary effort. There are currently over 1,300 unique DNA variants listed in

what's called the Factor VIII database, and 1,095 unique DNA variants in the Factor IX gene – both are stored by the University College London for scientists and health care professionals to study to develop new cures.

I performed extensive DNA sequencing not just for this study but for future studies on more patients to find out if some carry a rare disease without being aware of it. Patients worldwide are starting to have their DNA analysed by Next Generation Sequencing, a cheaper, faster way to read large amounts of DNA. However, the practice is not routine. Once it is, it can greatly improve patient management. If we continue testing these methods in the lab, medical practitioners will eventually be able to identify more individuals at risk of being carriers and refer them to a genetic counsellor to discuss the risks. **T**

**The study was supported by the Endeavour Scholarship Scheme from the Ministry for Education and Employment. I would like to thank the Molecular Diagnostics team led by Dr Graziella Zahra (Mater Dei Hospital) for use of Next Generation Sequencing tools.**





## PURPOSE

Finding one's PURPOSE means giving to others. It unfolds when an individual finds allies and overcomes obstacles. Research gives back to the community. In this FOCUS, we meet athletes aspiring for excellence, engineers making institutions energy-efficient,

and numerous other protagonists driven by a clear sense of purpose towards incredible achievements. But someone's PURPOSE can harm others. Read our stories of urban development, infrastructural planning, and do-good intentions gone sour.



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# THEY ARE THE CHAMPIONS

*Parathletes challenge expectations and break boundaries. Some of them reach their peak performance relatively late in life. Strong-willed individuals also defy diagnoses and social norms, as members of Malta's paralympic movement and para-sport experts tell*

**Daiva Repeckaite** and **Shruti Sundaresan**.

Ask anyone who knows me – losing is not in my dictionary,' para swimmer Julian Bajada smiles. Various twists and turns in his life have only inspired him to take up new sporting challenges. Born with a rare condition affecting his limbs, teen Bajada couldn't resist playing football with his mates between numerous surgeries. When he grew up to become a lawyer and athlete, he completed the Gozo-to-Malta challenge (a 6km swim) as a member of the National Maltese Para-Swimming Team, and took up rowing when he studied in Cambridge. His story resonates with those of numerous local and international parathletes, who juggle professional ambitions with demanding training schedules.

'Inclusion meets Excellence,' proclaims the motto of Malta Paralympic Committee (MPC), – a new para-sport structure officially affiliated with the International Paralympic Committee since 2018. 'It's fine if people with disabilities only engage in sports as a hobby,' says Bajada, the committee's secretary-general, emphasising the benefits sport has for health and self-confidence. Yet for him, these two concepts are essentially the same thing. 'The primary purpose of every parathlete is seeking excellence – competitions abroad, representing

your country, and the pinnacle is the Paralympic Games. They show that there is no physical limit.'

In *Disability in the Global Sport Arena*, a book she edited, Canadian anthropologist Jill M. Le Clair wrote how reforms in the paralympic movement in the 1980s transformed its classification from disability-based to sport-based. This allowed athletes with different abilities to participate in the Games as members of one national team and shed stigmas prevalent in their societies – paralympians identify as high-performance athletes with disabilities, who exhibit exceptional physical strength.

'When [people with disabilities] embark on a sport on a professional level, this will give them a new dimension to their professional lives. The emphasis is on the professional aspect. They can aim high and have dreams to succeed in a world that is so beautiful – which is sport,' says University of Malta's chemistry professor Joseph Grima, who presides over the MPC.

Malta has been participating in Paralympic Games ever since they started in 1960. The first entry was also Malta's most successful. Over the years, Malta's participation was intermittent, but its parathletes have brought home two silver and five bronze medals. In 2008, Malta returned to the Games with runner Antonio Flores, supported by

physiotherapist Nathan Farrugia and sports coordinator Adelaide Silva, both working at Inspire.

Inspire is a non-profit that provides discounted rates to fitness enthusiasts with disabilities. 'In Malta it wasn't that common to see persons [with disabilities] involved in sport. Special Olympics caters for [those with intellectual disability] very well, but for physical disabilities there was a question mark. So people used to come here and ask to become involved in sport in an informal way,' Silva remembers. After Flores, teenager Matthew Sultana competed in para-swimming, and four years later, Vladyslava Kravchenko represented Malta as its first female para-swimmer. According to Silva, para-sport enthusiasts decided that it's time to convene a permanent committee to support parathletes between competitions.



Julian Bajada  
Photo by  
Annabel Zammit

The Commissioner for the Rights of Persons with Disability, who initiated setting up of the new MPC, stresses the importance of movement and sport. He praises the Flexi Training Scheme, also known as the 20/20 scheme, which allows elite athletes to take time off work to strive for results. But much more needs to be done to make sure that athletes receive consistent and tailor-made support. Training coaches is particularly urgent. 'Who would leave his or her job as a lawyer or accountant to take up coaching?' Scicluna asks.

In its first year of operations, the MPC selected four para sport disciplines: swimming, athletics, archery, and wheelchair basketball. In their efforts to direct aspiring athletes to the right competitions for them, they will also have to guide them through the complex classification system that parathletes must adhere to. A qualified team assigns categories to all participants: ten different classes of physical impairment, plus visual impairment, and learning difficulty. This is for the sake of fairness, says Bajada: 'A practical example is a double blade runner vs single blade runner, or a swimmer with no legs vs a swimmer with no arms.' Not every sport discipline is available for each class.

According to numerous reports by the BBC, the classification created space for abuse in several countries, with athletes being artificially fatigued or misdiagnosed to be shifted to higher-severity classes to increase their

chances at winning. Yet these instances from hyper-competitive environments feel distant to our interviewees in the tightly knit local paralympic movement. Currently, Maltese parathletes must be classified abroad.

The next challenge for MPC is to iron out the mechanism for recruiting and supporting parathletes as they train and go through international classification. Commissioner Scicluna emphasises that the next step will be to recruit professionals for MPC administration, as reliance on volunteers risks burning them out. 'We are here to create the infrastructure,' Grima says. He emphasises that supporting parathletes is about excellence and not charity: 'These are real, very vigorous competitions with the same setup and infrastructure as the Olympic Games.'

Bajada concludes the committee's vision: 'We want to double the number of active parathletes every year.' Meanwhile, the current torchbearers of the para-sport movement are striving for personal records – and radiating love for sport every day. **T**

**The Flexi Training Scheme by SportMalta allows athletes likely to represent Malta in international competitions to be compensated for the time they take off their job. More information about the scheme for private sector employees is at [bit.ly/2KpZXvz](https://bit.ly/2KpZXvz) and for public sector employees at [bit.ly/357tPVw](https://bit.ly/357tPVw)**

## How it all began

1948

Sir Dr Ludwig Guttmann, a German neurosurgeon, organised a sports competition for World War II veterans with spinal cord injuries in Stoke Mandeville, England. The games had 16 participants.

1952

Competitors from Holland joined the Games. By 1954, the Stoke Mandeville Games had hosted 14 nations.

1950

The Stoke Mandeville Games grew to 60 competitors and added a new competition – javelin (a type of spear) throw.

1960

The first international Paralympic Games took place in Rome, Italy, with 400 athletes from 23 countries. Ever since, the Paralympics happen every four years.

## Malta at Paralympics

1964

1960

Malta's debut in the inaugural Paralympics: four athletes compete in athletics, table tennis, and snooker. It's Malta's most successful showing to date: two silver and two bronze medals.

1980

Malta pockets three more bronze medals and stops participating in 1984.



Photo by Annabel Zammit

1976

The first Winter Paralympics were held in Sweden, and have been reiterated every four years ever since.

2000

Olympic and Paralympic Games both held in Sydney, Australia.

1989

The International Paralympic Committee (IPC) was established as an international non-profit organisation in Germany.

2008

All bidding cities must commit to host both the Olympic and Paralympic Games.

2012

Para swimmer Matthew Sultana represents Malta in London.

2018

Establishment of the Malta Paralympic Committee and a Council of Maltese Para Athletes.

2008

Malta returns to the games in Beijing, represented by Antonio Flores in Para Athletics.

2016

Vladyslava Kravchenko represents Malta in Rio as the country's first female paralympic swimmer.

2020

Tokyo - to be continued...



## Vladyslava Kravchenko

I'm an accountant by day and athlete by night,' says Vladyslava Kravchenko, who represented Malta in the 2016 Rio Paralympics in three swimming categories. She's also a Malta Paralympic Committee member. 'I hardly get time with friends or family, but one has to create a balance, find time for oneself... it's really important,' she says as we sit down in a Sliema cafe between other appointments she carefully clustered to save time.

In 2016, Kravchenko was Malta's sole representative in the Paralympic Games and carried the Maltese flag at the inaugural ceremony. She was Malta's first female swimmer at the Games. Malta hadn't had a female Paralympian since 1980.

Born in Ukraine to a family of professional athletes, Kravchenko believes she was destined for sports, and started competing in rhythmic gymnastics. When her family moved to Malta in the early 2000s, the competitive element shifted aside, but she would still train.

As a teenager, Kravchenko suffered a spinal injury at a party, which resulted in paraplegia. Unable to return to gymnastics, she started swimming for

her rehabilitation. 'Somewhere during my recovery, I watched a documentary on the London Paralympics, and I just made up my mind to participate in the next edition,' she remembers.

This kick-started her journey in competitive swimming. Her coach went to Istanbul to learn how to train parathletes, and soon she was competing internationally. For a year, Kravchenko also served as the European Paralympic Committee's youth ambassador of Para Sport.

Apart from physical conditioning, Kravchenko emphasises mental strength. She likes to watch documentaries about leading athletes for inspiration and keeps in touch with fellow athletes, sharing tips and discussing issues. But not on social media. 'I guess I am an extinct species — I don't have any social media accounts apart from the public Facebook page which was set up during the Rio Paralympics,' she smiles.

After the Rio Olympics in 2016, the experienced swimmer took up archery. 'It's all about prioritising,' she says. 'I know that I have to train 3–4 times a week and that is a priority, so everything else works around

it. And thankfully, I work flexible hours, which allows me to train in the morning.' While preparing for the Rio games, Kravchenko was part of the Flexi Training Scheme, allowing her to train for competitions while keeping her regular job.

'The biggest motivation behind joining the [Malta Paralympic] Committee is my own journey. Athletes need support from the government, the sports sector, media, and [citizens]. Support has to come in for all [aspiring] athletes,' she asserts. 'In Malta, we have to work to provide the same amount of recognition and support to paralympic athletes as is given to Olympic athletes.'

Kravchenko wants to use her new role to bring more people into sport. 'General awareness of the paralympics is very low. An ambitious goal for us is to reach out to schools,' she says.


Rhythmic gymnastics, swimming, and now archery, there's no stopping her. Ask her about the next sport challenge, and she immediately quips, 'There are so many sports that I'd like to try, but right off the top of my head... skiing is on the bucket list'. Perhaps you'll see Kravchenko zipping down an alpine slope this winter. 





Photo by Joseph Micallef

## Antonio Flores

**M**altese blade runner Antonio Flores has been competing internationally for almost 11 years now. Born with a clubfoot, he underwent corrective surgery at a very young age. 'This surgery made it very difficult for me to participate in sports when I was younger. However, when I was around 14-15 [years old], we had a class race where I managed to come third without any prior training,' he remembers. This success catalysed his future achievements.

Flores started looking for running clubs as a teenager, training with able-bodied athletes. 'It was difficult, but I was still faster than the average individual training in other sports.' He recounts how difficult it was, as there was no established body for paralympic athletes in Malta. The running enthusiast only learnt about paralympic competitions around the age of 17.

That discovery propelled Flores to many international competitions. In 2008 he participated in the Paralympics, which he remembers as 'a magical experience'. He ran next to celebrated blade runner Oscar Pistorius, watched plenty of other sports, and met a swath of inspiring people.

'At that time, I had both my legs,' he mentions. 'However, in 2010, while preparing for the London Olympics, I experienced severe pain in my foot and ankle.' Pain made training difficult. His future in sport looked bleak. After extensive research, Flores, by then a trained podiatrist, took the difficult decision to amputate his non-functional foot: 'To me, it was the most logical option'. He wanted to prioritise quality of life. The next challenge was finding a surgeon when other options were still being considered – a process which took months.


Finally Flores found a surgeon specialising in amputations. After the surgery Flores got a tattoo to celebrate his determination. The athlete benefitted from a free daily prosthesis, but raised the funds for a sports prosthesis himself. After recovery, he went back to his coach. 'He has adapted very well, has a lot of patience with me, and [has done] a lot of research and training with a trial and error method, that has helped me immensely,' Flores appreciates.

With the blade (leg prosthesis), he started off as a slow runner. Every session was more exhausting than the

previous. But hard work, consistency, and persistence have kept him going. Flores takes inspiration from anime. 'Most anime revolve around characters that beat the odds, go through problems, and overcome obstacles. This resonates with me,' he says.

Along the way, Flores got married, graduated, and started working as a podiatrist. He trains six days a week to prepare for his next Paralympic Games. He intends to use the Flexi Training Scheme to reduce working hours when training. His amputation will mean that he will have to be reclassified and compete in the below-the-knee impairment with prosthesis category.

For being there for him along the way, Flores thanks his supportive family: 'They were always highly encouraging and motivating.' They found it difficult to accept the decision to amputate, but they modified Flores' house for his needs.

Even a high achiever like Flores faces insensitive, prejudiced questions about his body. 'The best way to treat a Paralympic athlete is to simply treat them as an athlete,' he suggests. 'Support us in the way you would support any national athlete.' 

# Can passion alone sustain our teachers?

*With a teachers' union slamming pervasive overtime and salary injustice, while some policymakers are contemplating recruitment of teachers from overseas, it's about time we stop and reassess: what keeps teachers going? **Lara Calleja** asks experienced teachers about the sense of purpose in their work.*

want my students to learn primarily for the sake of learning the subject, and not just to pass the exam,' confides secondary school physics teacher Rodney Buġeja, who has 19 years of experience.

It is easy to see that both teachers interviewed talked passionately about a morally fulfilling career.

Asked about the main challenges of teaching, Year 3 primary school teacher Graziella Mercieca, serving for seven years in a state school, highlighted the ever-increasing demands. Demands were high when she started, and they have escalated considerably as the years went by. Malta's very fast-paced changes in society have added new and complicated demands on teachers. What keeps them going?

## **MORE WORK, SAME PAY?**

New students in Malta are coming in who speak neither Maltese or English, a major challenge for teachers and students. 'Although diversity is a great richness, it is clear that some of our classes are so heterogenous

that, from a linguistic point of view, a teacher may have difficulties when they have to address learners,' observes Prof. Sandro Caruana (University of Malta), member of the Council for the Teaching Profession.

Mercieca echoes his words when she elaborates that it is truly challenging for her as a teacher to both communicate as best she can whilst still delivering a quality lesson to all her Year 3 students. According to National Statistics Office data (2017), the number of non-Maltese students more than doubled between 2012/2013 and 2016/2017. Meanwhile, average class size ranged from 16.1 in form 1, private schools, to 25.7 in Year 5, Church primary schools. The World Bank file on Malta (2016) shows that the pupil-to-teacher ratio is 13, just like in Spain, but below those of Portugal, Cyprus, and Italy.

Also, in light of the statistics issued recently by the European Commission, Malta's teaching salary was classified as below average when compared with other European countries; ranking us just slightly lower than Italians' [▶](#)



Many teachers today feel that the profession has become more demanding because of the amount of administrative work it involves.



Prof. Sandro Caruana

teaching wages. With a starting salary of just €22,603 per year, teachers are expected to execute a wide spectrum of duties and skills. 'Undoubtedly, there is a large discrepancy in so far as the justification between the salary received and the amount of work, time, and dedication needed to be a teacher. Not to mention the teachers' personal money spent on resources to be used in the classroom,' says Buġeja.

Teachers 'have to deal with endless frustration caused by uncooperative parents, limited resources, and lack of administrative backup,' mentioned a MaltaToday editorial on World Teachers' Day. Caruana further elaborates that, 'although teachers' salaries are frequently mentioned, and although I maintain that they should be higher both at entry-level and, especially, in relation to incentives for career progression, many teachers today feel that the profession has become more demanding because of the amount of administrative work it

involves.' He stresses that 'such matters and others related to the lack of respect towards the profession are of serious concern, and may actually be more urgent to address than salaries, although improving these is also highly desirable.'

Recently, the government took a step forward in changing the qualification process to become a teacher. Aspiring teachers now have to take a compulsory Master's in Teaching and Learning (MTL) after they have obtained their Bachelor's degree. Veteran teacher Buġeja believes that this was the right step towards improving the standard of education, but both he and Mercieca agree that the current wage is poorly reflective of a Master's degree.

As a reaction to the EU Commission's recent statistics about Malta's low ranking when it comes to teaching wages, responding to MaltaToday's questions, Minister Evarist Bartolo admitted to the shortage of teachers, noting that

the profession 'has to compete with better wages offered by companies in the financial services sector and gaming.'

### LACK OF FREEDOM

The imminent shortage of teachers is not just because of wage concerns. Another discouragement, as reported by the interviewees, is the fragmentation of the teaching profession, for secondary and primary school teachers alike. Mercieca and Buġeja state that teachers, especially in primary schools, cover a variety of subjects. Buġeja specifies that 'teachers should be teaching more specific subjects, especially from Year 4 to 6, rather than generic' ones.

Caruana says that this is negatively affecting students, 'who feel bored at school because they find some syllabi stifling and outdated,' and teachers, who are presented with little incentive to specialise in their subject. 'Regrettably, for a teacher to progress



in their career they may have to abandon class teaching,' he says, before reflecting that it is being addressed by the new Collective Agreement. Still, much more can be done.

Sociology lecturer Dr Angele Deguara (Junior College) says that there is a considerable gap on many levels between teaching post-secondary and teaching primary



**Dr Angele Deguara**  
Photo by Lara Calleja

and secondary classes. For primary and secondary teachers, apart from the salaries, there are also challenges related to lack of resources, lack of teacher autonomy both inside and outside of the classroom, and lack of cooperation from parents, as well as challenging students.'

Secondary teacher Buġeja also points out that the approach in primary and secondary education lacks space to nurture critical thinking among students, even though there were some efforts to change this recently. The idea of 'studying to pass the exam' is still at the base of the current educational system, says Buġeja.

Asked as to what he thinks can change this approach, he suggests having smaller classrooms and restructuring the educational system's teaching approach from traditional education to an inquiry-based-learning system. Rather than learning answers from textbooks by heart, inquiry-based-learning develops the child's ability to pose questions and become more adept at problem-solving to face life and work challenges.

When Edutopia, a website focusing on innovation in teaching, asked teachers what moves them forward every day, its follower Teresa Martinho Marques shared her purpose, 'I am addicted to the challenge of how to get students even more engaged in loving and learning.' But will this commitment alone keep our teachers going day after stressful day? **T**



# Why do we eat?

From feasts to body image issues, eating is more than just staying alive. It makes us feel good and holds communities together. Nutrition and health blogger **Marisabelle Bonnici** interviews researcher **Dr Analisse Cassar** and delves into the science of our attachment to food.

**W**e eat for energy and we eat to live. Social situations shape our food choices: we eat to have fun with friends, or to experience new flavours. Who can resist free food at a social event? Or, after we paid money for an all-you-can-eat, don't we just have to get our money's worth?

Our relationship with food can go much deeper than that when we notice how many disorders are linked to what we eat. Among them are eating disorders like anorexia nervosa, binge eating, orthorexia, and avoidant restrictive food intake disorders.

'Research shows that binge eating disorders are often accompanied by anxiety and depression,' explains researcher Dr Analisse Cassar at the Anatomy Department (Faculty of Health Sciences, University of Malta [UM]). 'Now, which state causes the other is not clear, but it is alarming to note that one in five college-aged women (18–20) are known to have passed through a phase of binge eating, showing a high correlation [between eating disorders and] a stressful environment.'

## FOOD SUPERPOWERS

In primitive days humans used to hunt or gather just enough food to survive. As the world progressed,

advances in agriculture allowed us to grow food with less effort. When food preservation technology came along, produce could be consumed at our convenience. Food eventually became a highly competitive global market, where food scientists are paid to develop tastes and flavours for highly processed foods like bread, doughnuts, and cakes. Food scientists also have a role in research at the University, where they are studying food microbiology and soil composition to grow better crops, amongst a lot of other research.

Studies show that people report eating out of boredom, loneliness, anger, sadness, to relieve anxiety, and also to celebrate. How can



**Marisabelle Bonnici**  
*Photo by Amanda Hsu*

food have all these superpowers?

Cassar confirms that pleasure is at the core of this: 'The caudate nucleus in the brain is responsible for pleasure and promotes compulsive behavior. This is because it responds to dopamine – which is a neurotransmitter in the brain that promotes the feeling of pleasure. Therefore, repeating the behaviour – whether it is compulsive actions or compulsive eating, will lead to a reward – the release of dopamine and the increased feeling of pleasure. So this behavior gets positive reinforcements, and we would want to do it over and over again.'

We associate food with pleasure from early on in our lives. When babies cry and are given milk, they start associating food with comfort. Feeding also generally happens in the arms of a parent, so food also makes them feel safe.

Satisfying hunger comforts us.

But our brains also respond to particular tastes. Pangborn's study on carbohydrate sweeteners found that combinations of sweet and fat are the most pleasurable in the majority of individuals, although this is not universal – because of genetic differences, some are drawn to coffee and others find its bitter taste repulsive.

## **FOOD IN OUR SYSTEM**

The sight of food activates visual receptors in the retina, which fires messages that switch on the sensory parts of the brain. Knowing the process, marketing companies employ food photographers to stimulate our brain with visuals to make us hungry. Think about it – how many times did you visit a restaurant just because its sight triggered a craving for a particular dish?

Our sense of smell is another trigger. Our brain can hold up to 40,000 scents in its memory bank and can associate

scents with feelings. So, you may be walking by a bakery and smell apple pie – this will trigger pleasurable memories of your childhood, and scientists (e.g. Rolls in 2007) have studied the mechanism behind it.

Cassar's research at the UM confirms that brain stimulation can lead to compulsive eating. 'While the caudate promotes compulsivity and the rewarding feeling in eating, it is only one of three areas regulating the urge to eat. The insula [a small region of the cerebrum in our brain], plays an important role in appreciating the taste of food, such as information of taste, smell and texture of food, that ultimately leads to us liking the food we eat. Finally, the hypothalamus [located at the base of the brain, which helps release hormones and regulate body temperature] receives the information from our bodies regarding our satiety [feeling full], ➔



Photography by Marisabelle Bonnici

which is integral for our survival. However, the caudate may override the other factors and lead to a loss of control.'

So far we have only discussed positive triggers. Yet negative environmental factors such as stress also affect eating behaviour, triggering binge eating, and shifting food-choices towards high-fat and carbohydrate-rich foods. To test the effects of stress on brain responses to food, Rudenga, Sinha and Small (2012) performed fMRI brain scans on women looking at a chocolate milkshake, representing sweet, high-calorie 'comfort food.' The level of chronic stress the women experienced boosted the reactivity of the brain to milkshake stimulation. Many people who reach for food to comfort themselves describe food as not only soothing but even addictive. These effects on the brain are what leads to disorder in eating behaviours.

And speaking of women and their soothing milkshakes, we often hear many women say that hormonal changes around their menstrual cycle also affect their eating patterns. But it is not just our oestrogen and progesterone hormones. Our fat cells secrete the hormone leptin, which sends signals to our brain to release energy. Leptin secretion is proportional to the amount of fat we have in our body. Leptin deficiency can lead to constant hunger, resulting in severe overeating and obesity.

Another relevant hormone is ghrelin, which regulates the desire to eat. When we start eating, ghrelin levels fall quickly,

and that is when we feel full and decide to stop eating. When the levels of this hormone are high, we fail to realise we are full – and keep on eating. This translates to not being able to leave food on the plate even though we have satisfied our hunger. Learned behaviours from childhood can help keep ghrelin levels high, which lead to eating disorders when we grow up.

I want to encourage you to think about why we eat. When you decide to eat something, think about why: is it because you are hungry? Are you craving something? Or is it because you are stressed or sad? Practising this with everything you eat can help you eat more mindfully. [T](#)

#### Further reading:

Pangborn RM. (1980) A critical analysis of sensory responses to sweetness. In: Koivistoinen P, Hyvönen L (eds). *Carbohydrate Sweeteners in Foods and Nutrition*. London: Academic Press.

Rolls ET. (2007) Sensory processing in the brain related to the control of food intake. *Proc Nutr Soc.* 66(1):96–112.

Rudenga KJ, Sinha R, Small DM. (2012) Acute stress potentiates brain response to milkshake as a function of body weight and chronic stress. *Int J Obes (Lond)*. 1–8.



## NUTRITION FACTS



### Water

Water contains many trace elements we need, including calcium, magnesium, and zinc. Drinking water instead of carbonated drinks helps maintain a healthy weight and body.

### Carbohydrates

Present in fruit, vegetables, and grains, carbohydrates are an essential and major energy source for the body.



### Protein

Our bodies need protein to build and maintain bones, muscles, and skin. We get protein from meat, dairy, nuts, and beans. We need to eat protein every day, because our bodies don't store it.

### Fibre

Found in fruits, vegetables, grains, and legumes, it is important for bowel health, to maintain a healthy weight, and lower the risk of heart disease and diabetes.



### Fats

Fats help our bodies absorb some nutrients and produce important hormones. They keep the body warm and protect organs.

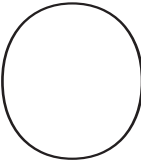
### Vitamins and Minerals

We need all vitamins and minerals to fight infection and stay healthy. Eat a varied and balanced diet to ensure you are meeting your needs.



# MOVING ENERGETICALLY AHEAD

Can the university lead the way in shedding a dependence on fossil fuels? Renewable sources cover just over 7% of Malta's energy needs, which must nearly double by 2030 to implement the draft National Energy and Climate Plan. **Daiva Repeckaite** traces how photovoltaic modules were rolled out on the campus's roofs – and finds that to be sustainable, the community should love their ACs a little less.

 In a satellite view of the University of Malta's (UM) Tal-Qroqq campus on Google Maps, the first thing to stand out is the dystopian dominance of dull car parks, but then the viewer's eye is drawn to glistening

black rectangles. They help the campus make the most of its sun-baked surfaces. 'Eighty percent of effective roof area is covered with PV [photovoltaic] panels,' proudly says Prof. Ing. Joseph Micallef, who chairs the Committee for Sustainability at the University of Malta (C-SUM). His team made a breakthrough by focusing on three areas: renewable energy generation, efficient air conditioning systems, and wiser use of energy-saving lighting.

'There are 14 PV systems in total,' Micallef's colleague, the committee's secretary Ing. Francarl Galea explains. 'We use all the available space,' Micallef adds. While emergence of renewable energy in Malta's energy mix goes back to 2010, the UM's journey towards generating its own energy started in 2011–2012. Boosted by partial funding from the European Regional Development Fund (ERDF), the University installed high-efficiency PV panels using a high density layout. The efforts were awarded with a higher generation capacity than initially planned – 843 MWh

per year, above the target of 750 MWh per year. More green energy means lower carbon dioxide emissions.

ERDF paid over a quarter of the project's cost, which amounted to over a million euros. According to the project closure report, the panels are expected to last for 25 years after the purchase, with very low maintenance costs. Micallef, whose team collects energy monitoring data from all buildings, estimates that the solar panels generate around one-sixth of the university's energy needs.

'With 1 MW peak power, ours was one of the biggest photovoltaic parks in Malta when completed in 2015,' the engineer says. Peak power is the maximum electric power that can be generated when sunlight hits the solar cells perpendicularly, the temperature of solar cells is 25°C, and other conditions are satisfied. This is enough to power 5,000 PCs.

Still, the share of sustainable energy would be higher if the campus could reduce its energy demand as well. But where do we start? Micallef and his team were in for a surprise when they started energy audits for their ambitious projects to transform the UM's energy mix: 'The main consumer was the library!' An inefficient air conditioning system was never switched off. Barely visited sections of the building were awash

with inefficient lights. Artificially cooled air streamed through its windows. 'It's partly because people were not careful,' the C-SUM chair admits.

Starting from 2012, the University's Estates and Works directorate set off to replace inefficient old chiller systems with a state-of-the-art variable refrigerant flow (VRF) technology, complete with ethernet-accessible control units to enable centrally controlled temperature limits and switching cycles. Thanks to centrally controlled VRF systems, minimum and maximum temperature settings could be limited.

Galea points out that some units and laboratories, such as in engineering, the BioBank, biomedical research, and aquaculture research, have different requirements, so this was taken into account when creating an energy saving regime. Thanks to the energy saving measures, the library slashed its AC energy consumption by 60%



Ing. Francarl Galea

from 2007 levels, despite longer opening hours. A similar exercise was carried out in the engineering building, saving 65% in AC energy.

As the scheme rolled out to other buildings, the next challenge was to question the Mediterranean love for a freezing AC. Micallef and Galea admit initially receiving a few objections: some staff members complained about the minimum temperature limit as they found 23 degrees uncomfortably hot. Yet when the team checked the location of the complaints, in some cases they found open windows, leaking the precious cool air outside. 'Every additional degree of cooling results in a six percent increase in energy consumption,' Micallef reminds.


It is a growing concern around the world that ACs are power-hungry. As detailed in *The Guardian*, cooling a room with AC consumes more power than running four fridges. In the US, mass-producers and builders promoted the mentality 'any problems caused by hot climates, cheap building materials, shoddy design or poor city planning could be overcome' with more AC units.

The university's next priority was efficient lighting. LEDs have replaced fluorescent tubes and floodlights throughout university – in total 12,500 inefficient light fittings were replaced with LEDs in offices, lecture rooms, and laboratories, with partial funding from the ERDF. According to the project closure report, this allowed the university to save between 50% and 60% of energy for lighting.

Lighting became sensor-controlled in a number of buildings. For instance, in the Library building, light now automatically dims when there

is no one around. Other sensors were installed in lecture rooms, laboratories, and restrooms.

'As a result, a number of buildings now have their annual primary energy consumption at levels below Malta's national threshold for nearly zero energy buildings,' Micallef explains (each country sets its own threshold). Primary energy is the total energy needed to power buildings – including the resources for its generation and transmission.

Despite the construction of several buildings and extensions on campus, the university's energy needs have remained below the 2014 levels thanks to these efficiency measures and the use of renewable energy. Micallef, Galea, and their colleagues continue raising awareness and meticulously monitoring how energy goes in and out, using new sensors. Micallef outlines his ambition, 'The goal is to have a net-zero-carbon campus.' 



Prof. Ing. Joseph Micallef



**The Most**  
**Instagrammable**

**Spots in Valletta**

WHAT TO SEE & DO

**IN A DAY**

Top attractions in Valletta



# Tourism in Valletta: have we gone too far?

*Residents are generally willing to put up with the inconveniences caused by tourism because of its financial and reputational benefits. But is there a tipping point when tourism and leisure become unbearable? Having focused on Valletta as an urban planner, activist, and researcher, **Dr John Ebejer** warns against the risks of overtourism.*

Valletta was always a subject of public debate. In the 1990s, it was bleeding residents, undergoing a takeover by offices, deadlocked traffic, vacant properties, and deteriorating structures. During the day, it was full of life with shoppers, office workers, and residents, but it was far too quiet after sunset, turning into a ghost town. Today, Valletta's issues are different. Valletta has become tourists' Instagram darling – but is it becoming unliveable?


Let us zoom out a little. My involvement with Valletta started in the mid-1990s when I was working on local plans at the Planning Authority. Before the year 2000, public investment in urban conservation was limited to minor restoration, with noteworthy projects being few and far between. Moreover, scarce investment in private properties created a gradual, downward spiral and increased dilapidation.

After the year 2000, authorities consolidated their efforts to bring about positive change in our capital city. They extended pedestrian areas to encompass the main spaces of St George's Square, Merchants Street, Castille Square, and Triton Fountain. Moreover, the City Gate project, by renowned architect Renzo Piano, provided new pedestrian spaces at Valletta's entrance. Before 2005, I distinctly remember instances of tourist groups crowding

onto narrow pavements on Merchants Street, blocking other pedestrians, while listening to their guide. Doing away with car traffic created pleasant spaces, allowing visitors to better appreciate Valletta's urban heritage.

To be successful, pedestrianisation needs a holistic transport strategy. Vehicle access was controlled through an automatic payment system for all non-residents parking in Valletta, coupled with a park and ride system, as well as extensive parking outside Valletta. Bus terminus facilities got a facelift, and a passenger lift connected the waterfront to the city centre.

The government invested heavily in Valletta. The most notable was the City Gate project with the new parliament building, an open air performance space and a new entrance to the city. Other important projects were the Centre for Creativity (*Spazju Kreattiv*), Valletta Cruise Passenger Terminal, Fort St Elmo, the Fortifications Interpretation Centre, extensive restorations of fortifications, *MUŻew Nazzjonali tal-Arti (MUŻA)*, and the Old Valletta Market. Coupled together, they gave Valletta the facelift it needed.

Three primary motives drove major public investment in Valletta. Firstly, Valletta is a World Heritage Site and includes a concentration of historic buildings and monuments. This imposes a moral obligation upon the authorities and society to take good care of our urban heritage. Secondly, 



Photos by Dr John Ebejer



Dr John Ebejer

these investments aimed to make Valletta attractive for people to live and work. Thirdly, Malta's tourism policy shifted to attract cultural tourists, while retaining its market share as a sun and sea destination.

Public investments gave people added confidence to invest in Valletta properties, either for private residential or for commercial use. When Valletta was designated as a European Capital of Culture for 2018, private investors realised the opportunities that a revitalised Valletta offered. Many historic private properties

were reborn as high-end residences, boutique hotels, short-term tourist rentals, and catering establishments.

Tourism is typically considered to benefit host communities because it generates income and employment. But when the level of intrusion and inconvenience becomes excessive, like in Venice, Barcelona, and Amsterdam, it becomes overtourism. The impacts from overtourism are overcrowding in the city's public spaces, traffic congestion, excessive touristification, inappropriate visitor behaviour, and displacement of long-term residents.

Global changes in the tourism industry impacted the dynamics of Malta's tourism sector. In 2006, Malta opened up to low cost airlines. Independent online booking made travelling easier and cheaper, resulting in a more diversified and less seasonal industry. For Malta, that meant moving away from dependence on tour operators. In 2006, two of every three tourists used tour operators. Today that figure hovers around one in three. With increased seat capacity and the ease of independent travel, the number of arrivals ballooned from 1.2 million in 2006 to around 2.6 million

in 2019. Of course, more tourists to Malta signifies more visitors in Valletta.

The demand for boutique hotels and short-term rental accommodation has pushed property prices up. People with family roots in the City are moving out, replaced in part by new and somewhat detached residents. Ongoing gentrification is a process of change that may result in the loss of community-based social and cultural activities. On the other hand, new residents bring cultural diversity and much needed investment into the capital. Properties which would otherwise decay are restored and brought back into use.

Increased tourism activity has reduced Valletta's liveability in many ways. Over the last two decades, more bars and restaurants have opened and extended their working hours. Many catering establishments have sprawled onto the streets, placing tables and chairs outside their premises. Their pleasant ambience for diners and passers-by is a source of noise and nuisance to residents in the immediate vicinity, more so in the summer when locals leave their windows open. Apart from noise, external tables and



chairs also have aesthetic implications. The canopies and umbrellas that go with them are often visually intrusive and undermine the aesthetics of the historic environment. In some streets, tables and chairs impede the flow of pedestrians, resulting in crowding. Weak enforcement exacerbates the problems.

On top of this, building alterations and additions are compromising the value and integrity of historic buildings. The Valletta Local Council, supported by three environmental NGOs, appealed for urgent action to safeguard the city. In a joint press conference on 28 January 2017, they expressed concern that Valletta was undergoing ‘an unprecedented barrage of new developments, many of which are not sensitive to the values and fragile nature of the historic setting’. They argued that ‘the intensification in activity is giving rise to new threats to the liveability of the city and to the safeguarding of its Outstanding Universal Value, which is the basis of its World Heritage Status.’

Valletta is home to a resident community with a strong social and cultural life. Living in Valletta has always been subject to some inconveniences, but these have

increased in recent years. This is problematic as it will further deplete Valletta’s resident community, which lost one in seven residents over 10 years and currently stands at around six thousand.

Current tourism impacts on Valletta are manageable, but the trends are very worrying, not least because the authorities seem focused on pushing forward the commercialisation of Valletta without considering the detrimental effects on residents. Unless corrective action is taken, twenty years down the line we may be facing the worst case scenario of a Valletta with parishes that can no longer function for lack of residents. We could end up with Valletta’s piazzas and streets becoming open-air restaurants, with little or no space for pedestrians. Valletta may become a leading centre for Malta’s night-time entertainment, but this would be a departure from its cultural and heritage vocation.

To manage unwanted impacts, relevant public authorities must genuinely consult with Valletta residents and other stakeholders. Together, they need to find balance

in safeguarding the liveability of Valletta while tapping its tourism and heritage potential. **T**

*What do you THINK? What future lies ahead for Valletta? What needs to be done for a better Valletta? Post your comments online on THINK or write to me on [john.ebejer@um.edu.mt](mailto:john.ebejer@um.edu.mt).*

#### Further reading:

**Ebejer, J. (2016) Regenerating Valletta: a vision for Valletta beyond 2020. In Ebejer, J. (ed.), Proceedings of Valletta Alive Foundation Seminar: Valletta Beyond 2020, 35–44.**

**Ebejer, J. (2019) Urban heritage and cultural tourism development: a case study of Valletta’s role in Malta’s tourism. Journal of Tourism and Cultural Change, 17(3), 306–320, DOI:10.1080/14766825.2018.1447950.**

**Ebejer, J.; Smith, A.; Stevenson, N. & Maitland, R. (2019) The tourist experience of heritage urban spaces: Valletta as a case study. Tourism Planning & Development. DOI:10.1080/21568316.2019.1683886.**

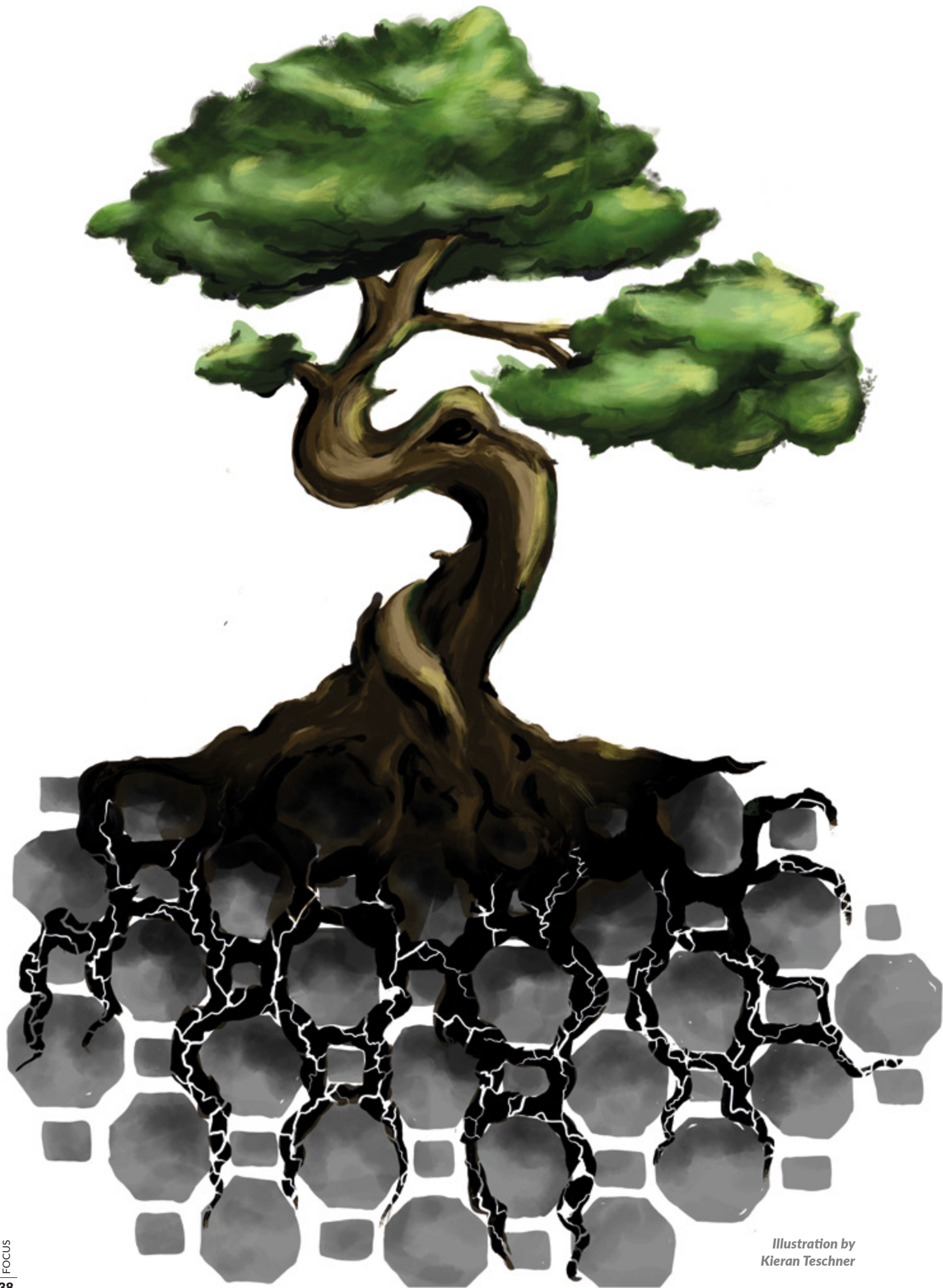


Illustration by  
Kieran Teschner



# Routes over roots

In Malta, protests against plans to remove a row of iconic trees drew unprecedented crowds (see THINK Issue 29), leading authorities to promise to plant new trees and replant those found in the way of planned infrastructure projects. **Emma Clarke** looks into the science of tree replantation to see how feasible this would be.

July saw hundreds take to the streets of Attard, in the centre of the island of Malta, to protest the approval of the Central Link project, which will increase road space at the expense of over 500 trees. In the same month, a €20 million underpass project was announced in Santa Luċija. Local residents and activists raged as green crosses began appearing on trees earmarked for removal, and authorities severely pruned olive trees lining the Santa Luċija jogging track to prepare them for transplantation. Later, the *Times of Malta* reported eyewitness accounts of olive trees being trucked to a field in Dingli, where they remained for just a few days before being returned to their original location in Santa Luċija.

A spokesperson from Infrastructure Malta had explained to the *Times of Malta* that the trees were only moved to the Dingli field temporarily, until the promenade at Santa Luċija was complete. The Environmental and Resources Agency (ERA) approved this project, which is set overall to involve the uprooting of 550 trees – including native

species important for the ecosystem. After an environmental impact screening process, the agency concluded that the project's impacts were 'unlikely to be significant', and so the transplantations began without further investigation.

Infrastructure Malta also emphasised to the *Times of Malta* that though trees would be uprooted, none would leave the locality. In an interview with THINK, a representative of Infrastructure Malta stated that in-house arborists supervise all transplantations, ensuring that the new location was conducive to the tree's survival. In addition, the agency plans to plant an additional 1,257 trees at the Majjistral Park, Mellieħa, and the Magħtab Park, Naxxar. The ERA's *Guidelines on Works Involving Trees* set the minimum number of trees to plant in compensation for every tree lost, from one tree to replace non-protected and invasive trees to 40 to make up for the loss of a protected tree older than 50 years. An applicant that does not compensate in-kind can instead pay €500 per tree (whereas a single tree can cost more) to the Environment Fund, and Infrastructure Malta chose a mix of these options. ➔



**Prof. Joseph Buhagiar**  
*Photo by Sarah Zammit*

These assurances did not convince local residents and environmentalists. Ryan Vella, a founding member of the NGO Għaqda Siġar Maltin, particularly criticised the choice of timing – July. ‘You do not need to be an expert to know that trees should not be uprooted in the middle of summer. The right conditions are during winter, while the tree is dormant, uprooting it properly, keeping the roots intact, and replanting it somewhere where it will be watered properly and consistently.’ As per ERA’s Guidelines, ‘Any transplanting shall be carried out between autumn and early spring (October to March),’ and the applying authority must issue a three-year bank guarantee of €500 per tree as a pledge to monitor that the tree survives.

‘If that is followed, then there is a good chance that the transplanting will be successful. If they are just left to their own devices and without maintenance, they will die. As an NGO, we know of some cases and places where trees were transplanted, then simply left there, meaning that they eventually died,’ Vella remembers.


ERA’s guidelines advise that ‘transplanting after the spring growth flush and through summer shall be avoided altogether particularly for deciduous trees due to water stress and since the plant will likely not recuperate from the transplanting.’ However, when asked by the *Times of Malta* why the trees were moved in July, a spokesperson for ERA said that transplanting

the trees in summer did not necessarily go against the guidelines if it occurred in ‘exceptional circumstances’.

Witnesses were dismayed at how severely the trees were pruned prior to transplantation. During uprooting, the tree canopy needs to be reduced to minimise water loss from leaves, which can dry up the trunk. However, despite ERA’s guidelines stating that no more than 25% of the crown should be removed, photos from the site at Santa Luċija show that the pruning was more extreme than this, and in some cases no crown was left at all. In response to the ensuing criticism, ERA have launched an investigation into these works.

Researcher Prof. Joseph Buhagiar (University of Malta) believes that a fundamental shift is needed in the population’s attitude towards nature, especially when it comes to prioritising the protection of mature, indigenous trees. ‘If you have a pine that is 100 years old, to me, [cutting it down] is like killing my grandmother. The architect should be working around to accommodate the tree.’ He notes that there is an antiquity law, which should provide protection to trees that are over 50 years old. However, this law can be overridden if a project is considered a priority. ‘Even a minister should not have that power. The minister should be informed that this is something really precious.’

Infrastructure Malta have emphasised that they have planted thousands of new trees to compensate for the



*'You do not need to be an expert to know that trees should not be uprooted in the middle of summer.'* — Ryan Vella

transplantations, highlighting that both the Central Link and Santa Luċija projects led to a net gain in the number of trees. Ryan Vella refutes this, saying that more importance should be placed on the maturity of trees, not simply the quantity: 'The problem is, it takes many years for a tree to mature. It is true that there will be more trees planted; but one still needs 20 years for these trees to mature and provide shade, shelter for birds, and, obviously, oxygen and clean air.'

In many cases contractors transplant mature, indigenous trees in order to avoid losing them from the locality, but Buhagiar explains that this process is especially risky for native species, which tend to have deep, well-established root systems. 'It's not simply a case of pruning a one-meter radius around the tree and thinking that it's going to survive, there's no way,' he says. 'For many indigenous trees the root systems are


very deep and very complex, so proper transplantation is a process that takes time and can be very expensive.' A conifer, for example, takes a year to properly transplant, he says, a timescale incompatible with the tight deadlines of construction projects.

But if the root system is overly reduced and the process is rushed, the tree will likely die shortly after being moved. 'Most often you end up with these skeletons of transplanted trees. You see that the bark has come off and there is no fresh growth,' he observes.

Not all trees are equal. Widespread planting of invasive, non-native trees such as common fig (*Ficus Carica*), favoured for their rapid growth, constitutes 'a huge headache,' says Buhagiar. Unlike indigenous trees, the *Ficus* exploit the surface layer of the soil, making it disruptive to pavements and other structures. 'These are giants, which means that you have to employ brutal cutting and pruning techniques. So many

trees were planted which were not suited [to the local environment], either growing too fast or disrupting the infrastructure around them.'

In October, works on the Central Link project were suspended to allow the Environmental and Planning Review to hear all sides after a thousand protesters braved the July sun to tie themselves to the trees facing the chop. Adults and children waved colourful placards and moved to block the road, chanting in Maltese 'viva s-siġar – hey, hey,' meaning 'long live the trees.' 'We have a voice,' shouted lead organiser Sasha Vella 'and we are using it to stand up for our environment.'

Buhagiar hopes that such public action makes a difference. 'You cannot replace something as precious as a mature tree with even a thousand saplings,' he says. 'We want to leave something for the future. I want to leave something for my grandchildren.' 

# Repurposing the Economy

**Dr Jonathan Spiteri** spent the last three years talking to businesses from across Europe about the circular economy. He found that better policy would help them embrace the idea of less wasteful production.

The circular economy has slowly seeped into public discourse worldwide. Supporters include the governments of Denmark and the Netherlands, as well as organisations like the Ellen MacArthur Foundation. One of the major early adopters is Philips, the tech giant. The global textiles industry has also taken significant strides fuelled in part by price volatility in fabrics like cotton, which will worsen with climate change. Public policy initiatives were set rolling through the European Union's 2015 Circular Economy Action plan.

So far, so good. And yet, the circular economy is still largely associated with waste management or recycling. In fact, even the EU's Action Plan, for all its good intentions, places undue emphasis on EU-wide recycling targets and goals. Recycling is necessary, but it is a costly endeavour, both financially and environmentally. Recent estimates from global commodity markets indicate that recycled plastic is currently around 8% more expensive than virgin plastic per metric tonne, on average (see S&P Global Platts, 2019). Plus, is it really worth shipping recyclable waste halfway around the world, where it is sometimes incinerated?

Recycling is a mere sliver of what the circular economy is meant to be about. The focus should be on waste reduction,

reuse, and repurposing or repair, with recycling a last resort of sorts. The uncomfortable truth is that a circular economy necessitates a radical rethink of our economic system. The onus should not be on resource efficiency, but on minimum usage and extraction. Products must be built to last, and their components must be recoverable for reuse or repurposing (or recycling, for that matter) at their end-of-life.

This shift requires businesses and their employees to learn new skills to design our products and supply chains to fit in with this paradigm. Consumers, too, will need to re-learn old skills like repair. From a business perspective, the time for hollow sustainability mission statements and tokenism is over, especially as global consumer demand for green businesses and products continues to rise unabated. Instead, if businesses want to ensure durability, serviceability, and recovery of raw materials, and successfully collaborate with some of the industrial leaders, they will have to adopt circular economy business models.

Paradigm shifts are daunting but they turn out to be good for business. Over the last few years, together with colleagues from the University of Malta and across Europe, I have been part of the Route 2 Circular Economy (R2π), a Horizon 2020 EU-funded project that focuses on facilitating the shift towards circular economy business models. We

surveyed over 100 businesses, and held detailed interviews with another 22 businesses, spanning various sectors, sizes, and countries. A common thread emerged: adopting a circular economy business model can yield significant, tangible business benefits, from lower operating costs to reduced risks and improved customer retention.

What's more, with rising environmental awareness among citizens, coupled with technological advancements that facilitate such collaborative business models, there has never been a better time to go circular. For example, established fashion brands like Zara are developing their own sustainable natural fibres, with the aim of using 100% sustainable materials in their products by 2025. New ventures like Phenix in France have emerged to combat food waste while finding an alternative value chain for such produce.

This by no means suggests that the various industry barriers are gone. Resistance to change within

businesses, as well as the stigma associated with using remanufactured products or components, continue hampering progress towards circularity. This is where governments can step in. Authorities can penalise the negative side-effects associated with existing linear business models, like resource depletion and landfilling of waste. They should also assist businesses seeking to go circular



**Dr Jonathan Spiteri**  
Photo by James Moffett

by tapping domestic and EU funds to invest in circular projects. The dawn of digitisation, including the implementation of distributed ledger (blockchain) technologies, should assist in closing the loop by enabling businesses and governments to track products and components throughout their life cycle.

The stakes have never been higher. In Malta, 92% of municipal waste is landfilled (National Statistics Office), despite a lack of space to store it. Internationally, the Great Pacific garbage patch, filled with marine debris, continues to grow after reaching the size of Texas. All of us can do our bit to facilitate this transition to a circular economy by holding businesses and governments to account, and adopting circular practices in our daily lives. **T**

**This project has received funding from the European Union's Horizon 2020 research and innovation programme. More information about the findings at R2Pi Horizon 2020: [www.r2piproject.eu](http://www.r2piproject.eu)**



**VOLUNTOURISM: SERVING  
YOUR INSTAGRAM, YOUR CV,  
OR PEOPLE IN NEED?**

Policy strategies laud volunteerism, but critics frown upon ‘voluntourism’, which is travelling to so-called developing countries for short-term voluntary work. University of Malta researcher **Dominik Kalweit**, who is also a director of the Maltese NGO Kopin, and researcher **Dr Stefano Moncada**, unpack this phenomenon.

When a Maltese travel agency started advertising opportunities for tourists to cuddle Kenyan children with disabilities on the way to their safari (not in these words, but you get the gist), the for-profit sector ventured into territory which was previously solely populated by charitable organisations. Around the world, there is a whole industry of volunteer tourism, asking young people to pay for – in the advertisers’ words – a life-changing experience



**Dominik Kalweit**  
Photo by **Guriana Lozano**

that will also look good on their CV.

According to a 2010 European Commission study ‘Volunteering in the European Union’, around 12% of Malta’s population engage in voluntary work, through involvement in an NGO or individually. The number is laudable, reflecting what Malta’s National Strategy on Volunteering (2019–2024) calls ‘a positive, natural and spirited way to realise meaningful human interaction, collaboration, and purposeful contribution’.

You may have heard of the *fish versus rod* metaphor. Duncan Green of Oxfam takes it further, suggesting that someone’s *right to fish* – access to fundamental resources, nutritious food, and living in dignity in a safe and healthy environment – is a human right. The human rights-based approach goes far beyond addressing a particular short-term need. It is about equity, social justice, and sustainable development.

Some of Malta’s main non-governmental development organisations (NGOs engaging in so-called developing countries) emphasise that their mission is about human rights and not charity. They also work to challenge prejudice, whereas

stories from voluntourism experiences typically only reinforce the stereotype of poor, uneducated Africans. Images of volunteers hugging poverty-stricken children do not help. Without critical challenges, such accounts might fuel xenophobia and racism, contributing further to the already toxic discussions around irregular migration and asylum, including in Malta.

Despite these effects, it is difficult to criticise voluntourism because it is often well-intentioned and responsive to emergencies or needs in the short term. On a website on sustainable development, the United Nations affirms that ‘volunteerism strengthens civic engagement, safeguards social inclusion, deepens solidarity and solidifies ownership of development results. Importantly, volunteering has a ripple effect.’ But we need to ask ourselves: are the *ripples* always desirable?

When volunteer amateurs engage in work that would require hiring professionals, it may pose risks to their own and to the intended beneficiaries’ safety, whilst also pushing out local professionals. Professionals could be recruited from,

or, if not available, be paid to live in, the beneficiary community and do their job. If they could earn a living and spend their income locally, this would reduce the need for charity.

Any organisation sending volunteers abroad must address ethical concerns: are volunteering tourists trained to engage with the community in a way that is dignified and not victimising, patronising, or overpowering? How will the volunteer communicate, especially in times of social media? Will they respect national data protection laws and, equally important, ethical communication rules? The Code of Conduct on Images and Messages by the Irish NGO Platform *Dóchas* provides some excellent guidelines, but a simple rule of thumb helps: 'If the person who I intend to portray was me, my child, or someone dear to me, would I be happy with the portraying?' If the answer is negative, just don't post it.

Volunteering with children, both at home and overseas, is a particular concern. Anyone working with children must be aware of, trained on, and fully adhering to a child's rights, as defined by UN Convention. Children can emotionally attach to short-term



**Dr Stefano Moncada**  
Photo by James Moffett

*Children can emotionally attach to short-term volunteers, and departure will inevitably lead to a rupture in their lives, which can be harmful. Continuity of care is much better for their wellbeing.*

volunteers, and departure will inevitably lead to a rupture in their lives, which can be harmful. Continuity of care is much better for their wellbeing.

When voluntourism contributes to the classical picture of the *white saviour*, it distorts the discussions that really should be taking place: about unsustainable development, which goes hand-in-hand with forced migration; and about global economic and financial systems feeding on exploitation and inequality. We must radically rethink sustainable development cooperation; addressing absolute poverty and food insecurity; lack of access to even basic rights, goods, and services; bad governance and oppression; and the impacts of global warming.

There are many better ways to make a difference in other people's lives than voluntourism. You do not need to helicopter yourself into an unfamiliar context. For example, you can support development NGOs in Malta through a donation or by getting involved. Whatever your background, skills, and capacities, you can help them deliver their sustainable development projects on the ground more effectively through solidarity networks. If you are looking for a direct experience with people, consider becoming socially active in Malta, for example, with food banks, refugee support organisations, organisations working with children with difficult family backgrounds, or women's rights organisations supporting

domestic violence survivors. Choosing an organisation, pay attention to whether it provides you with the necessary support to make a positive, sustainable impact on others' lives.

A volunteering experience overseas isn't necessarily bad, as long as one ensures that its outcomes and impact are dignifying and the goals are set by the host communities themselves rather than donors. The volunteer's CV or ego should never be the primary reason for the trip. And if you feel you absolutely have to snap a photo, don't place yourself in the centre. Make it a dignified, positive experience for everyone involved. **T**

#### Further reading:

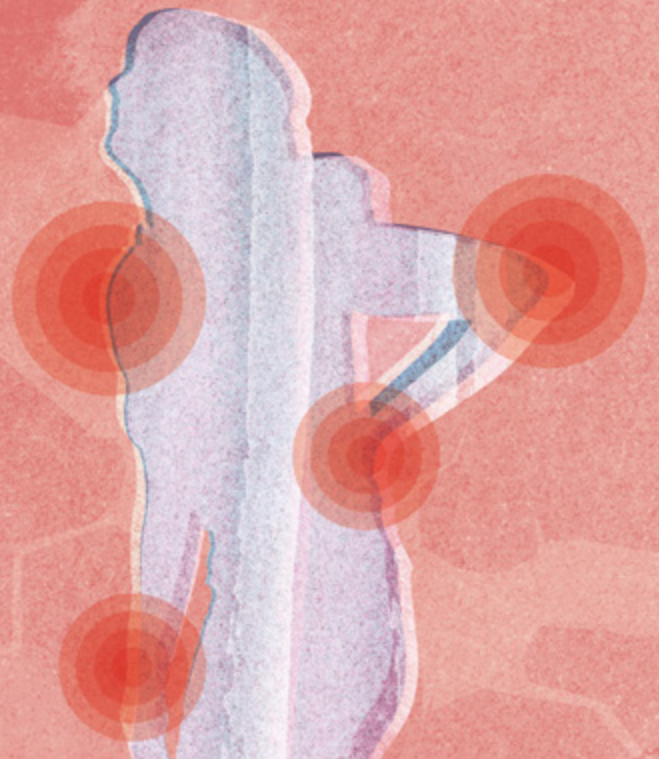
**Green, D. (2008), *From Poverty to Power: How Active Citizens and Effective States can Change the World*. Oxfam International. See also the Oxfam blog "From Poverty to Power": <https://oxfamblogs.org/fp2p>**

**GHK (2010), *Volunteering in the European Union*. European Commission: [https://ec.europa.eu/citizenship/pdf/doc1018\\_en.pdf](https://ec.europa.eu/citizenship/pdf/doc1018_en.pdf)**

***Dóchas, The Irish Association of Non-Governmental Development Organisations (2014), The Illustrative Guide to the Dóchas Code of Conduct on Images and Messages: <https://bit.ly/2Nsr1wd>***



# You look just fine – when pain is invisible



*Fibromyalgia is a chronic disability which manifests with aches all over the body and profound fatigue, including headaches, sleeping problems, and difficulty concentrating. **Miriam Calleja** talks to people who try to make the most of their lives while being held back by this condition.*

Have you ever stayed up studying (or partying?) for most of the night and slept just a couple of hours? You might wake up feeling not so bad, but later you notice you're tired and can't quite focus. Then perhaps some nausea sets in. You are so exhausted that you might collapse.

This is how a fibromyalgia and myalgic encephalomyelitis (also known as Chronic Fatigue Syndrome or CFS) sufferer describes her day-to-day life. You might recharge on resting, but for a person with fibromyalgia or myalgic encephalomyelitis, the battery never charges.

Christabel Cutajar (25) is studying psychology at the University of Malta (UM) and is a fibromyalgia sufferer. She struggles with accessibility and finds that current adaptations of the learning environment don't offer equity to students like her. Together with a fellow sufferer, she is working to raise awareness and achieve the crucial changes she needs.

## 'MY BODY JUST BROKE'

Since fibromyalgia and myalgic encephalomyelitis are diagnosed by elimination of other potential ailments, misdiagnosis is common. This means that further investigations are not made, or delayed, with detrimental and sometimes fatal consequences for the patient.

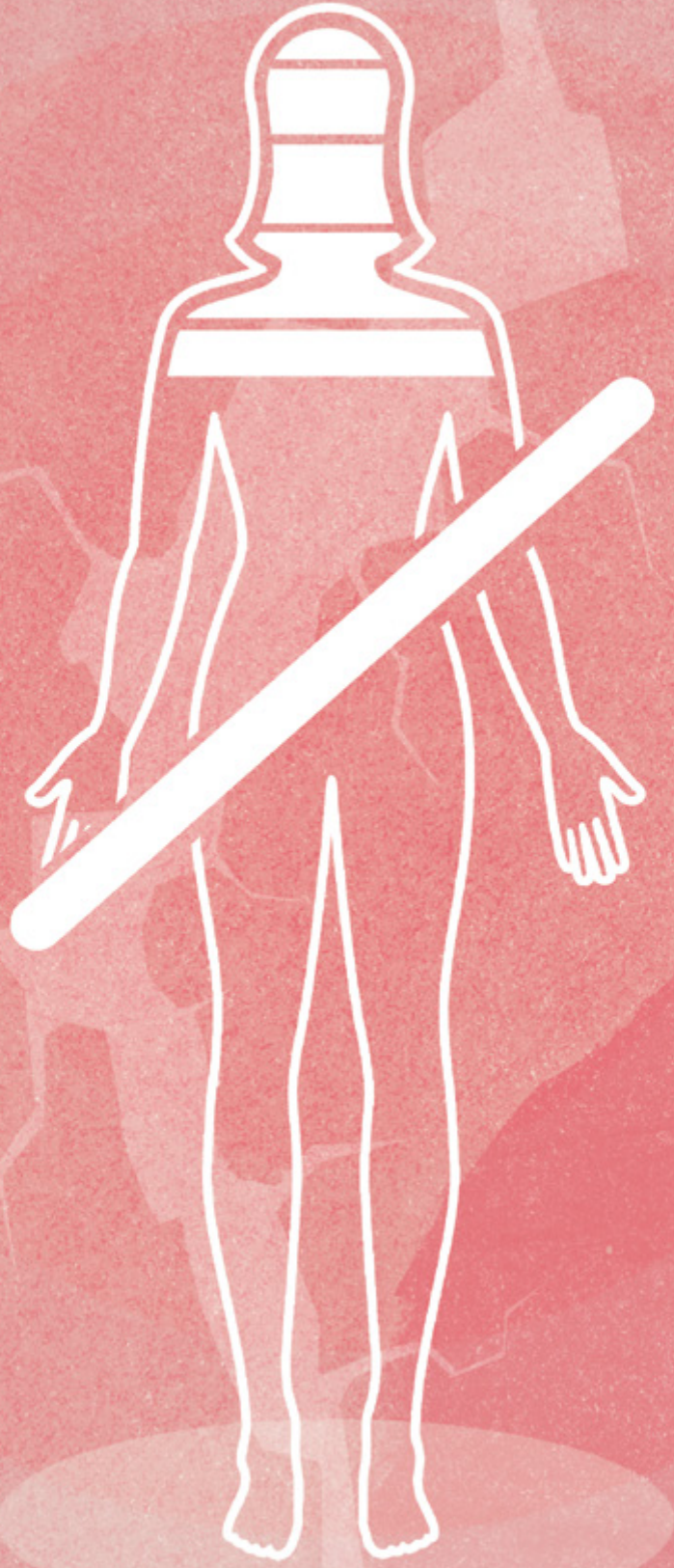
Fibromyalgia affects 10 times more women than men. It has baffled medical and health experts for

decades because it does not show up as abnormal in blood tests or scans. Due to the lack of 'evidence' some healthcare professionals do not take these ailments seriously, and diagnosis is delayed or missed.

Myalgic encephalomyelitis is a devastating multi-system illness that causes dysfunction of the neurological, energy metabolism, immune, and endocrine (hormonal) systems. It is estimated that up to 25% of patients may be housebound or bedbound. Like in fibromyalgia, there is a spectrum of severity, and sufferers may feel different daily. A single stressful experience may have an effect that lasts for days or weeks.

Although numerous UM students have researched the lived realities of fibromyalgia and myalgic encephalomyelitis, local peer-reviewed research on these conditions is scarce. Martinique D. Vella-Baldacchino, Matthew Schembri, and Mikhail Vella-Baldacchino, writing in the *Malta Medical Journal*, pointed out that Malta only recognised myalgic encephalomyelitis/CFS as a disability in 2011, although the effect on quality of life is comparable to AIDS.

The initial onset of fibromyalgia normally follows a trauma and that of myalgic encephalomyelitis often follows an infection. 'Everything was fine and suddenly my body just broke,' recounts Rebecca Camilleri (35), who suffers from both fibromyalgia and myalgic encephalomyelitis after glandular fever. ➔



As she combats the condition, she shares how ignorant onlookers have dismissed her pain: you're lazy, you're being dramatic, or you're a hypochondriac. In other words – you're faking it. But how many people would switch from having an active work and social life to depending on others constantly, physically and financially, for the sake of faking it?

In this year's budget, the government has added fibromyalgia and myalgic encephalomyelitis patients to the list of those eligible for assistance with their disability. For Rebecca and Christabel, the worry here is the mention of 'stringent testing'. With invisible disabilities such as these, the Commissioner for the Right of Persons with Disability Oliver Scicluna suggests that 'as a state, we should now assess such individuals on a social impact level [i.e. what they can and cannot do in the society] rather than just from a medical point of view. Methods such as the ICF, or International Classification of Functioning, and other assessment codes can be used.' Invisible disabilities may not have physical parameters to measure or consider, so how are authorities to test their impact and judge what these patients need? If assistance is given to those who work, what happens to those who are too unwell to have a steady job?

## PAIN AND STIGMA

'I need to plan to pre-plan when and what I'm going to do,' Rebecca explains. If she is planning to wash her hair on a given day she would not have the energy to go buy bread and milk that day. Fear is a constant, a norm. 'If I overexert myself, will I wake up paralysed tomorrow?'

This is because the body of a patient with myalgic encephalomyelitis does not deal with exertion in the same way every time—numerous studies have found that blood flow to the brain and heart, and oxygen uptake by haemoglobin are reduced in these patients. The overall picture is much more complicated and involves various systems in the body.

A cold shower can cause excruciating pain. Some patients can feel a light touch to be like burning. To others, there may be days when the simple touch of clothing against their skin can be extremely uncomfortable.

In an academic setting, how, then, does a patient get from one lecture to another in a few minutes? 'If it takes the other students an hour to learn something, it may take me up to three times that much, especially if I have brain fog,' Lina, a mature student at the time, told UM Master's degree student Erika Spiteri in 2015. 'I have to produce a medical certificate every time I have a flare-up and cannot get out of the house.'

The University of Malta Access Arrangements (of October 2018) do not mention fibromyalgia specifically, but they

*If she is planning to wash her hair on a given day she would not have the energy to go buy bread and milk that day. Fear is a constant, a norm.*

mention myalgic encephalomyelitis/CFS and post-viral fatigue syndrome. Christabel believes that the University is equipped with the facilities to make life easier, yet these are still waiting to be put to good use. The option to listen to lectures online would be a game-changer, benefiting various students (e.g. single parents or primary carers). Rebecca and Christabel find a little solace in their NGO, accompanied by the 'ME, CFS and Fibromyalgia support group' on Facebook, where they share their experiences, woes, and advice.

The more I learn about fibromyalgia and myalgic encephalomyelitis patients, the more obvious it is that many problems could be reduced through simple measures and some understanding. If you want to be an ally of people with fibromyalgia or myalgic encephalomyelitis, take a few minutes to learn about these conditions. If you're an employer, try to provide opportunities for people to work from home. Keep an eye out for bullying and be active about stopping it. Understand that another person's pain doesn't always show. Recognise that people with invisible disabilities don't always look ill (actually, they try to look their best). Listen, check in, see what you can do to make your friend's life easier. Try to help sufferers who may be stuck in abusive situations because of their disabilities.

But first, stop judging and relying on assumptions. Don't say things like 'but you look fine' when someone asks for a hand, instead care and listen. **T**

### Further reading

Häuser, W., & Fitzcharles, M. A. (2018). Facts and myths pertaining to fibromyalgia. *Dialogues in clinical neuroscience*, 20(1), 53–62. Available online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6016048/>

ME Research Summary 2019. #MEACTION: <https://bit.ly/2qRPRfZ>

Vella-Baldacchino, M. D., Schembri, M., and Vella-Baldacchino (2014), M. Myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS). *Malta Medical Journal*. 26(1), 17-22.

# We see you

What we see on TV, in film, adverts, and music videos frames the ways we think about romance, coupledness, and the world. **Isabelle Cassar Fiott** talks to **Prof. Brenda Murphy** about how non-mainstream couples find an unexpectedly welcoming space in sitcoms.

Imagine growing up knowing that it's OK to be different, that everyone has the right to be loved, regardless of their race, gender, sexual orientation, age, or whether or not they are differently abled. 'Finding love, being in love, being loved is the most human condition,' says Prof. Brenda Murphy from the Department of Gender Studies at the University of Malta. In her recent research, she looked into the role of wellbeing and humour in shaping representations of couples in sitcoms.

Collins Dictionary defines coupledness as 'the state of living as a couple'. Shelly Budgeon suggests that coupledness is central to our society as it underpins the ideology of marriage and family. This leads to privileging sexual coupledness over other forms of relationships.

Conservative stereotypes thrive where culture is a commodity, where it objectifies and excludes some individuals. Creators of media products have underlying intentions, be they political, monetary, or ideological gain. When films of different genres, TV series, music videos, and advertisements are heteronormative, we, as members of the audience, absorb and carry these messages with us. Conversely, when media products accurately

represent couple diversity, we have an opportunity to break stereotypes and normalise those couples.

Acclaimed art critic John Berger and feminist film theorist Laura Mulvey reveal the omnipresence of voyeurism and the male gaze. Almost every piece of mainstream art depicts women through heterosexual male eyes. This is hardly surprising, as the film and entertainment industry was and still is male-dominated. What happens when non-standard couples enter this landscape?

Let us compare the French movie *Blue Is The Warmest Colour*, directed by male director Abdellatif Kechiche, and the German film *Mädchen in Uniform*, directed by Leontine Sagan in 1931. Both feature lesbian couples. Made through the eyes of a woman, *Mädchen in Uniform* was one of the first-ever feature films to bring a lesbian relationship to the big screen. The film captures the childlike naivety of two young women unexpectedly catching feelings for each other in a time when lesbianism's existence was barely acknowledged.

Meanwhile, *Blue Is The Warmest Color* faced backlash for hypersexualising the two protagonists'

relationships under the guise of its storyline being queercentric. Instead of focusing on the intimate moments between the two, multiple scenes abruptly cut from the women talking to them intertwined in bed, as the camera voyeuristically pans up and down their bodies. Constructed, envisioned, and filmed through the 'male gaze' without any alternative way of seeing, the film makes it impossible for the audience to connect to these girls.



Prof. Brenda Murphy




Media expert Murphy set out to explore whether such a pattern applies to sitcoms – comic TV series centred on a fixed set of characters. A sitcom fan herself, she found ample instances of positive coupledness portrayal and diverse representation in terms of age, sexuality, and race as well as differently abled characters. Her findings became the basis of a book chapter *Framing Couples: stereotypes, romance and idealized romance in the media*.

While past research has thoroughly analysed drama and horror, Murphy picked comedy and took a closer look at internationally popular sitcoms. In her words, sitcoms ‘hearten her’. She didn’t have any difficulty finding representations of disability, so rare in other genres. Through Murphy isn’t sure why sitcoms better represent people across all boards, she has identified one possible reason: ‘One of the main variables around wellbeing is humour. The wellbeing and feel-good factor which surrounds the genre is infectious, so if you’re going to do good comedy, it makes sense to be as inclusive as possible.’ Murphy used the framework of positive psychology, wellbeing, and humour to analyse six TV series. In *The Odd Couple*, two men are platonically cohabitating, creating a form of coupledness which, in her words, successfully ‘plays on and parodies gender roles’. *Speechless* explores the ups and downs of a family who has a child with a disability. *The Middle* follows a lower middle class family living in Indiana in the US, where two parents with three children struggle with home life, work, and raising children. The *Carmichael Show* focuses on a middle class, African American heterosexual couple who, in Murphy’s observation, ‘systematically make statements on social and political issues such as gender equality, Trump vs Obama, race, and social justice’. *Boy Meets Girl* depicts a transgender woman and plays around with the heteronormativity of coupledness with the director and producer choosing to cast a transgender actor as their trans primary character.

Finally, in *Grace and Frankie* we meet two women who come to live together when their marriages fall apart. Against the backdrop of the well-documented trend that

women become invisible on screen as they age, *Grace and Frankie* embraces older women’s sexuality and freedom. These two are an unconventional couple who are neither romantically nor sexually involved, and yet, they are there for each other. All these shows stand out in their authenticity, Murphy says. ‘Each show takes a character who would usually be sidelined, and places them front and centre.’

How and why is this important? Diverse couples should have their existence acknowledged even when they don’t conform to the societal norm. Producers and directors have the power to use media as a cultural platform to communicate values to the masses. It is the responsibility of these professionals to push for more accurate and genuine representations. Murphy, who is all too familiar with the doom-and-gloom findings in media research, is heartened to find positive examples and practices: ‘When it comes to the media, we are usually taking a critical standpoint. We spend a great deal of time looking at negative data and scenarios – it’s nice to look at the positives for a change.’ 

#### Further Reading:

Budgeon, S. (2008). *Couple Culture and the Production of Singleness*. *Sexualities*, 11: 301-325. [10.1177/1363460708089422](https://doi.org/10.1177/1363460708089422).

Mulvey, L. (1999). *Visual Pleasure and Narrative Cinema*. In Braudy, L. and Cohen, M. (eds.), *Film Theory and Criticism: Introductory Readings*. New York: Oxford UP, pp. 833-44.

Murphy B. (2020) [forthcoming]. *Framing Couples: stereotypes, romance and idealized romance in the media*. In Abela, A, Piscopo, S., & Vella, S. (eds.), *Couple Relationships in a Global Context: Understanding love and intimacy across cultures*. National Centre of Family Research of the President's Foundation for the Wellbeing of Society; Springer.

# DNA SPACEWALK

Can bacteria grow in space? How do cells respond to radiation? Geneticist **Prof. Joseph Borg** realised that to find out, he must make some friends outside his discipline.

Every day, I (Prof. Joseph Borg) look inside human cells, aided by the state-of-the-art equipment we have at the University of Malta (UM). But I have always been interested in fundamental questions in science, like 'How and when did life emerge on Earth?', 'How did our solar system and life evolve, and how will it develop in the future?' and 'Is there life on other celestial bodies?' None of these can be answered by one discipline alone.

It was February 2018 when I reached out to Prof. Kristian Zarb Adami, who directs the Institute of Space Sciences and Astronomy (UM). I told him that I was a molecular biologist with a slight inclination for astronomy. When we met, we found that we have more interests in common than the highly fragmented world of science often leads us to think. Research in our fields requires interaction and the exchange of ideas.

Soon we were joined by astronomy PhD student Josef Borg, whose background was in Biology and Chemistry, maths and physics student Maria Aquilina, as well as applied biomedical student Leah Meekers.

Our meeting ground is the science of astrobiology. We spent hours discussing our interests and eventually designed our very first experiment – emitting a 2.8 GHz (10.7cm-long) radio frequency signal and continuously bombarding two small plates containing harmless microorganisms (bacteria): one for 24 hours and one for 48 hours. The question was very specific and simple enough: will such exposure to radio waves change the bacteria's DNA makeup?

This very basic scientific experiment served to get the biologists and astronomers working closer together and learn each others' tools and techniques. I learnt more about radio waves, types of radiation, and the anechoic chamber (a room that completely absorbs sound) used for such studies. The astronomers learnt more about genetics, DNA, and cell biology.

When the time came to conduct our experiment, we took the bacteria we had grown on nutrient agar plates and divided them: four were left in standard laboratory conditions as control samples whilst the other four were placed as test samples inside the anechoic chamber. Two plates

*Our bacteria suffered no harm after being subjected to radio waves at a frequency of 2.8 GHz for up to two full days!*

stayed for 24 hours, while another set remained there for 48 hours.

I was back in my scientific comfort zone. We extracted bacterial DNA and tested its quality and integrity; we quantified it with the standard tools available in my molecular biology laboratory. Once we had the DNA from both test and control samples, we sent them off to the Gene Core Facility at the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany. At this facility, the bacterial DNA we extracted was subject to whole genome sequencing that essentially enabled us to read all of the bacteria's 4.6 million DNA nucleotides.

We could finally compare our samples and determine whether there were any meaningful differences between the bacteria exposed to radiation and those that weren't. Belinda Giardine from Penn State University helped us with bio-informatic studies to compare DNA variants between test and control samples. There were no obvious or meaningful differences between the samples, which concludes that our bacteria suffered no harm after being subjected to radio waves at a frequency

of 2.8 GHz for up to two full days!


We want to continue joint experiments to learn how cells behave and adapt to increased radiation exposure. These findings can lead us to a better understanding of cancer and tumour biology – which cells respond best to radiation therapy? What is the minimal radiation dose that can achieve therapeutic effect with the least damage to cells? But we will also be equipped to ask more ambitious questions: how can we prolong human presence in space and space missions? Can we genetically manipulate human cells to withstand solar radiation? Can we increase the length of stay in space, making missions to the Moon and Mars *and* back more feasible and realistic?

To build on the good work and prevent a counterproductive fragmentation of existing resources, the group now plans a platform for research, training outreach, and dissemination in astrobiology, open to researchers from various backgrounds. The Institute for Space Sciences and Astronomy provides an excellent platform for this to take place with its small but steady flow of ambitious ideas for research. The group are



**Prof. Joseph Borg**  
Photo by Luke Saliba

now planning small biological and chemical experiments that can fit into a small cube and be launched under low earth orbit conditions to determine what happens to cells at both DNA and RNA level.

Having formed this young group, we hope to move the frontiers of understanding life in our galaxy. We have come to realise what Carl Sagan meant by 'The nitrogen in our DNA, the calcium in our teeth, the iron in our blood, the carbon in our apple pies were made in the interiors of collapsing stars. We are made of starstuff.' 




# START UP





# Tying loose knots

*'Where there's a will there's a way' is a principle that sparked the idea of a business aiming to bring peace of mind to wedding preparations. Get Hitched co-founders tell **Marija Camilleri** how they have been growing their start up, how they decided to 'breathe' after a brief experiment in the UK market, and what further expansion they have in the pipeline.*



A wedding should be a magical experience, full of happy memories with friends and family. The run-up to the occasion, however, is an entirely different matter.

The couple is stuck with having to contact and coordinate countless vendors, wasting time and energy. This stress can disrupt people's enjoyment of own wedding.

Jonathan Azzopardi Frantz, co-founder of wedding organiser platform Get Hitched, together with his now-wife, found themselves chasing wedding suppliers for information, quotes, and packages two and a half years ago when preparing for their big day. Azzopardi Frantz would call and send emails and instant messages to suppliers, but most of them would not even bother to respond, while others simply told them that they were fully booked.

The couple, both entrepreneurs, started to get irritated. 'Photographers, videographers and the like should chase me instead of me

chasing them,' he said. The groom decided to share his frustrations with his business partner Benjamin Vincenti. 'The biggest question at the time was not how big of a business this could be but "How did no one think of it before?"' says Azzopardi Frantz. When Vincenti heard about the lack of a one-stop-shop for weddings, he took to it immediately. 'We did some research and couldn't find such platforms; all we found were the typical directory sites, which meant that you still had to contact the vendors one by one. And so we built it ourselves,' says Vincenti.

Their joint venture, Get Hitched, launched at the Malta Fairs and Conventions Centre (MFCC) weddings fair two years ago and has now grown to over 400 suppliers and 13 employees. 'Before we set out to build Get Hitched we validated the idea; we brainstormed around Jon and his wife's pain points and then we spoke to other couples, asking them whether they would use such a platform. All of them responded with 'yes, obviously!' and that was the first part of the puzzle,' explains Vincenti. ➤

The co-founders needed to make sure that suppliers would actually invest in this product. They created a prototype to sell to vendors and managed to generate over €13,000 without a brand name or website. All the profit earned from Get Hitched has gone back into the business. 'Use our platform to find everything you would need for your wedding, [and] there is nowhere else you need to go — save time and hassle, stop chasing people and focus on what's most important, like enjoying your relationship and having fun at your wedding,' Vincenti summarises his company's offer.

When he started building this business, Azzopardi Frantz already had his own marketing agency, which was working with Joe Bartolo at the University of Malta. Bartolo told them about the TAKEOFF incubator, and the founders applied for the seed fund. 'Winning the TAKEOFF award was more than just about the funding [...], it was more about the acknowledgement that we are doing something different and innovative,' asserts Vincenti.

'Our team is multicultural. We have people from Malta, the United Kingdom, and Lithuania. Even in terms of users, some 25% are non-Maltese residents, but arrive here to get married,' he adds. The bulk, although not all, of their suppliers are local.

'The company makes its revenue from suppliers through two different pricing models, meaning that the service for users has been and will always remain completely free,' Vincenti explains. As suppliers pay for the listing, neither the platform nor the supplier applies commission to the prices the end-user pays. 'We are not just a listing provider, we match the criteria of the user with the

supplier, so if the supplier doesn't match the client's budget or is fully booked on the day, for example, they won't even communicate with each other,' he says.

Users can filter suppliers based on the date of the wedding, the estimated number of people to serve, budget, and over 35 categories of services. Get Hitched suppliers are vetted meticulously. The team speak to people who have used the service directly, converse with the vendor over the phone and then arrange a face-to-face meeting. 'In certain situations, we have stopped engaging a supplier because they didn't give a good service,' admits Vincenti.

Once a match is made, the customer and the supplier can start communicating directly through the website. 'Competition and users' expectations are always increasing, and so you need to give the customer a tailor-made, personal service,' says Vincenti.

Knowing that most of the couples getting married would also plan a bachelor or hens party, the founders decided to launch a category for those events. Not to

*There is nowhere else you need to go — save time and hassle, stop chasing people and focus on what's most important, like enjoying your relationship and having fun at your wedding,'*



**Benjamin Vincenti and Jonathan Azzopardi Frantz, founders of Get Hitched**

mention that the two have recently built another website, Evently, which is an extension of Get Hitched. 'In just three months we have added 130 suppliers and have had over 90 companies from the iGaming industry, the government, and the financial sector using it to find venues for their events,' Vincenti says about Evently.

Not all of their wild ideas enjoyed smooth sailing. Get Hitched attempted to venture outside of Malta with Wedago in Manchester, UK, but the team soon realised that the demand for weddings over there in Manchester was not comparable to that of Malta. 'An average wedding in Malta would hold approximately 400 people and therefore more services are needed, such as a photo booth, photographer... some couples would even want fireworks,' notes Vincenti. 'UK weddings hold an average of 30 people, who would get married and go for lunch. So it's a smaller operation, there isn't the need for the 35 services that we have on

Get Hitched,' the co-founder adds. Hence, management decided to pull out from the United Kingdom since growth there was not up to founders' expectations.

'We learned many lessons from this experience and it was a very tough time for the company, but we are very grateful that we went through it since we learned so much and became much more stream-lined in all our processes,' Vincenti adds.

Despite past setbacks in foreign markets, the founders are currently looking to expand. 'Start ups are ever-changing at lightning speed so we are constantly adapting,' Vincenti adds. 'Our vision is to internationalise our platforms and be the matchmaking platform of users finding their suppliers for the world. We love Malta and it will always be our home, but we have bigger aspirations.' **T**

**This article was written in collaboration with Business Malta.**

# LAB TO LIFE

The new laser head applied to an industrial 3D printer  
Photo by Laser Engineering and Development Ltd.

## Lasers bonding layers

*Does 3D printing have what it takes to make manufacturing environmentally friendly?*

*Using only as much material as a part or product requires, it would seem so.*

**Iren Bencze** asks what, then, stands in the way of its widespread adoption.

From Science in the City to robotics festivals, a signature sight at technology-related events is a crowd of hypnotised-looking children, following a 3D printer building, layer by layer, a vase or animation character. From dentistry to design, the technology is promising to make future manufacturing customisable and renewable (as materials can be made from starch or roots). Yet, according to Newsweek, the industry suffers from 'a gulf between expectations and realities', and some analysts have claimed the hype is now over. So, can we make 3D printing live up to its promises?

The answer may lie in controlling irregularities. In fused filament fabrication (FFF), one of the 3D printing methods, a computer controls the release and depositing of melted thermoplastic, layer-by-layer. The molten material solidifies under exposure to a cooler environment, and the printer can add another layer until the 3D object materialises. Just like ordering a prototype from the Replicator on Starship Enterprise, right?

Well, not quite. Yet. While fused filament fabrication serves research, engineering, and development, it wrestles with adhesion-related problems. Molten thermoplastic solidifies as it cools, so the deposited layers can shift, delaminate, warp, or form irregular walls. Under these circumstances, the mechanical properties of the 3D-printed object also suffer from decreased tensile strength and defects caused by porosity. In other words, they suffer from the same drawbacks as wood, which is stronger along the grain than across it.



Left to right: Gabor Molnar, Kiss Szabolcs, Arif Rochman and Francesco Impaziante  
Photo by Laser Engineering and Development Ltd.

Award-winning company Laser Engineering and Development Ltd. undertook the challenge to overcome this major hurdle. Their proposed LAsseeR next generation FFF 3D printer uses innovative laser technology to try to bring about a great leap forward in the industry.

The LAsseeR technology uniquely uses laser heating to strengthen the inter-layer bond while printing objects. This should increase their strength. Project coordinator Gabor Molnar hopes that the advance will overcome the hurdles 3D printing faces in manufacturing.

Funded by MCST's FUSION fund, Laser Engineering and Development Ltd is developing a functional prototype that can be integrated into a regular FFF 3D printer. They are collaborating with the Department of Industrial and Manufacturing Engineering (DIME; Faculty of Engineering, University of Malta [UM]) for their specific expertise on polymers. The micro enterprise, which has under five full-timers, had never cooperated

with Malta's academics before, but with the help from the Knowledge Transfer Office at UM, they were introduced to polymer processing and testing specialist Dr Arif Rochman. He brought to the project extensive experience with industrial partners, and DIME contributed state-of-the-art 3D printers for both metals and polymers.

Reflecting on the early days of the project, Molnar notes that their main challenge was HR-related. Malta being a small country, it was difficult to find creative professionals with the right expertise. With nationals from Hungary, Italy, Malta, and Malaysia on the team, the current challenge is multicultural management. 'While it is difficult to coordinate various viewpoints and workstyles, cross-cultural knowledge sharing should be the norm for any project with global impact,' Molnar says.

In the LAsseeR project, DIME is developing special filaments from different polymers that can highly absorb laser radiation. Molnar hopes that the combined academic and industrial expertise will make 3D

printing faster. On the average, it can take an hour to print a 5–15 cm tall object with FFF technology. The time depends on filament material and thickness, layer thickness, print nozzle temperature, and so on. Using concentrated energy and more precisely controlled heating, the proposed technology will be able to melt a thicker filament, a 50W laser can heat up the filament from room temperature to printing temperature in one tenth of a second. 3D printing should get hotter and faster.

By overcoming problems in build speed and mechanical strength, this Maltese innovation could contribute to more 3D printers being used to manufacture goods. These printers would make manufacturing more environmentally friendly by reducing the amount of material used and being able to use plant-based polymers. The team's hope is that beyond patenting the new technology of laser heating to strengthen the inter-layer bond, they will be able to introduce it to factories worldwide. **T**

High  
School  
Senior



# Living in Maltese

A new European Commission tool facilitates easy and accurate translation between English and Maltese. Author and translator **Mark Vella** is tirelessly promoting this translation product. He speaks to **Teodor Reljic** about how the Maltese language and its literary heritage has defined his life and career from graduation onwards.

The Maltese language is a defining element of Mark Vella's life and career. First, he served as a sixth form Maltese teacher at the St Aloysius College, and set up a Maltese publishing house. He later on moved to Luxembourg as a Maltese translator in the mid-noughties and became a published author.

Now serving as Language Officer at the Directorate-General for Translation (Maltese Language Department) within the European Commission Representation in Malta, Vella recalls the mixed cocktail of emotions and expectations that greeted him when he first started reading for a Maltese undergraduate degree at the University of Malta back in 1994. 'Unfortunately back then Maltese was still considered to be something of a "Cinderella course",' Vella tells me as we chat in his Valletta office. 'The English Department was always [seen as] the more "sophisticated" option and sadly, Maltese was always considered to be the domain of the "losers",' he says with a wry smile. The course was then quite small in every respect, with just 10 students.

Eventually the zeitgeist started changing. 'The next generation of lecturers who came up – like Bernard Micallef and Adrian Grima – began to apply a more modern approach to the course, and so revitalised it [to become] more outward-looking [and] forward-thinking.' But Vella did not get to enjoy this scene, even if his experience of academia

did nudge him towards some future research paths. 'It was after I went through my Master's course in Maltese that I developed a fascination with the Maltese short story, and the work of Juann Mamo in particular...' In 2010, his interest in Mamo led to him editing a publication of Mamo's short works, called *Ġrajja Maltija, for Klabb Kotba Maltin*.

But the pleasures of such intellectual pursuits would come later for Vella. Upon graduation, he decided to pursue his Postgraduate Certificate in Education, which left him quite 'appalled'. 'I found that the default, inherited approaches we have towards teaching the Maltese language do tend towards the stifling,' Vella says. 'We get bogged down in grammar, have an unhealthy obsession with "Malti pur" [pure Maltese], and generally just prevent kids from expressing themselves naturally.'

Vella remembers how English literature novels and textbooks were written in a far more engaging way than their Maltese counterparts. 'Now, to be fair, I wasn't teaching during the *Denfil* days,' Vella says, referring to the previously standard, and intellectually bereft, Maltese-language reader. 'But I did often find myself in a situation where I had no choice but to "invent" my own resources ad hoc.'

Despite all these frustrations, the needs Vella saw in his students were the same as his. 'I noticed them responding to the lack of variety and choices available, so that pushed me to take a more pro-active and creative' ➔



eTranslation interface (screenshot)

approach towards introducing them to the language, and to Maltese literature in particular,' Vella remembers. 'When you're teaching young adults, there's a thrill to noticing what tickles their fancy, and realising that you can in fact make Maltese literature relevant to their experience.'

Vella's sensitivity to the pulse of Maltese literature led him to set up the boutique publisher, Minima. Although comparatively short-lived, the enterprise started a literary revolution whose after-shocks are still being felt. 'The idea started brewing in my mind during my final year at university. I began to observe certain trends in Maltese writing, and thought that a new anthology of short fiction and poetry would be the way to go.'

This all happened before social media, so how did Vella go about scouting for works? 'Yes, it was more challenging back then for obvious reasons. I'd like to refer to them as the *kittieba tal-kexxun* ['desk-drawer authors'] who wouldn't always showcase their works openly, and there weren't all that many avenues for all that to begin with.'

Nevertheless, Minima can go down in history for being the first publisher to take on Immanuel Mifsud, now a leading figure of Maltese literature, and whose work Vella first encountered through self-published early volumes. Another notable discovery was author Ġużè Stagno, whose grittily humorous works were self-consciously

touted by critics and commentators to be the expressions of a new literary 'enfant terrible' on the Maltese scene. Minima released Stagno's debut novels, *Inbid ta' Kuljum* (which grew from a TV series brainstorming session) and *Xemx, Wisq Sabiħa*, whose multi-protagonist tale of local debauchery promised the arrival of a 'Maltese Irvine Welsh'. Like Mifsud, Stagno would go on to publish later works in mainstream venues after Minima folded, cementing that publisher's un-ignorable impact in grooming literary talent.

Stagno's latest work, 'What Happens in Brussels Stays in Brussels', intersects with Vella's life post-teaching, and post-Minima. Though the narrative of the novel (published by Merlin in 2013) is very much its own thing, its context runs in parallel to Vella's career trajectory: heading off to Luxembourg to work as a Maltese-language translator, forming part of that first wave of translators that emerged in a post-EU accession Malta.

When we meet, he's thrilled to talk about the Commission's eTranslation tool – an efficient and easy-to-use product meant to facilitate translation of documents and available, for free, to all public service officials and academics in the EU, Norway, and Iceland until 2020.

'Malta has an added advantage when it comes to this tool as we're very much a bilingual country, unlike others who would need a bridge translation to English [using English as





**Mark Vella**  
*Photo by Nathaniel Galea*

an intermediary language between two others – ed.] before making use of the product,' Vella says, while talking about an undeniable dichotomy between speech and writing. 'Maltese is widely spoken amongst families, groups of friends, other social, and even professional contexts. The problems seem to start at the written-word level. You can still see a cultural resistance to Maltese, even when it comes to administrative or bureaucratic procedures,' he elaborates.

He soon brings up an example. 'Say you want to apply for a loan from the bank. You'll book an appointment with the bank official, and your face-to-face conversation with them will likely be in Maltese. But any follow-up paperwork and correspondence that you'll receive will be written in English.'

According to Vella, the eTranslation product helps to address this confidence gap. 'We've met with public officials and shown them how the product works, and they were thrilled to see it in action – the possibility of translating documents into Maltese quickly, while being safe in the knowledge that the translation was fully "legit", came as a great relief. A lot of these departments are handling a large volume of translation regularly, and so a product like this is crucial.'

And if you're thinking, why develop new solutions when we have Google Translate, Vella assures me that the eTranslation platform has a distinct advantage. The

eTranslation platform 'doesn't draw from any random subset of information – so that it will soak in linguistic cues even from social media posts and so on – but it bases itself on established sources. Another important advantage is that it is built on a neural, not statistical, machine translation model.'

Another happy offshoot of this product, according to Vella, is its potential to burst the 'Brussels bubble' of Maltese competency. The tool allows the same rigour and precision honed by jobbing EU translators – 'Brussels Maltese' – to trickle down into public service use.

With a wealth of experience behind him, Vella is back in Malta to work at the European Commission Representation in Malta, and he is happy to observe a further boost to the Maltese language. 'Suddenly, the "Cinderella course" gave way to an exciting opportunity,' Vella beams, an opportunity he is now living. **T**

**eTranslation is available to University of Malta's academics and selected students (10 accounts per lecturer on a temporary basis) thanks to the European Masters in Translation quality label. Lecturers can apply for a personal account. More information at: <https://bit.ly/2MQ22Cy>**

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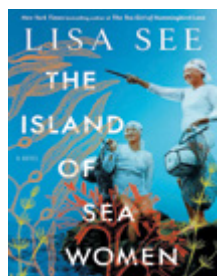
# TO-DO LIST

## MUSIC



Tune in to **Flying Lotus's** 6th album, *Flamagra*, an interesting mix of hip hop, electronica, funk, and jazz!

## BOOK



*The Island of Sea Women* by **Lisa See** is a tale of friendship and family. Set in the Korean island of Jeju, the story revolves around the lives of two girls from different backgrounds and their experience working in the sea as professional divers.

## MOVIE



### *A Dog's Journey* (2019)

Sequel to the 2017 movie 'A Dog's Purpose', this heartwarming movie shows the life of a dog as he understands the meaning of his existence through the lives of humans he meets.

## YOUTUBE CHANNEL

The host of this channel, **Sonny**, travels to different parts of the world and explores different cuisines. From pig brain soup to sting-ray hot pot, this channel isn't for the faint hearted!



## TV



### *Peaky Blinders*

A crime drama revolving around a British family, this show is set in the aftermath of World War I.

## PODCAST

### *Pasha from The Conversation Africa*

From stopping measles in DR Congo to South African research of Stone Age music, this podcast informs us about exciting research projects on the African continent.



## INSTAGRAM



### **Matthew Vandeputte** **@matjoez**

The celebrated travel photographer makes beautiful timelapse videos, vlogs on his travels, and provides tutorials on photography.



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